



TALWANDI SABO POWER LIMITED

Tender Specification No:

TN/6/TSPL/PELLET/2023-24/R0

BIDDING DOCUMENT

FOR

**SUPPLY OF AGRO BASED RESIDUE BIOMASS TORREFIED PELLETS
(SHORT TERM)**

For

**TALWANDI SABO POWER LIMITED
1980 MW SUPERCRITICAL THERMAL POWER PLANT**

**AT VILLAGE BANWALA,
DISTT. MANSA, PUNJAB, INDIA**

29th Apr 2023

*This document is a can be amended at the discretion of TSPL (if needed).

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1. INTRODUCTION

Talwandi Sabo Power Limited ("hereinafter referred to as "TSPL" or "Owner" or "Company"), a subsidiary of Vedanta Limited , has developed one of the largest green-field Thermal Power Project in Punjab with capacity of 1980 MW (3 x 660 MW). TSPL is the largest power producer in Punjab and 100% power is being supplied to the state of Punjab.

2. SCOPE OF SUPPLY

TSPL is inviting tenders from Vendor(s) for supply of Agro based residue torrefied pellets of 75,000MT, the detailed scope and activities are mentioned below.

- 2.1 The scope of work under this package shall include supply (loading-un loading, transport, and delivery of Material at TSPL plant as per the guaranteed parameters mentioned in clause Bid Document.

Details of Material:

S. No	Description of Item	Indicative Qty to be supplied per Day (TPD)	Total Qty. (Tonne)
1	Agro residue based Torrefied pellets**	250	75,000

Note:

**Agro residue collection/ sourcing preferably from NCR region @50% of the total ordered quantity is mandatory for the party interested to supply torrefied pellets to the TSPL. Contractor will be required to provide documents in the form of certificate from state authority from the where the agro residue have been sourced as evidence along with monthly bills.

- 2.2 Unloading shall be in the scope of Contractor at a designated place inside TSPL plant. Contractor shall supply and ensure that the Material is loose filled in the dumpers (Trucks with hydraulic based auto unloading system).
- 2.3 If Contractor shall supply the Material in tarpaulin covered trucks and make sure that it is waterproof to prevent the Material from rain and dusting. Consignment not supplied in tarpaulin covered trucks shall not be accepted.
- 2.4 Demurrage, if any, on the carriage vehicle for any reasons shall be borne by the Bidder / Contractor.
- 2.5 Agro residue /crop residue means the leftover portion of the crop or agriculture produce such as stubble/ straw/ stalk/ husk etc. / horticulture waste etc.
- 2.6 Any byproduct of woodwork factory (such as wood, wood chips, saw dust, furniture waste etc.) shall not be treated as agro/ crop residue and shall not be accepted for delivery.
- 2.7 Agro residue based Torrefied pellets can be manufactured using single or multiple agro /crop residues together.
- 2.8 The Contractor shall mention the name(s) of agro/crop residue(s) used for manufacturing of Torrefied pellets and their approximate proportion in consignment details during

dispatch of Material.

- 2.9 Natural additives/binder such as lignin, starch, animal dung etc. can be used for manufacturing torrefied pellets briquettes if required and same shall also be explicitly mentioned by Contractor in consignment details.
- 2.10 TSPL reserves the right to exclude any base Material/additive/ binder or modify their proportion, if any adverse impact of the base Material/ additives/binder is found on boiler in long run.

3 SCOPE OF WORK RELATED TO VEHICLE MOVEMENT INSIDE THE PLANT & PENALTY

- 3.1 Only trained drivers/operators/helpers having valid driving licenses/permits shall be engaged. TSPL reserves right to verify such licenses/permits/Registration Certificate/Vehicle Insurance/Pollution Under Control (PUC) Certificate. Further, drivers/ operators/ helpers should be physically and mentally fit for performing their respective duties. Personnel under the influence of alcohol/drugs will be barred from entering the premises.
- 3.2 Every vehicle should be accompanied with trained helper/cleaner who should be directed by supervisors of Contractor to escort the vehicle movement safely inside the plant.
- 3.3 Adequate and qualified manpower shall be deployed for unloading activities; for supervision at various places for patrolling en-route to TSPL Plant and return route from TSPL Plant and shall report on a daily basis to the Authorized Person(s) of TSPL as required.
- 3.4 Contractor should ensure that loaded Tippers do not take unnecessary halts en-route to the Plant.
- 3.5 Contractor's representative should be available at the time of supply inside TSPL premises for complete coordination of all activities like unloading, sampling, weighment, gate entry and exit formalities etc.
- 3.6 The Contractor shall execute the work in accordance and compliance with Applicable Laws and Good Industry Practice.
- 3.7 Penalty for violation of safe and efficient Material transportation to TSPL's delivery point:
 - 3.7.1 Driver found under influence of alcohol/drugs: Any incidence of Tipper Drivers/ equipment operators and personnel being found under the influence of alcohol/drugs. Penalty shall be Rs 10,000 for first incidence, then Rs 15,000 for second incidence .and from third incidence Rs 20,000 in addition to blacklisting of the concerned personnel, who shall not be allowed by the Contractor to perform any activity under the Contract.
 - 3.7.2 Over speeding of vehicle. Penalty is Rs 5,000 per incidence.
 - 3.7.3 Overtaking of tippers standing in queue for weighment/ unloading/ in front of plant gate on plant main approach road unless allowed by TSPL on certain

exigencies.

4 QUANTITY DETERMINATION

- 4.1 Weighment of trucks shall be carried out on Weighbridges (for tare and gross) at TSPL Plant. Net weight = Gross weight less the tare weight as measured at TSPL Weighbridge (WB). The Bidder may witness weighment of trucks once in 30 days, TSPL representative will accompany the Bidder's representative when any such visit is carried out. Bidder shall intimate TSPL via e-mail at least two days in advance about the date of such visit.
- 4.2 TSPL shall provide a copy of calibration certificates if requested by the Contractor. TSPL shall undertake the calibration of WB in line with the schedule/practice as recommended by Legal Metrology.
- 4.3 Net adjusted quantity received at TSPL Power Plant i.e. quantity worked out by TSPL after carrying out adjustment due to quality variations with respect to the base parameters, if any, shall be applicable for the purpose of payment.

5 QUALITY DETERMINATION

TSPL receipt end quality determination:

- 5.1 TSPL will carry out the sampling, preparation and testing of supplied torrefied pellets at TSPL Power Plant as per the provisions of either BIS/ASTM/ISO. TSPL will carry out the sampling and testing process as per the relevant BIS/ASTM/ISO standard for sampling from the consignment received in a day.
- 5.2 TSPL at its own discretion will conduct the HGI testing for the selective consignment.
- 5.3 Samples collected for supplies received in a single day will be reduced as per relevant standard and one sample will be prepared for the samples collected in the entire day. This sample will be used for quality determination purpose for the quantity supplied on that day.
- 5.4 The Contractor's representative will have the option to witness the sample collection, preparation, testing of main sample and final packing of the reserve sample through CCTV real time footage (following coverage locations). Any dispute related to sampling, preparation and analysis activity has to be raised strictly within 48 hours of the respective activity. Further any dispute related to test results may be raised strictly within 5 days of the declaration of the results by TSPL. The dispute is to be registered / raised through email/ letter to TSPL, in case the prescribed format is not adhered to the claim for reserve sample testing will not be entertained. The disputes with respect to sampling and testing may be entertained only if backed up by logical and justifiable reasons. Frivolous/repeated disputes may invite penal action by TSPL.
- 5.5 Wherever CCTV coverage facility is not available for a particular area/activity, physical access to the that process may be provided (TSPL representative may accompany the Contractor in such cases). However, for testing of reserve sample physical access to testing facility will be allowed.

S No	Locations Under CCTV Coverage
1	WB
2	Unloading yard
3	Area between unloading yard to lab
4	Air drying room inside the lab
5	Other areas of Lab

5.6 Contractor acknowledges that TSPL have given the opportunity to witness the process of sampling and testing through CCTV Realtime footage. Request for testing of reserve sample has to be based on justification acceptable to TSPL.

5.7 As this process of sampling and preparation is a continuous round the clock process to deal with the multiple consignment workloads, so TSPL would carry out the process as per the time deemed suitable for the process, hence it is the responsibility of the Contractor's representative to be available at all times at CCTV monitor location to witness the same.

5.8 TSPL may request Contractor to withdraw representative who is not diligent and/or is not cooperative. Frivolous/unreasonable objections to the sampling and testing process at TSPL will not be entertained. It may be noted that witnessing of testing (if any) carried out outside of TSPL lab will not be feasible and should be avoided.

5.9 TSPL may also consider (at its option) sharing of part of sample (third sample) with the Contractor. Third sample is for reference of the Contractor only and results of analysis of third sample will not be considered for determining the payments.

5.10 Reserve samples will be preserved in the TSPL laboratory under jointly (TSPL & PSPCL) locked almirah in sealed condition for 30 days (from the date of declaration of results) in safe custody of TSPL.

5.11 Generally, quality reports will be generated within 7 days of receipt of the Material and same will be communicated to Bidder subject to receipt of loading end quality report.

5.12 Despite having offered/ provided access to sampling, sample preparation and testing processes through CCTV real-time footage to demonstrate transparency, the right to raise dispute for testing reserve sample will be given to the Contractor.

The number of results challenged for referee sample testing by the Contractor shall be considered to the extent of 50% of the total vehicles received in a Batch. 50% results challenged for referee shall be tested at TSPL lab and remaining 50% samples shall be analyzed at 3rd party external laboratory.

5.13 The SOP for testing of reserve sample subject to satisfaction of criteria as per 5.12 above as under:

- a) The Contractor will be intimated 4 days prior to the extraction of referee sample from the joint custody.
- b) Referee samples will be taken out from the joint custody of TSPL & PSPCL in presence of Contractor.

- c) For referee sample testing at third party external laboratory, following procedure shall be followed:
- I. The sample will be jointly re-packed and sealed by TSPL and Contractor post extraction from the joint custody.
 - II. The sealed and packed sample will be sent to 3rd party external laboratory for analysis. The detail of 3rd party external laboratory is as under:
 1. National Metallurgical Laboratory
 2. Indian Institute of Chemical Technology
 3. Institute of Minerals & Materials Technology
 4. Inspectorate Griffith India Pvt Ltd
 5. Shriram Institute for Industrial Research
 - III. The 3rd party external laboratory for testing the referee sample amongst the above shall be decided by TSPL at its own discretion.
 - IV. Referee sample will in no case be handed over to the Contractor and shall be physically handed over to the 3rd party external laboratory in presence of TSPL and Contractor representative. If permitted by the external referee lab, analysis shall be carried out in presence of TSPL and Contractor's representative, if present.
 - V. The cost related to testing for the referee sample shall be to the account of the Contractor, the same shall be deducted from Contractor's monthly bill. It is to clarify that the Contractor shall directly bear the cost of travelling, boarding, lodging and other related expenses for its own representatives.
 - VI. Results reported by 3rd party external laboratory shall be final and binding on both Parties, the Contractor and TSPL for all commercial purposes.
- d) For referee sample testing at TSPL laboratory, following procedure shall be followed:
- I. Referee sample testing shall be carried out in presence of Contractor's representative.
 - II. In case of testing of referee sample for GCV, bomb calorimeter will be calibrated/verified as per BIS/ASTM/ISO prior to testing. Post successful verification of bomb calorimeter, referee sample will be tested as per applicable standards.
 - III. The calibration status of oven, muffle furnace and weighing equipment will be demonstrated through valid calibration certificates.
 - IV. The entire process including taking out the referee samples from joint custody, extracting the quantity from sealed packet and final analysis will be captured on CCTV camera. If CCTV camera is not functional for any area, video recording of that process will be done through mobile camera.
 - V. Based on the testing TSPL will share the revised results. Results declared by TSPL shall be final and binding on both Parties, the Contractor and TSPL for all commercial purposes.

5.14 PSPCL representative (s) may witness the process including testing of referee samples.

5.15 Any misuse of real time footage witnessing by Contractor or its representative will be viewed seriously and may result in disqualification/blacklisting of a Contractor, including denial of this access for the balance period of supply of torrefied pellets. The

presence of more than one representative of a Contractor will be viewed as unnecessary and violation of the privilege. Repeated violations may lead to the cancellation of the gate pass and the banning of entry on the premises.

- 5.16 It may be noted that referee samples shall only be used in case of conflict of quality and price adjustment, whereas, in case of rejection of consignment due to Total moisture (TM), Power Plant reported Total Moisture (TM) result will be final and binding.
- 5.17 To prevent misuse of the facility by disputing the majority of results of the lot, Power Plant will abort this reserve testing process in case if the reserve sample results (first two) are within the repeatability limits (as per BIS 1350) from original results. In this case, original results will be considered for payment purposes.
- 5.18 Any torrefied pellets that is received at TSPL will not be returned/ permitted to be collected by the Contractor unless agreed to in writing by TSPL.
- 5.19 Standards/Methods as per the table below will be referenced/used for quality determination:

S. No.	Technical Data	Testing Method/Standard
1.	Dimension (Diameter & Length)	ISO 17829 or Equivalent method may be referred
2.	Fines (%)	ISO 18846 or Equivalent Method may be referred
3	GCV(ARB)	IS 1350 or equivalent method may be referred
4.	Moisture content (ARB)	Method based upon IS 1350 or equivalent method may be referred (Hand-Held Moisture Meter may also be used)
5.	HGI	ISO 5074 or equivalent method may be referred

- 5.20 For Determination of Total Moisture (TM) content:
- a. Samples shall be collected from each truck/dumper for TM determination.
 - b. TM will be determined by Power Plant lab validated method based on IS 1350,

(10g of 2.90mm passing sample will be heated for 2 hours at 108 +/- 2 Deg C. Total Moisture will be computed as per the formula below:

$$TM\% = (W1-W2) \times 100 / W1$$

Where: W1= Initial Weight of Sample (10 grams) W2= Final Weight of Sample.

Note: Before unloading, samples shall be tested for moisture at TSPL end. If this value is in the rejection level range, the consignment shall be rejected and it shall be the contractor's responsibility to carry it back at his own cost.

6 PRICE & PRICE BASIS & ITS EFFECTIVENESS

- 6.1 The Bidder shall quote its most competitive prices for the Scope of Work in Price Bid

format (Annexure A Price Schedule). Any quantity which is allocated during the Contract period but not delivered during the Contract period will be executed at the price applicable for that specific Contract period along with the same terms and conditions under the Contract.

- 6.2 Price shall be quoted in Indian Rupees only.
- 6.3 Bid price shall be inclusive of all taxes, levies, cess and duties etc. except GST (on the invoice as applicable on the date of invoice). GST shall be applicable as per Govt norms.
- 6.4 Owner shall deduct applicable taxes at source (TDS) as per statutory requirements.
- 6.5 Alterations to the Form of Bid and associated document shall not be permitted. Any alteration other than the filling in of blanks intended for that purpose or failure to comply with these instructions may result in the rejection of the bid.
- 6.6 Bids must be submitted solely on the basis of the Bidding Documents and must be free of any qualifying statements.
- 6.7 Bidder shall submit offers that comply with the requirements of the Bid Document.

6.8 Price Variation:

- a) The purchase price mentioned in PO shall be annually revised from date of issue of PO. For destination Prices quoted by the contractor shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labour, Diesel, Electricity, cost of raw material in accordance with the procedures specified below:

It is understood that the price component of the items for any shipment/dispatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for raw material, labor, diesel, electricity (description and co-efficient as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable on each shipment/dispatch shall be computed as under:

$$EC = EC1 - EC0$$

EC1 will be computed as follows:

$$EC1 = EC0 \{F + a X (A1/A0) + b X (B1/B0) + d X (D1/D0) + Lb X (L1/L0)\}$$

Where,

EC = Adjustment to FOR destination Price Component expressed in the currency of the Contract payable to the contractor for each shipment/dispatch.

EC1 = Adjusted Amount of FOR destination Price Component expressed in the currency of the Contract payable to the Contractor for each shipment/ dispatch.

EC0 = FOR destination Price for the item in the currency of the Contract, shipment/dispatch wise.

F = The fixed portion of Component of the Contract Price. It shall be 0.08

a = Co-efficient of High-speed Diesel fuel, it shall be 0.13

b = Co-efficient Electricity, it shall be 0.17

d = Co-efficient for raw material component, it shall be 0.42

Lb = Co-efficient for labour component which shall be 0.20

A0 = High Speed diesel oil price as on one month prior to date of submission of Price bid.

A1 = High Speed diesel oil price as on one month prior to the date of shipment.

Note: Price of High-Speed diesel oil, at Pump Station of Indian Oil Corporation or HP or any other Govt. oil company nearest to the Project Site, where the material shall be delivered. (Selling price inclusive of taxes and duties as per liter of H.S.D. Oil).

B0 = WPI (Electricity) as on one month prior to date of submission of Price bids.

B1 = WPI (Electricity) as on one month prior to the date of shipment.

(Note: As per Office of Economic Advisor).

D0 = Raw material price as on one month prior to date of submission of Price bids

D1 = Raw material price as on one month prior to the date of shipment.

Note: The values of D1 & D0 shall be derived from Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulation, 2020 as per the applicable year. The CERC regulations considers an escalation of 5% per year in the raw material price.

L0 = All India Consumer Price Index for Industrial workers (All Indian Monthly Average) as on one month prior to date of submission of Price bid.

L1 = All India Consumer Price Index for Industrial workers (All Indian Monthly Average) as on one month prior to the date of shipment.

Note: As published by Labour Bureau Shimla, Govt. of India.

- b) Statutory variations (increase or decrease) on account of the change in statutory taxes & duties, introduction of any new tax, withdrawal, or modification of any tax shall be passed through during the period of Contract. Documentary evidence shall be required from the Bidder for the same.
- 6.3 The rates quoted by the Bidder in the Price Bid be deemed to cover the cost of all the relevant operations/works mentioned in this Bid Document. No claim for any increase in cost shall be entertained on any account except in terms of 6.2 above.

7 COMPUTATION METHODOLOGY FOR SUPPLY PAYABLE & VARIOUS RECOVERIES /QUANTITY ADJUSTMENTS

7.1 The Contractor shall guarantee technical parameters of agro residue-based torrefied pellets as given in following Table-1. The characteristics contained in Technical Specification (Table- 1) shall be adhered to and maintained and non- adherence shall result in 'Quantity and Price Adjustment' as per clause 7.2 or even rejection as per clause 7.3 of this volume.

Technical Specification for Agro residue based Torrefied pellets (Table 1)

S No.	Technical Data	Unit	Specification for torrefied pellets
1.	Base Material	NA	Agro Residue/Crop Residue (wood-based pellets will not be acceptable)
2.	Dimensions Diameter	Mm	In case of cylindrical shape: Diameter: Not more than 25-30 mm Length: Random
3.	Fines% (Length< 3mm)	Weight%	Fines ≤ 5%
4.	Moisture (ARB*)	Weight%	Not more than 14% (≤ 14%)
5.	Gross Calorific Value (ARB)	Kcal/Kg	To be quoted by the bidder (not less than 3400 Kcal/Kg)
6.	Volatile Matter shall be below 22%	Weight%	Volatile matter below 22%

*ARB- As received basis

7.1.1 Acceptance range of key technical parameters (on as received basis) with price/ quantity adjustment

S No	Technical data	Unit	Acceptance range with pro rata price/quantity adjustment
1	Gross calorific value	kcal/kg	3400<GCV<=5000
2	Moisture	Weight%	Moisture<=14%
3	Ash	Weight%	Ash<20%
4	Fines% (Length <3 mm)	Weight%	Fines<=5%

7.2 Penalty / Adjustment

Computation for penalty / adjustment for the consignments (all the trucks) received in a Day shall be done as per the following

7.2.1 Price Adjustment for Gross Calorific Value (GCV):

Contractor is required to quote GCV (ARB) of torrefied pellets within the range as mentioned below:

Preferable limit shall be from 3400 Kcal/Kg & above to maximum limit of 5000 Kcal/Kg. Upward pro-rata price adjustment shall be done for GCV variation of supplies as per following formula:

Adjusted Price= [Quoted Price X Actual GCV(ARB)]/Quoted GCV(ARB)

Upward price adjustment shall be done maximum up to 5000 kcal/kg GCV (ARB), beyond this value, upward price adjustment shall not be done even if Contractor supplies torrefied pellets/briquettes of higher GCV.

For downward GCV variation from 3400 Kcal/kg, pro rata price adjustment shall done for GCV variation of supplied Material as per following formula:

a) For GCV less than 3400 Kcal/Kg & more than or equal to 3000

Kcal/Kg, Adjusted Price= 0.75 X (Quoted Price X Actual

GCV(ARB))/Quoted GCV(ARB))

b) For GCV less than or equal to 3000 Kcal/Kg & more than or equal to 2600 Kcal/Kg, Adjusted Price= 0.50 X (Quoted Price X Actual GCV(ARB))/Quoted GCV(ARB))

c) For GCV less than 2600 Kcal/Kg, the consignment shall be rejected and no payment shall be made for the already delivered and/or consumed Material.

In case, Contractor frequently supplies Material of GCV less than 2600 Kcal/Kg or deviates from the technical parameters, warning letter shall be issued to the Contractor or Contract may be cancelled, if Contractor continues to do so even after issuing warning letter.

Illustration I:

Quoted Price- Rs 5000/MT (FOR
Basis) Quoted GCV- 4000 Kcal/Kg
Actual GCV- 3300 Kcal/Kg

Adjusted Price- 0.75X [5000 X 3300]/4000 = Rs 3093.75/MT (FOR

Basis) Illustration II:

Quoted Price- Rs 5000/MT (FOR
Basis) Quoted GCV- 4000 Kcal/Kg
Actual GCV- 2900 Kcal/Kg

Adjusted Price- 0.50X [5000 X 2900]/4000 = Rs 1812.50/MT (FOR Basis)

7.2.2 Recovery on account of excess fine in consignment

Biomass dust, crushed/ broken/ damaged torrefied pellets of length less than 3 mm in consignment as received at TSPL site shall be treated as fines and there shall be recovery on account of excess fines (ARB) if it is beyond 5%.

The recovery on account of excess fines will be worked out as per the following formula. Recovery = (Adjusted price of Biomass pellets) X W X (Actual Weight % of fines beyond 5%)

“W” - Weight of consignment as received

However, there shall be no additional payment to vendor if fines are less than 5%.

Illustration:

Adjusted Price of Biomass Pallets: 5000 RS/MT

W = 100 MT

Fines % in Consignment: 6%

Allowable Fines %: 5%

% Fines beyond allowable limits: 6-5=1%

Recovery: $5000 \times 100 \times (100\% - 1\%) = 5000 \times 100 \times 99\% = 4,95,0001$

7.3 REJECTION LEVEL

7.3.1 The consignment of agro residue-based torrefied pellets received in day at TSPL plant shall initially be tested for following and shall be rejected in case any of the following parameters (as given in table 3) exceeds the rejection level given as follows: -

Table 3 Rejection Level

S No	Technical Data	Units	Rejection Level
	Total Moisture (ARB*)	Wt%	More than 14%

7.4 DELIVERY SCHEDULE

The Contractor shall commence delivery of material within 5 days from the issue of PO/LOA. Delivery Schedule shall be quantity allocated to the Contractor for supply on daily basis and the Contractor shall deliver that quantity of agro residue based Torrefied pellets regularly to TSPL. However, for any change in quantity of agro residue based Torrefied pellets to be delivered at TSPL, the changed delivery schedule shall be sent to Contractor three (3) day in advance by the official e-mail ID of engineer-in-charge or e-mail ID of any other person authorized by him in which quantity of agro residue based torrefied pellets to be delivered shall be mentioned which may even be zero and Contractor shall dispatch the consignment accordingly.

Although the supplier shall supply the pellets as per the above delivery schedule, however, the supplier shall have the flexibility to supply the material in higher quantity than the delivery schedule on mutual consent basis to meet the annual supply requirement. In such case, the supplier shall give one-week advance intimation to the Plant site and the site shall give the consent to supply material in higher quantity after assessing traffic congestion or other aspects as required.

Maximum variation in Biomass monthly offtake of Plants shall be within $\pm 15\%$ of the contracted quantity.

7.5 LIQUIDATED DAMAGE FOR DEVIATION FROM DELIVERY SCHEDULE.

The Supplier shall have to commence delivery of Material within 5 days from the date of issue of the Purchase Order. To facilitate initial capacity ramp up, no Liquidated Damage shall be levied for initial 10 days from the delivery start date (hereinafter referred to as 'NO LD Period').

Liquidated Damage (LD) shall not be applicable for short supply up to 15% in a month against aggregate of daily delivery schedule in that month, however, for monthly short supply beyond 15%, liquidated damage (LD) @ 5% of bid price of agro residue based torrefied pellet shall be recovered from Contractor only for shortfall quantity beyond 15% subject to the condition that aggregate of liquidated damage recovered from Contractor shall not exceed 5% of contract value.

8 QUALIFICATION REQUIREMENTS

To be eligible for Award of Contract, Bidders shall provide evidence, satisfactory to Owner/TSPL, of their eligibility and of their capability and adequacy of resources to carry out the subject contract effectively. Bids submitted shall include the following information:

- a. **EARNEST MONEY:** - The bidders are required to deposit the **Earnest Money of INR 5000 per MTPD per year of supply period** through RTGS/NEFT in bank account of Talwandi Sabo Power Limited, The validity of the earnest money shall be three months from the Tender opening date. In case of tenders of unsuccessful bidders, the earnest money shall be refunded within 7 days of the award of order/contract or after the expiry of validity period of the bids, whichever is earlier.

Beneficiary Details:

Beneficiary Name	Talwandi Sabo Power Limited
Account No.	35216862121
Centre (Location)	Mumbai
Bank	State Bank of India
Branch	CAG Branch, Mumbai
Account Type	Cash Credit
IFSC Code	SBIN0016376

Example: Quoted Quantity (MTPD) by bidder: 100 MT

Supply Period: 5 Years

EMD: $5000 \times 100 \times 5 = 25,00,000$

- b. For successful bidder the Earnest money deposit shall be converted in Security deposit.
- c. In case, a successful bidder refuses to honor the Contract awarded to him, his EMD shall be forfeited.
- d. The Bidder shall have credential of supplying similar Material along with proof of satisfactory execution of supplies, such as performance/ completion certificates etc. made by them to State electricity GENCO's/State Govt./ Govt of India undertaking plants/ IPP's. (Preferred but not mandatory)
- e. Bidder should have an annual turnover of not less than INR 10 Cr (Rupees Ten Crores) for the previous financial year. (Preferred but not mandatory).
- f. If after award of the Purchase Order/Contract it is found that the manufacturing plant from which supplies are being made, is not registered in the name of the Contractor/ one of the partner of Consortium, to whom Purchase Order/Contract is awarded then the Contract shall be terminated and security deposit of the bidder is liable to be forfeited and bidder is also liable to be debarred for subsequent tenders.

9 DOCUMENTS TO BE SUBMITTED FOR QUALIFICATION REQUIREMENT

9.1 Following Documents need to be submitted for qualification requirement:

- i. Complete company profile.
- ii. Details of similar work done during the past three years (POs of supplies of similar Material along with proof of satisfactory execution of supplies, such as performance/ completion certificates etc. made by them to State electricity GENCO's/State Govt./ Govt of India undertaking plants/ IPP's
- iii. Details of the current works in hand and other contractual commitments in the format prescribed in Schedule-2 on company letter head.
- iv. Audited Balance sheet and profit loss statement of last three years. Schedule 3 on company letter head.
- v. Deviation(s) taken by the Bidder in any of the clauses of this tender document, to be filled in the format prescribed in Schedule-4 on company letter head.
- vi. Bidder Responsiveness check list duly filled and signed by the Bidder, in the format prescribed in Schedule-5 on company letter head.
- vii. Declaration of site visit (TSPL) as per format prescribed in Schedule-6 on company letter head.
- viii. List of equipment's owned by bidder as per format prescribed in Schedule-7 on company letter head.

10 PRE-BID MEETING & SITE VISIT

10.1 The Bidders to mandatorily attend pre-bid meeting for understanding of TSPL expectation from vendors in terms of safety, health, environment, human rights, ethics, modern slavery act etc. Bidders advised to acquaint himself with the actual job, visit the Site and examine the transport and other facilities, environmental regulations, laws and bye-laws of statutory bodies, and collect all information that will be necessary for preparing the bid and entering into a contract. The costs of visiting the Site shall be at the Bidder's own expense. Bidder shall submit the declaration of site visit as per Schedule-6, thereby amounting to consonance to such indemnification, as mentioned above.

11 AMENDMENT OF BIDDING DOCUMENTS

At any time prior to the deadline for submission of Bids, the Owner may amend the Bid documents, at his sole discretion, by issuing Addenda. Addenda may also cover the queries raised and the responses given. Addenda shall be uploaded on our website <https://www.tsplindia.co/tender/> It shall be the responsibility of bidders to regularly visit the website for checking for amendments (if any).

NOTE: Bidder to visit TSPL website <https://www.tsplindia.co/tender/> at regular intervals to have online update about this tender.

12 BILLING AND PAYMENT TERMS

The Contractor shall submit the bills on Batch basis in triplicate for the Material received in a calendar month at TSPL Plant as per methodology as under:

- 12.1 The Contractor shall raise an invoice for the Batch i.e. total quantity received at TSPL in a calendar month.
- 12.2 The bills are to be submitted along with the following supporting documents (as

applicable), included but not limited to: -

- i. Copies of weighment certificate by TSPL.
- ii. Copy of quality reports of loading end.
- iii. Copy of TSPL receipt end quality reports.
- iv. Certified working for deriving payable quantity
- v. Original challan copies of truck engaged in transportation.
- vi. HGI Certificate from NABL accredited Lab.
- vii. Composition of biomass pellets

12.3 The eligible payments shall be released after adjusting various penalties/ recoveries/ other adjustments as per the following procedure:

(a) TSPL shall release the 75% payment against undisputed invoice through EFT (Electronic Fund Transfer) for the quantity received in a Batch as admissible, within seven (7) working days from the date of receipt of such invoices (complete in all respects as determined solely by TSPL) as per the detail mentioned in 12.2 at the TSPL's designated office(s) located at the TSPL Power Plant.

(b) The balance 25% Payment shall be kept as performance Guarantee which shall be released within 30 days of test results along with complete documents as mentioned in clause 12.2.

(c) However, it may happen that a vendor may supply material with lower GCV, and takes the 75% payment which may be more than the payment due against the adjusted amount as per GCV of the supplied material. To discourage such cases, contractors defaulting on quality of pellets, resulting in actual payment less than 15% of the invoiced amount, shall only be paid 50% of the invoiced value on receipt of the material, instead of the 75% for subsequent six months. The remaining 50% shall be paid on receipt and acceptance of test results. The facility may be restored based on satisfactory performance in previous six months.

12.4 In the case of the Contract closure, the differential amount shall be recovered from the contractor and other amounts due to the Contractor and/or payable by the Contractor at the time of closure of the Contract. Contract closure note shall be provided by the Contractor at the time of final settlement of the Contract.

12.5 Contractor s are advised to submit bills that are complete in all respects and well in time for timely release of payment.

12.6 Tax at source shall be deducted, as per the relevant rules of Income Tax Act, 1961, any amendments modifications and substitutions thereto, from all payments on account of supply provided by Contractor. NPL will issue valid certificates for the tax deducted at source as applicable.

12.7 In case the location of manufacturing Plant is not yet finalized, then bidder may declare the tentative location of manufacturing Plant. However, the Bidder shall declare the location of their manufacturing Plant within 90 days of placement of Award.

If a Contractor does not declare the Plant Location within 90 days of Placement of Award, then the Contract is liable to be terminated and security deposit of the bidder is liable to be forfeited and bidder is liable to be debarred for subsequent tenders. However, in the event of declaration of location of manufacturing plant after the placement of Award, the FOR destination price quoted by the bidder and incorporated in NOA/PO, shall remain same.

13 BID VALIDITY

The Bid shall remain valid and open for acceptance for a period of 90 days from the last date of bid submission or as communicated by TSPL from the specified date of Bid opening.

14 CONTRACT PERIOD

The Contract duration shall be for 12 Months from the date of issue of Purchase order/Letter of Award by the Owner. However, the same may be extended as per TSPL discretion.

In case of any clarifications required in Bid Document, please revert on (Tspl.eoi@vedanta.co.in) All clarifications shall be in mail or writings only.

15 SUBMISSION OF BIDS

15.1 The bid shall be submitted in ARIBA portal in two parts. Technical Bid and Commercial bids

15.2 Part I (Technical Bid) shall comprise the following:

15.2.1 Details of EMD money submitted in TSPL bank account

15.2.2 Original Bid Documents (all Volumes) including amendments, if any, duly signed with company seal by the Bidder on all pages.

15.2.3 Filled in all **Schedule 1 to 7** & Company profile signed with company seal with all required attachments.

15.3 Part II (Price Bid) of the Bid shall comprise of the following:

15.3.1 Filled in Annexure A Price Schedule signed with company seal.

16 REVERSE AUCTION

After opening of Price Bid, Reverse Auction shall be carried out. Following procedure and terms & conditions shall be applicable for which reverse auction is to be carried out:

- Selection of Bidders for reverse bidding:

All the Qualified Bidders, excluding H1 Bidder, subject to a minimum of 3 Bidders are left after excluding H1 Bidder.

In reverse Bidding, Bidder shall quote the price.

Reverse bidding start price: The lowest price Rs/MT/GCV discovered during close bidding shall be the opening price (start price for reverse bidding) . Projection of opening price on the screen shall initiate the reverse bidding process, which shall be conducted on ARIBA portal.

Bidders shall be required to submit their acceptance to the stipulated terms &

conditions before participating in the reverse auction.

Online reverse auction shall be conducted by TSPL in the presence of PSPCL team on pre-specified date and time for duration of 1 Hour.

Decrement value: Rs. 0.01 Rs/MT/GCV or higher (in multiples of Rs/MT/GCV).

Bidder may become 'L1 Bidder' by offering a price lower than the 'next valid Bid' and this shall continue as an iterative process.

During reverse bidding, if no Bid is received within the specified time, then the L1 Price Bid already discovered during the price bid opening shall be the closing price (CP) for the reverse bidding.

After Completion of online Reverse Auction, the Closing Price (CP) shall be considered as L1 rate for further processing including negotiations with the L1 bidder, if desired by TSPL.

All documents submitted as a part of bidding process will become property of TSPL and are not returnable.

Auction Extension Time:

If Valid bid is placed within 5 minutes of End Time of the Reverse Auction, then Reverse Auction duration shall get automatically extended for another 5 Minutes from the existing end time. It may be noted that the auto extensions will further take place if a valid bid comes in those last five minutes. If a bid does not get accepted as the lowest bid, the auto extension will not take place even if the bid might have come in last Five minutes. The above process shall continue till no valid bid is received in last 5 Minutes which shall mark the completion of reverse auction.

The bidders are advised not to wait till the last moment to enter their bid so as to avoid complications related to Internet connectivity, network problems, system crash down, power failure etc. No request for extension in time period of reverse auction due to any of the above reasons shall be entertained by TSPL and no claim of any bidder in this respect shall be accepted.

17 DEADLINE FOR SUBMISSION OF BIDS

The completed bid shall be submitted at the office of Owner, no later than date and time indicated in the bidding document/ its amendments.

The Owner may, in exceptional circumstances and at its sole discretion, extend the deadline for submission of Clarification/Bids by issuing an Addendum, in which case all rights and obligations of the Owner and the Bidders subject to the original dead line will thereafter be subject to the deadline as extended.

18 LATE BIDS

Any bid received by the Owner after the prescribed or extended deadline for submission

of bids will not be considered for opening & evaluation.

19 BID EVALUATION

- The Owner will examine the bids to determine whether they are complete, whether the documents have been properly signed, and whether bids are generally in order.
- Fax / E - mail offers will be treated as defective, invalid and rejected. Only detailed complete offers received prior to the closing time and date of the bids will be considered as valid. Bids not complying with any of the Instructions contained herein may not be considered.

20 PROCESS TO BE CONFIDENTIAL

- 20.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations concerning the award of Contract shall not be disclosed to bidders or other persons not officially concerned with such process.
- 20.2 Any effort by a bidder to influence the Owner in the process of examination, clarification, evaluation and comparison of bids or in decisions concerning the award of contract may result in the rejection of the bidder's bid and may also lead to "black listing" of the bidder and all existing successful bids in hand, if any, shall be deemed to be cancelled.

21 CLARIFICATION OF BIDS SUBMITTED BY BIDDER

To assist in the examination, evaluation and comparison of bids, the Owner may ask bidders individually for clarification of their bids, including breakdowns of prices. Requests for clarification and the response shall be in e-mail or on ARIBA portal.

22 CORRECTION OF ERRORS

- 22.1 Bids will be checked by the Owner for any arithmetical errors in computation and summation. Errors will be corrected by the Owner as follows:
- a. Where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and
 - b. Where there is a discrepancy between the unit price and the total amount derived from the multiplication of the unit price and the quantity, the unit price as quoted will normally govern unless in the opinion of the Owner there is an obviously gross misplacement of the decimal point in the unit price, in which event, the total amount as quoted will govern.
- 22.2 If a bidder does not accept the correction of errors as outlined above, his bid will be rejected.

23 AWARD CRITERIA

The Owner will award the contract to the bidder whose bid has been determined to be responsive to the bid Documents and who has offered the competitive price in reverse auction followed by negotiation, provided further that the bidder has the capability and resources to carry out the contract effectively.

24 OWNER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

The Owner reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Owner's action.

25 NOTIFICATION OF AWARD

25.1 Prior to the expiration of the period of bid validity prescribed by the Owner, the Owner will notify the successful bidder by e-mail and confirmed in writing that his bid has been accepted.

25.2 The notification of award will constitute the formation of the Contract.

26 SIGNING OF AGREEMENT

The agreement shall be executed within four weeks from the date of issue of Letter of Award.

27 CRITICAL DATES FOR BIDDING PROCESS:

S. No	Description	Date
1	Date of availability of bid document at TSPL website	29-Apr-2023
2	Last date for submitting tender related queries	04-May-2023
3	Response to bidder's queries	05-May-2023
4	Commencement of submission of bid (online - ARIBA)	06- May-2023 11:00 Hrs.
5	Last date for site visit and pre bid meeting	On or before 06 May 2023 17:00hrs
6	Last date for submission of EMD	17 May-2023
7	Last date & time for submission of bids (technical + commercial)	17-May-2023 17:00hrs
8	Bid opening Date (Technical)	18 May 2023 11:00 Hrs.
9	Bid opening Date (Commercial)	19 May 2023 11:00 Hrs.
10	Reverse Auction (time to be intimated to successful bidders)	19 May 2023

Timelines mentioned above are indicative and are subject to change at the discretion of TSPL. TSPL reserves the right to amend the above schedule or modify/cancel the bid process at its own discretion. The successful bidder shall not be entitled to any loss / claim / damage arising out of or related to the amendment / modification / change in the abovementioned schedule. All expenses in relation to Bidding to be borne by the Bidder.

All communication with owner for bidding process shall be done with below email: - tspl.eoi@vedanta.co.in

Note: Reference of tender document is National Biomass Mission guidelines and the standard model agreement issued by MOP dated 06.01.2023. MOP issued standard draft model agreement supersede the TSPL tender in case of any difference.

<< To be submitted on the letter head of the company submitting the bid>>

ANNEXURE A – PRICE SCHEDULE

Price bid to be submitted by bidders in the attached format

Type of agro residue based	Daily Qty Supply Offer (MT)*	Quoted Price - (Estimated FOR TSPL price offered for technical specifications of Material given in Table- 1 of tender) Exclusive of GST	GST	Price per MT (Inclusive of GST) on FOR destination basis	Quoted GCV (ARB)	Quoted Price (Inclusive of GST)
		Rs/MT	Rs/MT	Rs/MT	Kcal/Kg	Rs/MT/GCV
Torrefied						

Signature:.....

Name:.....

Designation:.....

<< To be submitted on the letter head of the company submitting the bid>>

**SCHEDULE-
1**

DETAILS OF SIMILAR WORK DONE DURING THE PAST THREE YEARS

1 Sl. No.	2 Full Postal Address of	3 Description of the Work	4 Value of Contract	5 Completion Time as stated in the Bid week	6 Date of Commencement of	7 Actual Completion Time (weeks)	8 Year of Completion

Bidder to submit Work order copy of the contract meeting up the eligibility criteria and also to submit the certificate received from the owner of the plant on successful completion of plant and its successful operations

Note:-

1. Bidders are specifically requested to furnish all the details about the last assignment done for the Client.
2. Completion date should be that mentioned in the Completion Certificate given by the Client.
3. Only a format in which the information is to be given is indicated above. The Contractor shall attach additional sheets of bigger sizes to accommodate the necessary information, if required.

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE-2

CONCURRENT WORKS AND COMMITMENTS

The Bidder(s) shall furnish in the format given below, details of the current works in hand and other contractual commitments:

Sl. No.	Client with Address	Description of the Work	Value of Contract Rs Cr	Completion Time as stated in the Contract	Percentage Completion	Remarks
1	2	3	4	5	6	7
I. Current Works in Hand						
II. Immediate Commitments						

Only a format in which the information is to be given is indicated above. The Bidder shall attach additional sheets of bigger sizes to accommodate the necessary information, if required.

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE-3

FINANCIAL TURNOVER

The Bidder shall furnish in the format given below details of its financial turnover during the last three years. (Rs Cr)

Year:	2022-23	2021-22	2020-21
Total:			

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE -4

SCHEDULE OF DEVIATIONS in bid

The bidder clause by clause in this schedule shall fill in all deviations from the above Instructions to Bidders.

<i>S.No</i>	<i>Clause No</i>	<i>Deviation taken</i>

The bidder hereby certifies that the above mentioned are the only deviations from the Owner's Instructions to Bidders.

SIGNATURE -----

COMPANY SEAL

NAME -----

--

COMPANY -----

DESIGNATION -----

DATE -----

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE -5

BIDDER RESPONSIVENESS CHECK LIST

Specific response to be given against each of the following questions by Bidder :

S.No	Particulars	State
1	Is the bidder a transporter having experience of agro residue based torrefied pellets?	YES / NO
2	If the answer to the item no. 1 is 'YES', whether the bidder is having tie up/agreement copy for contracts for supply of agro residue based torrefied pellets mentioned in the bidding document.	YES / NO
3	Whether the experience list of the Bidder has been attached in the format of Schedule-1?	YES / NO
4	If the answer to the item no. 3 is 'YES', whether he has attached the certificate received from the Owner for successful completion of work	YES / NO
5	If the answer to the item no. 3 is 'YES', whether he has attached the contact details of the Owner for checking credentials	YES / NO
6	Whether details of the current works in hand and other contractual commitments has been attached as in format of Schedule-2	YES / NO
7	Whether details of financial turnover furnished by Bidder in the format of schedule-3	YES / NO
8	If the answer to the item no. 7 is 'YES', whether he has attached the Profit and Loss Statements, Balance Sheets and Auditor's Reports for the past three years	YES / NO
9	Whether there is any deviation from the clauses of ITB?	YES / NO
10	If the answer to Item No. 9 is 'YES', whether BIDDER has entered the deviations in the Schedule of Deviations clause wise in the format given in Schedule-4	YES / NO

SIGNATURE -----
COMPANY SEAL
NAME -----
COMPANY -----
DESIGNATION -----
DATE -----

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE -6

DECLARATION OF SITE VISIT BY THE BIDDERS

We hereby declare that we have attended the pre bid meeting and understood all Vedanta safety performance standards, technical standards, Health, Safety, Environment & Sustainability policies & practices at TSPL. Also have visited the TSPL plant (inclusive of gate entry system) and have acquainted and satisfied thoroughly with the existing site Condition & processes.

Signature

Designation

.....

(COMPANY SEAL)

Company

.....

Date

<< To be submitted on the letter head of the company submitting the bid>>

SCHEDULE -7

List of Equipment owned by Bidder

The Bidder shall furnish in the format given below d List of Equipment owned by Bidder

<i>S.No</i>	<i>Description</i>	<i>Qty</i>

SIGNATURE -----

COMPANY SEAL

NAME -----

--

COMPANY -----

DESIGNATION -----

DATE -----

SCHEDULE- 8 STANDARD TERMS AND CONDITIONS

DEFINITIONS

In this Agreement, except where the context otherwise requires, capitalised words and expressions set out in the background section above shall have the meanings set out in that section and the following words and expressions shall have the following meanings:

1.1.1 “Affiliate” shall mean with respect to any person, any other person that, directly or indirectly, controls, is controlled by or is under common control of such specified person. For the purposes of this definition, “control” means the direct or indirect beneficial ownership of more than fifty percent (50%) of the issued share capital, stock or other participating interest or the legal power to direct or cause the direction of the general management, of the company, partnership or other person in question, and “controlled” shall be construed accordingly;

1.1.2 “Agreement” means this Agreement entered into by and between the Parties hereto together with any and all Annexures, appendices, schedules, addendums and amendments hereto as well any Purchase Order(s) issued thereunder, signed by the authorized representative of the Parties shall be deemed to be read as an integral part of this Agreement.

1.1.3 “Claims” shall mean all claims, liabilities, costs, damages and expenses (including court costs and legal fees)

“Deleterious material” shall mean any element, compound present in the goods which is not part of standard Specification or a typical assay as per the purchase order or agreement and which is likely to cause or may in general probability cause harm or damage to the operations of the Purchaser and also restricts or affects performance of the goods as per the desired / industry / specified standards. “Effective Date” shall mean Purchase order issuance date;

“Fees” shall mean the prices and/or rates payable by the Company in respect of the Material or Services and/or as specified in Annexure-II and/or the relevant Purchase Order.

“Material” shall mean the goods, equipment, or products (or parts thereof) to be purchased or to be supplied in accordance with this Agreement and/or as specified in the Purchase Order.

“Governmental Authority” shall mean any governmental department, local authority, commission, board, bureau, agency, regulatory authority, instrumentality, court or other judicial or administrative body, central, state, provincial or local having jurisdiction over the matter or matters in question.

“Personnel” shall mean any personnel provided by Supplier and utilized to perform the Services at the specified / agreed location.

“Purchase Order” shall mean (i) the written instruction by Purchaser issued to Supplier for the provision of Material or Services under this Agreement, which shall include the specific requirements with respect to the scope of work, applicable rates and charges and the location of the Site; and (ii) if applicable, the oral instruction under this Agreement which shall be reduced to writing as soon as practicably possible including the specific requirements described above.

“Purchaser Group” shall mean and include Purchaser and its Affiliates.

“Representative” in respect of the Purchaser and the Supplier to include the persons so identified on the Purchase Order as their representative or such other person(s) notified by the Purchaser or the Supplier in writing to the other from time to time, which will include amongst others consultants engaged by the Party or any Affiliate of the Supplier having commonality of interest with the Supplier.

“Services” means the tools, equipment, materials, supplies and Personnel to be provided by Supplier and the work to be carried out as specified in the Agreement and/or any Purchase Order. Provided however, that the same shall not include purchase / sale of Material.

“Site” shall mean the location where Purchaser wishes Supplier to supply the Material and/or provide the Services.

“Specification” includes but is not limited to assays whether typical or otherwise or the scope or technical parameters of the Material or Services attached to or referred to in this Agreement and/or any Purchase Order. Further Specification shall, in case of Material, always include being free from Deleterious material.

“Supplier Group” shall mean and include Supplier, its Affiliates and its and their sub-suppliers and suppliers of any tier and its and their respective Affiliates.

“Term” the term of this Agreement is defined in Clause 2 of this Agreement.

“Trade Usage” refers to generally accepted practice or norms in relation to expected standards, permissible deviation, internationally accepted scientific data, foreseeable consequences attributable to deviation beyond permissible deviation established over a period of time in course of commercial dealing between the parties to this Agreement or their associates.

INTERPRETATION

In this Agreement:

1.2.1 Headings are for convenience only and shall not govern or affect the interpretation of the Agreement;

Except where the context otherwise requires, references to one gender include all genders and the singular includes the plural and vice versa;

Except where the context otherwise requires, references to any enactment shall include references to such enactment as re-enacted, amended or extended and any sub-ordinate legislation made under it;

References to persons include companies, corporations, partnerships, associations, and other organizations whether or not having a separate legal personality;

Except where otherwise indicated, reference to clauses, sub-clauses, recitals and annexures shall be to the clauses, sub-clauses, recitals and Annexures of this Agreement;

"including" means "including without limitation";

The rule of construction, if any, that a contract should be interpreted against the Party responsible for the drafting and preparation thereof shall not apply;

If the day on which any act, matter or thing is to be done under or pursuant to this Agreement is not a business day as per Trade Usage, that act, matter or thing shall be done on the preceding business day.

2. SCOPE OF CONTRACT

2.1 The effective date of this Agreement shall be date of purchase order as mentioned on Page 1 (hereinafter the "Effective Date") and this Agreement shall be valid for a period (as mentioned in delivery terms or supply list of this purchase order) from the Effective Date / up to (as mentioned in delivery terms or supply list of this purchase order) ("Term").

2.2 The terms and conditions of the Agreement shall apply from the Effective Date and shall remain valid for the Term unless this Agreement is terminated earlier by the Company hereunder.

2.3 Nothing in this Agreement shall obligate the Purchaser or any of its Affiliates to order any Material or Services from the Supplier.

3. DELIVERY/PERFORMANCE

3.1 Time shall be of the essence and any Services performed or Materials delivered shall be in strict accordance with any time or schedule specified hereunder as per the Scope of Services at ANNEXURE-I. Further, Services performed or Materials so delivered shall be in strict accordance with the quality parameters and Specifications, specified in this Agreement and/or the Purchase Order or the relevant Trade Usage where no such parameters and Specifications are so specified.

3.2 PERFORMANCE BANK GUARANTEE:

3.2.1 The provisions of this sub-clause 3.2 shall be applicable only in those cases wherein the Supplier is required to furnish a performance bank guarantee as per the terms and conditions of this Agreement

The supplier shall furnish, within 15 days of execution of the agreement, and irrevocable performance bank guarantee equivalent to agreed 1% of total agreement value. The performance bank guarantee so furnished by the supplier shall be released upon successful completion of the obligations of the supplier in terms of the agreement after purchaser duly submits a certificate to the effect that there are no claims against the purchaser from any of its vendors, sub-contractors and/or any other third party, including but not limited to the supplier's employees, engaged in performance of the obligations of the supplier under the agreement. If requested by the Company, the Supplier agrees to extend the validity period of the Performance Bank Guarantee or to issue a further Performance Bank Guarantee in the event that the duration of this Agreement is for any reason extended beyond such validity date. The Supplier shall renew the Performance Bank Guarantee fifteen (15) days prior to the date the Performance Bank Guarantee expires ("Expiry Date") in case of any extension to the Term. If the Supplier does not submit to the Company a renewed Performance Bank Guarantee fifteen (15) days prior to the Expiry Date, the Company shall have the right to immediately draw down complete Performance Bank Guarantee amount and shall reserve the right to retain such amounts till such time the Supplier provides a replacement Performance Bank Guarantee for the equivalent amount.

The Supplier shall renew the Performance Bank Guarantee or otherwise submit an additional Performance Bank Guarantee, as duly required by the Company, on account of change in the Agreement Value pursuant to a variation or amendment to the Agreement, within fifteen (15) days of being so notified by the Company. If the Supplier does not submit to the Company a renewed Performance Bank Guarantee or an additional performance bank guarantee, as the case may be, within the said period of ten (10) days, the Company shall have the right to immediately draw down complete Performance Bank Guarantee amount and shall reserve the right to retain such amounts till such time the Supplier provides a replacement performance bank guarantee(/s) for the equivalent amount.

3.2.2 In addition to the right contained in the preceding clause, the Company shall further have an unqualified right under the Agreement to draw on the Performance Bank Guarantees under the following circumstances:

failure by the Supplier to supply the Materials in accordance with the Agreement resulting in termination; or

failure by the Supplier to duly perform any of its obligations under this Agreement; or

Any valid claim made by the Company accruing due to any acts/omission of the Supplier and the Supplier fails to pay the Company for such a claim immediately upon such demand.

3.2.3 The provision and maintenance of the Performance Bank Guarantee by the Supplier in accordance with the terms of the Agreement shall be a condition precedent to any payment by the Company to the Supplier.

3.2.4 If the Supplier fails to provide, maintain or renew the Performance Bank Guarantee in accordance with the terms of the Agreement, then the Company may, without prejudice to any other

rights and remedies to which it may be entitled to, invoke the Performance Bank Guarantee and/or terminate the Agreement forthwith by written notice.

3.2.5 In addition to the other circumstances specified in this Agreement, Company has the right to draw down and, at Company's discretion, apply the proceeds in remedying any breach by Supplier of this Contract, all or part of the value of the Performance Bank Guarantee. Such recourse against the Performance Bank Guarantee shall be without limitation to any other right or remedy of the Company in relation to the relevant Supplier breach.

5. CARRIAGE AND DELIVERY INSTRUCTIONS RELATING TO MATERIAL

5.1 Unless otherwise specified herein, the International Chambers of Commerce official rules for the interpretation of trade terms (Incoterms) are incorporated into the Agreement by reference.

5.2 The delivery instructions shall be governed by and construed in accordance with the provisions of Incoterms 2020 published by the International Chamber of Commerce as may be amended from time to time.

5.3 Unless otherwise stipulated in this Agreement and/or Purchase Order, all Material supplied under the Purchase Order shall be delivered Carriage and Insurance Paid (CIP) to the delivery address specified in this Agreement and/or Purchase Order. Material shall be adequately packed, palletised and protected to withstand transit and short term storage. Packages shall be clearly and conspicuously marked with the Purchase Order number, and a packing note shall be enclosed within the package. Dangerous Goods shall, at all times, be accompanied by the relevant material safety data sheet(s) ("MSDS").

6. TRANSPORTATION RELATING TO SERVICES

In the event Services are provided under this Agreement, the Supplier shall, unless otherwise stipulated in the Agreement and /or any Purchase Order, be responsible for all transportation of the Personnel, equipment and materials from and to Supplier's base, or other location, to and from any Site designated in the Agreement and/ or Purchase Order. Purchaser reserves the right to recover the costs of non-routine transportation due to default of Supplier.

7. RISK AND PROPERTY

7.1 Unless otherwise stipulated in this Agreement and/or any Purchase Order issued hereunder, title to and risk of loss for the Material shall remain with Supplier and shall only pass to Purchaser following full delivery and acknowledgement by possession of the Material to the delivery address by Purchaser or Purchaser duly authorized representative specified in the Purchase Order.

7.2 Where the Purchaser is the ultimate consumer of the Material being sold under this Agreement and/or the relevant Purchase Order/(s), the title of the same shall pass on to the Purchaser only after the material is delivered at the premises of the Company and the Purchaser accepts the same

7.3 Whenever Purchaser is not the ultimate consumer of the Material, all rights, benefits and remedies conferred upon Purchaser by the provisions of this Agreement, including specifically the benefit of any warranties and transfer of title, shall accrue to and shall be for the express benefit of any third party customer and on whose behalf or for whose benefit the Purchaser has purchased the Material.

8. PERFORMANCE OF THE SERVICES

8.1 The Supplier shall diligently perform all Services with all due skill and care in a safe, competent and timely manner and in accordance with the requirements of this Agreement and/or relevant Purchase Order.

8.2 Except to the extent that it may be legally or physically impossible, the Supplier shall comply with all instructions from Purchaser or its designated personnel consistent with the provisions of this Agreement and /or the Purchase Order.

8.3 Purchaser shall have the option to select or decline any Personnel being used by the Supplier in connection with the supply of Materials or provision of Services, which shall not be unreasonably exercised, and the Supplier shall forthwith replace such Personnel at the Supplier's cost and shall:

Only provide Personnel who shall be trained, skilled, experienced, qualified and of type and number for the Services that they will be required to perform;

Ensure that all Personnel shall have been examined by a registered physician in accordance with current recommended medical standards and be certified as fully fit and suitable to work in the specified Site environment prior to commencing work. The cost thereof shall be to the account of the Supplier. Such certificates shall be made available to Purchaser;

Supplier shall not reassign any key Personnel during the course of performing the Services without first securing Purchaser's written consent. Purchaser in its sole discretion may direct Supplier in writing to remove and/or replace any such Personnel at Supplier's cost; and

ensure that all Personnel are subject to and agree to be bound by Purchaser's policies regarding safety, security, and drug and alcohol testing, and in particular the Vedanta Corporate Policy Directive ("Possession of Contraband Items") attached hereto as EXHIBIT A and related policies at any time when such Personnel are present at the Site, provided said Corporate Policy Directive and/or its related policies are not in violation of applicable statutes, laws, rules or regulations.

8.4 Unless otherwise specified in the Purchase Order, the Supplier shall, at its own expense, sufficiently furnish all tools, equipment, machines, appliances, parts, material and supplies necessary for the efficient and continuous performance of its obligations. Throughout the Term the Supplier covenants that equipment supplied by it will be fully certified, will meet all relevant government standards, will have been tested and will be in full working order without any damage or defect.

8.5 The Supplier shall, at its own expense, furnish to its Personnel all personal protective equipment ("PPE") including, but not limited to, gloves, hard hats, safety glasses, steel toed boots and task specific safety gear (e.g., fall protection, respiratory protection, radios, tripods, etc.), etc., necessary for the performance of its obligations at the Site. All Supplier equipment to be used at heights shall be tethered, no-drop tools specifically engineered and manufactured for the purpose of working at heights. Supplier shall maintain all PPE and no-drop tools in first class condition, properly

maintained, of best quality for their respective purpose, free from defects and in certification throughout the duration of the Purchase Order. Purchaser shall have the option to suspend work at no additional cost to Purchaser and/or to remove any or all Personnel from the Site should such Personnel fail to comply with these requirements and Supplier shall forthwith replace such Personnel at Supplier's sole cost and expense.

8.6 Purchaser shall have no direction or control of such parties, except for monitoring the results to be obtained and in Purchaser's general right of inspection to require that the Material are being supplied or Services are being performed in accordance with this Agreement or any applicable Purchase Order.

9. PAYMENT

9.1 Unless otherwise stated, payment will be made within forty-five (45) days of receipt of Supplier's fully compliant invoice, in the currency specified in ANNEXURE-II. The fully compliant invoice shall be raised by the supplier on the purchaser only after supply, receipt & acceptance of the material/services by the purchaser. Each invoice shall make specific reference to the Agreement and/or relevant Purchase Order number and shall be accompanied by all relevant supporting documents. Supplier must ensure that all invoices for Services performed or Material delivered are submitted to the Company within ninety (90) days of the completion i.e. supply, receipt & acceptance of the material/services by the purchaser.

9.2 If Purchaser disputes all or any part of any invoice, it shall notify Supplier specifying the disputed parts thereof. Supplier shall withdraw the disputed invoice and submit an amended invoice for the undisputed amount and Purchaser shall pay this amount within forty-five (45) days of the date of receipt of the amended invoice. Purchaser and Supplier shall endeavour to settle the disputed amount as quickly as possible through good faith negotiations. The Parties agree that no interest shall accrue on any invoice until the settlement of the disputed amounts.

9.3 The Purchaser shall have a right (but not an obligation) to set-off / adjust any payment due from the Supplier against any amount due / payable to the Supplier from the Purchasing Group.

10. ACCESS

10.1 Purchaser shall have the right of access to Supplier's premises to inspect the progress of manufacture, testing and commissioning of the Material and / or the performance of Services and/or to otherwise satisfy itself as to compliance of the Material and/or Services with the Agreement. Supplier shall procure similar rights of access for Purchaser at the premises of any sub-supplier. Inspection of the progress of manufacture, testing and commissioning of the Material and the performance of the Services by Purchaser shall in no way relieve Supplier of its liabilities and obligations under the Agreement or otherwise. Failure by the Company to inspect and/or test the Materials shall not relieve the Supplier of any responsibility or liability in respect of the Materials.

10.2 If the results of any inspection or testing indicate that the Materials do not conform, or are unlikely to conform, to the Agreement, the Supplier shall immediately take such action as is necessary to ensure conformity at no additional cost to the Company.

10.3 The Company shall inspect the Materials as soon as reasonably practicable after the Materials have been delivered to the Company in accordance with this Agreement. If the Materials do not meet the requirements of the Agreement, the Company shall be entitled to reject the Materials and shall notify the Supplier of its rejection. In such event, the risk in, and title to, the rejected Materials shall immediately re-vest in the Supplier and the Company shall have no further liability in respect of such rejected Materials.

11. SUSPENSION

Suspension without Cause

11.1.1 Notwithstanding anything contained herein to the contrary, the Company shall have the right, without cause, at any time to require the Contractor to suspend the Work/Supplies (or part thereof) under this Contract by giving a prior written notice to the Contractor.

11.1.2 During the Suspension Period pursuant to Clause 11.1.1, the Company/Purchaser shall not be liable to make any payments of whatsoever nature during the period of suspension.

11.2 Suspension Due to Default

11.2.1 If the Contractor is in breach of any of its obligations under this Contract (including, without limitation, any breach of provisions/policies relating to health safety and environment), the Company shall, subject to Clause 11.2.2, be entitled to immediately suspend the Work by written notice to the Contractor until such time as such breach has been remedied by the Contractor, in which case no rates or other amounts shall be payable to the Contractor in respect of such period of suspension.

11.2.2 Except in the case of a breach which in the reasonable opinion of the Company is likely to endanger the safety of any persons or property, the Company shall, prior to issuing any suspension notice pursuant to Clause 11.2.1, notify the Contractor of the breach. Following receipt of such notice, if the Contractor fails to immediately commence and thereafter continuously proceed to remedy such breach to the Company's reasonable satisfaction, the Company may issue the suspension notice pursuant to Clause 11.2.1

12. SUPPLIER OBLIGATIONS

12.1 The Supplier represents, warrants & guarantee that the Material and/or Services shall:

(a) conform to the Specifications which the Supplier warrants to be accurate and complete in all material respects and not misleading;

(b) comply with any applicable quality standards and/or other standards or Specifications as requested by the Purchaser and these standards/Specifications shall not be changed without the prior written consent of the Purchaser;

(c) in the case of Material, be of the best available design, of the best quality and workmanship and shall be free from fault or defect (including latent defect), with such tolerances as specifically stated in the Specification or on the drawings;

(d) in the case of Material, be complete and fully operational and shall be delivered with all parts (and also those parts that are not specified but which are required for proper operation and also including the usual safety devices, special tools etc. as per Trade Usage);

(e) in the case of Material, when delivered, be accompanied by a delivery note which shows, inter alia, the Agreement/Purchase Order number, date of ordering, number of packages and contents and, in the case of part delivery, the outstanding balance remaining to be delivered, be clearly marked as such;

(f) be accompanied by all appropriate information, warnings, instructions and documentation in relation to the safe use, handling, storing, operation, consuming, transportation and disposal of any Material or parts, to the Purchaser; and

(g) in the case of the Services, be performed with all due and reasonable care and skill, in accordance with generally recognized best industry practices and standards for similar services;

12.2 The Supplier further represents, warrants & guarantee that the Material and/or Services shall conform with all laws applicable to:

(a) such Material, including as regards the design, manufacture, quality, packaging, transportation, delivery, labelling, health, safety and environmental standards and use of such Material which are in force at the time of supply; and/or

(b) such Services including but not limited to those in relation to health, safety and environmental standards.

12.3 The Supplier represents, warrants & guarantees that it shall at all times and at its own expense:

(a) maintain all necessary licenses and consents and comply with all applicable law in performance of the Agreement;

(b) adopt safe working practices and at the proper time supply and install such guards and safety devices as may be necessary to comply with the provisions of all health and safety laws;

(c) shall not endanger the safety of or unlawfully interfere with the convenience of any other person, including employees and/or other contractors of the Purchaser in the performance of the Agreement;

(d) ensure that, in performing its obligations under the Agreement, it does not cause any disturbance or damage to the industrial operations and property at the relevant site;

(e) comply with the Purchaser's conditions (including but not limited to health and safety conditions, safety management systems, safety cases, hygiene policies and security policies) in relation to any relevant Site;

(f) assist the Purchaser and its representative in the investigation of any accident or incident or the resolution of any dispute, which assistance shall include, but not be limited to, providing access to documents and records and providing information reasonably requested by the Purchaser;

(g) notify the Purchaser's representative promptly as soon as it becomes aware of any breach of laws or any health and safety or issue which arises in relation to the Material or Services (which notification shall not release the Supplier from any liability and/or obligations in respect of such breach, hazard or issue);

(h) notify the Purchaser's representative promptly after it becomes aware that the Purchaser is not or may not be complying with any of the Purchaser's obligations, provided that the Supplier shall not be entitled to rely on such notice as relieving the Supplier's performance under the Agreement, save to the extent that it actually restricts or precludes performance of the Supplier's obligations.

(h) co-operate with the Purchaser in all matters relating to the Services;

12.4 The representations, warranties & guarantees mentioned herein shall survive any inspection, test, performance, acceptance or payment pursuant to the Agreement and shall be extended to any repaired or replaced Material or substituted or remedial Services provided by the Supplier.

12.5 Without prejudice to any other rights which Purchaser may have hereunder, Supplier shall, at Purchaser's option and Supplier's cost, either repair or replace any and all Material which fail or are found to be defective within a period of eighteen (18) months from the date of delivery or twelve (12) months from the date of commencement of use, whichever is the later. If Supplier is required to repair or replace defective Material, the warranty period shall be renewed for the repaired or replaced Material.

12.6 If the Supplier fails to rectify such breach in supply of the Material or Services, which being capable of remedy is not remedied within fourteen (14) days of notice of such default, the Purchaser may at its discretion and without prejudice to other rights and remedies under this Agreement or otherwise, avail itself of any one or more of the remedies as hereunder:

reject the Material (in whole or in part) and return it to the Supplier at the risk and cost of the Supplier on the basis that the Supplier shall immediately pay to the Purchaser a full refund for the Material so returned;

give the Supplier the opportunity at the Supplier's expense either to remedy any defect in the Material or Services or to supply replacement Material or substitute Services and carry out any other necessary work to ensure that the terms of the Agreement are fulfilled within a reasonable period specified by the Purchaser;

refuse to accept any further deliveries of the Material or subsequent performance of the Services which the Supplier attempts to make, in each case without any liability to the Purchaser;

carry out or procure that some other person carries out at the Supplier's expense any work necessary to make the Material and/or Services comply with this Agreement (including but not limited to freight, disassembly and reassembly);

(e) instruct the Supplier to suspend performance of its obligations under this Agreement with immediate effect and to take such steps as the Purchaser may direct in order to remedy such breach at the Supplier's expense;

claim such damages as may have been sustained in consequence of the Supplier's breach or breaches of this Agreement;

(g) opt to use or consume the Material in the event of non-availability of substitute goods or to maintain operations of the Purchaser's plant or to avoid plant shut down but without prejudice to its right to claim damages attributable to consequences arising due to off-Specification Material;

(h) obtain substitute Material or purchase substitute Services from alternate supplier at Supplier's cost.

12.7 If the Purchaser exercises its rights under clause 11.6 sub-clause (b), (d) and/or (e) above in respect of Material which do not, in the Purchaser's opinion, meet the requirements specified in the Agreement, the Supplier shall grant necessary right to the Purchaser to utilize the relevant Material until such time as they meet those requirements.

12.8 If the Supplier fails to deliver the Material under this Agreement as per the agreed delivery schedule, the Purchaser may at its discretion and without prejudice to other rights and remedies under this Agreement or otherwise, avail itself of any one or more of the remedies hereunder:

refuse to accept any further deliveries of the Material which the Supplier attempts to make, in each case without any liability to the Purchaser;

procure that some other person supplies, at the Supplier's expense, the Material to comply with this Agreement (including but not limited to freight, disassembly and reassembly, as the case may

be);

instruct the Supplier to suspend performance of its obligations under this Agreement with immediate effect and to take such steps as the Purchaser may direct in order to remedy such breach at the Supplier's expense;
claim such damages as may have been sustained in consequence of the Supplier's breach or breaches of this Agreement;

12.9 Notwithstanding anything to the contrary in this Agreement, there shall be no obligation whatsoever on the Purchaser to accept any defective or sub-standard quality Material and/or Service, delayed delivery and/or performance of the Agreement and it is expressly agreed by the Parties that acceptance of such defective or sub-standard quality Material / Service, delayed delivery and/or performance by the Purchaser in its sole discretion, shall not prejudice any right / claim of the Purchaser to damages for supply of such defective or sub-standard quality Material / Service, delayed delivery and/or performance and / or for breach of the Agreement. In the foregoing, the Purchaser shall reasonably determine the amount of damages that shall be leviable upon / payable by the Supplier. Any damages so determined by the Purchaser shall be paid by the Supplier within fifteen (15) days. The levy of damages / acceptance of performance, as above, shall not prejudice any rights of the Purchaser as per other terms of this Agreement / Purchase order.

12.10 In the event of a breach by the Supplier of its obligations under this Agreement, the Purchaser shall have the right to terminate the Agreement and / or the Purchase Order issued thereunder in whole or in part or to rescind the Purchase Order, in each case without any liability to the Purchaser.

12.11 The Purchaser reserves the right to reject Material in case it is supplied prior to the scheduled delivery date until otherwise specifically waived-off in writing by an authorized Representative from the Purchaser's commercial department, prior to dispatch.

13. SPECIFICATION VARIATION

13.1.1 No adjustment to the Scope of Work the Specification, the prices and/or rates set out in Compensation Schedule or the Delivery Date (or any other date specified in the Agreement for performance by the Supplier) shall be valid unless a variation order has been issued in writing by the Company (a "Variation Order"). No additional work or services shall be commenced by the Supplier prior to the Company issuing a Variation Order in respect of such work or services.

13.1.2 A Variation Order shall in no way affect the rights or obligations or the Parties except as expressly provided in that Variation Order. Any Variation Order shall be governed by the provisions of the Agreement.

13.2 Company's Rights

13.2.1 The Company may at any time issue a Variation Order to the Supplier requiring the Supplier to alter, amend, omit, add to, accelerate, re-programme or otherwise vary any part of the Scope of Work or Purchase Order and/or the Specification. Upon receipt of a Variation Order the Supplier shall proceed immediately as instructed, and any necessary adjustment to prices and/or rates or dates for performance shall be subsequently made in accordance with Clause 13.2.3 below.

13.2.2 The Company shall as far as reasonably practicable before issuing a Variation Order advise the Supplier of the proposed variation and request the Supplier to provide an estimate of the effect (if any) on the prices and/or rates and/or dates for performance such variation would have. Such estimates shall be provided by the Supplier within 3 days of a request by the Company and

if agreed to by the Company shall be recorded in a Variation Order.

13.2.3 Where the Company has issued a Variation Order in accordance with Clause 13.2.1, the Parties shall use all reasonable endeavours to agree on fair and reasonable adjustments to the prices and/or rates and/or dates for performance, which shall, to the extent possible, be based on the existing prices and/or rates and/or dates for performance specified in the Agreement. Such adjustments shall be recorded in a further Variation Order.

13.2.4 Notwithstanding anything contained in this Clause 13, if the parties fail to mutually arrive at the terms of the Variation Order, then the decision of the Purchaser shall be final and binding and the Supplier shall be required to carry out its obligations under the Contract, including the execution of variation in works, as proposed by the Purchaser.

14. INTELLECTUAL PROPERTY

14.1 If any Material purchased or supplied or Services performed or provided under the Agreement and/or Purchase Order involves a patent, copyright, trademark, or proprietary information (IPR) Intellectual Property Right, Supplier hereby grants Purchasing Group a permanent, irrevocable, worldwide, non-exclusive license to use the same without additional charge.

14.2 Purchaser is the sole owner of IPR in anything developed and delivered under this Agreement / Purchase Order. Supplier shall provide at Purchaser's reasonable request any documentation necessary to confirm Purchaser's ownership interest in such intellectual property rights. Supplier shall retain ownership of any intellectual property rights vested in Supplier prior to this Agreement or created by Supplier outside of its performance of this Agreement during the term of this Agreement.

14.3 Supplier shall at all times be responsible for, shall release and shall defend, protect, indemnify, hold harmless and defend Purchasing Group, from and against any Claim by a third party for infringement of any IPR which may arise out of the sale and/or use of the Material supplied or the Services performed and/or provided by Supplier.

14.4 In the event that any such infringement occurs or may occur in relation to the Materials, the Supplier, at the option of the Company and the cost of the Supplier, shall :-

use reasonable endeavors to procure for the Company the right to continue using the relevant aspect of the Materials or infringing part thereof; or

modify or amend the relevant aspect of the Materials or infringing part thereof so that the same becomes non-infringing; or

replace the relevant aspect of the Materials or infringing part thereof with other goods of similar type; or

repay to the Company the price paid in respect of the relevant aspect of the Materials relating to the whole or the infringing part thereof.

14.5 For the purposes of this clause Intellectual Property Rights includes but is not limited to all vested, contingent and future intellectual property rights including: (i) all inventions, compounds, compositions, substances, methods, processes, techniques, know-how, technology, data, information, discoveries, and materials including ideas, concepts, formulas, assays, practices, software, devices, procedures, designs, constructs, plans, applications, research,

regulatory

information, manufacturing process, scale-up and other technical data, reports, documentation and samples, including chemical, physical, analytical, safety, manufacturing and quality control data and information, as well as study designs and protocols; and any Patents, trade secrets, confidential information, proprietary processes, or industrial rights directly or indirectly deriving therefrom; (ii) all trademarks, service marks, copyrights, designs, trade styles, logos, trade dress, and corporate names, including all goodwill associated therewith; and (iii) any work of authorship, regardless of copyrightability, all compilations and all copyrights and includes also includes any inventions, made, to be made, discovered, conceived or reduced to practice whether or not patentable.

15. AUDIT AND INVESTIGATION

15.1 At all reasonable times during the Term and/or any Purchase Order, and for a period of four (4) years after the completion of any Purchase Order, Supplier agrees that the Supplier Group's books and records shall be subject to audit with Supplier's assistance and at reasonable times as Purchasing Group shall consider necessary. Purchaser's auditors shall have full and unrestricted access to all records for the purposes of auditing and verifying that the charges or costs presented by Supplier to Purchaser for payment are in accordance with the Agreement / Purchase Order, or for any other reasonable purpose, including verifying Supplier's compliance with its obligations under the Agreement / Purchase Order. In addition, if Purchaser has a reasonable basis to believe that Supplier Group has taken or failed to take any action that may subject Purchasing Group to liability under any laws including the anti-corruption laws, Supplier agrees that Purchaser shall have the right (but not the obligation) upon written notice to Supplier, to conduct an investigation of Supplier Group to determine to Purchaser's reasonable satisfaction whether any actions or failures to act on behalf of Supplier Group may subject Purchaser to such liability.

16. ASSIGNMENT AND SUBCONTRACTING

16.1 Supplier shall not assign, sublet or subcontract its rights or obligations under this agreement and/or any Purchase Order, in whole or in part, to any third party without the prior written consent of Purchaser, which the Purchaser may at its sole discretion accept or refuse. Supplier shall have a written contract in place for each approved sub-supplier prior to such sub-supplier performing any Services or supplying any Material. Supplier shall assume full responsibility for the acts or omissions of Supplier's sub-suppliers of any tier. All of Supplier's subcontracts, if any, for performance of the Services or the supply of Material shall contain terms and conditions substantially similar to those contained in this Agreement and/or the applicable Purchase Order which protect and do not restrict Purchaser's rights as set forth in this Agreement and/or in the applicable Purchase Order.

16.2 Purchaser shall have the right to assign the Agreement / Purchase Order to its Affiliate or any third party customer. This Agreement shall inure to and be binding upon the respective successors and assignees of the Parties.

17. RECOURSE OF THE PARTIES

17.1 Supplier shall look only to Purchaser for the due performance of the Purchase Order and nothing therein contained shall impose any liability upon, or entitle Supplier to commence any proceedings against any third party customer or any person not a party to the Agreement or the Purchase Order.

17.2 Purchaser shall be entitled to enforce any Purchase Order on behalf of any third party customer in connection with the Agreement / Purchase Order as well as for itself and for this purpose, only Purchaser may commence proceedings against Supplier. The obligations and liabilities of Purchasing Group issuing Purchase Orders are several and not joint.

17.3 It is clarified that under no circumstances, by virtue of this Agreement, will the employee/workers of the Supplier be deemed to have any privity of contract with the Company nor would they or any of their heirs, assigns or successors would claim any benefit / privilege, whatsoever, from the Company.

18 PREVAILING EFFECT OF THIS AGREEMENT AND RELEVANT PURCHASE ORDER(S)

18.1 This Agreement shall comprise of the following

documents: This Agreement

Annexure I: Scope of work

Annexure II: Compensation

Schedule

Annexure III: Standard Terms and Conditions

Annexure IV: Code of Conduct

Exhibit A: Corporate Policy Directive Possession of Contraband

Items Exhibit B: Insurance

(all hereinafter the "Agreement").

18.2 This Agreement shall be governed solely as per the terms of this Agreement, to the entire exclusion of any terms/conditions that the Supplier may state/ mention in any quotation and/or any other correspondence made by the Supplier. Consequently, the terms of this Agreement shall apply and shall be incorporated by reference / deemed incorporated in any Purchase Order issued hereunder and shall prevail at all times between the Parties over any other terms and conditions (including any terms or conditions which Supplier purports to apply to any purchase order, confirmation of order, Specification, invoice or other document) with respect to the provision of Materials or Services, except where the Parties, by its authorized signatories, have specifically agreed in writing to vary and override the terms of this Agreement or the Standard Terms and Conditions by Special Terms.

ANNEXURE II COMPENSATION SCHEDULE

1. COMPLETENESS OF PRICING

All rates, sums, charges and prices referred to in this Schedule:

are stated in (INR) /USD.

are considered complete and fully inclusive in respect of the services being provided and no additional rates, sums, charges or prices shall be paid, except as expressly stated in the Agreement; shall remain fixed and firm and shall not be subject to amendment for any cause, except as expressly stated in the Agreement.

The cost of any item where the price is left blank shall be deemed included elsewhere.

2. Taxes

The prices and rates set out in this Annexure are:

ANNEXURE III
STANDARD TERMS & CONDITIONS

1. TAXES AND DUTIES

1.1. Definitions

For the purposes of this Clause 1 (Taxation):

- (a) "Tax" or "Taxes" means taxes, levies, duties, fees, charges and contributions as amended from time to time and any interest or penalties thereon;
- (b) "Government Authority" or "Government Authorities" means any local or national government or authority of any country, competent to levy any Tax;
- (c) "Goods & Services Tax" or "GST" shall include Central Goods & Service Tax ("CGST"), State Goods & Service Tax ("SGST"), Integrated Goods & Service Tax ("IGST"), Union Territory Goods & Service Tax ("UTGST") & GST Compensation Cess.

Person Responsible for payment of Taxes

1.1.1. General

Except as may be expressly set out in this Contract, the Supplier shall be responsible for:

- (a) the payment of all Taxes now or hereafter levied or imposed on the Supplier or its subcontractors or on the personnel of the Supplier or its subcontractors by any Government Authority in respect of any wages, salaries and other remuneration paid directly or indirectly to persons engaged or employed by the Supplier or its subcontractors (hereinafter referred to as "Personal Income tax");
- (b) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the actual/assumed profits and gains made by the Supplier or its subcontractors (hereinafter referred to as "Corporate Income tax");
- (c) the payment of all GST now or hereafter levied or imposed by any Government Authority on the supply of goods or services, if any, provided to the Company by the Supplier or its subcontractors;
- (d) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the mentioned goods only, namely, petroleum crude, HSD, Petrol, Natural Gas & ATF, if any, sold to the Company by the Supplier or its subcontractors (hereinafter referred to as "Sales tax/VAT/CST");
- (e) the payment of all Taxes now or hereafter levied or imposed by any Government Authority on the mentioned goods only, namely, petroleum crude, HSD, Petrol, Natural Gas & ATF, if any, manufactured by the Supplier or its subcontractors for sale to the Company (hereinafter referred to as "Excise Duty");and
- (f) the payment of any other Taxes now or hereafter levied or imposed by any Government Authority on the Supplier or its subcontractors as a result of the performance of this Agreement.

1.2.2. Exception to General:

Prior to commencing the Services, the Supplier shall notify the Company whether or not it has Fixed Establishment in India. If the Supplier notifies the Company that it does not have Fixed Establishment in India, then, any Indian GST chargeable on the services provided by the Supplier under this Agreement shall be paid by the Company directly to the relevant Government Authority.

1.2.3 Reimbursement of Taxes to the Supplier

It is acknowledged that responsibility for payment of Taxes to the Government Authority will be governed as per Clause 1.2.1 and 1.2.2, the Supplier will be reimbursed only for such Taxes which will be agreed to be reimbursed in the Compensation Schedule or any of the Purchase Order(s) issued under the Agreement.

1.2.3.1. Pricing

The Parties agree that details of Taxes included in, or excluded from, the Supplier's prices and/or rates shall be as stated in the Compensation Schedule to the Agreement and nothing in this Clause

1 shall be construed to affect or prejudice such details as stated in the Compensation Schedule.
1.3. Withholding taxes and Withholding certificates

1.3.1. The Company shall, at the time of its payments due to the Supplier, withhold the necessary taxes at such rate as is required by any Government Authority, unless and to the extent that the Supplier shall produce to the Company any certificate issued by a Government Authority (having authority to issue such certificate) entitling the Supplier to receive the payments under the Agreement for a prescribed period without deduction of any tax or deduction at a lower rate.

1.3.2. The Company shall provide the necessary withholding tax certificates to the Supplier within the time stipulated by the relevant law to enable the Supplier to file the same with the Government Authority as a proof of payment of such taxes.

1.4. Person Responsible for filing of returns / information to Government Authorities

1.4.1. The Supplier shall be responsible for filing all necessary Tax returns (including, without limitation, returns for Corporate Income tax, Personal Income tax, GST, Sales tax and Excise Duty) with the relevant Government Authorities in accordance with all applicable statutory requirements and shall be responsible for providing all information requested by such Government Authorities.

1.4.2. The Supplier shall also ensure that its subcontractors file such returns as stipulated by the relevant Government Authorities and furnish such information as requested for by the relevant Government Authorities.

1.4.3. The Company, with respect to the tax withheld from the Supplier in accordance with Clause 1.3 (Withholding Tax and Withholding Tax Certificates), shall be responsible for filing the withholding tax returns with the relevant Government Authorities in accordance with applicable statutory requirements.

1.5. Company's rights, if treated as representative assessee by Government Authorities

In certain situations, a Government Authority may treat the Company as the representative assessee of the Supplier and/or its subcontractors and recover the Taxes due to the Government Authority by the Supplier or its subcontractors from the Company. In such situations, the Company shall have the following rights:

(a) The Company shall be entitled to recover from the Supplier, the Taxes paid on behalf of the Supplier or its subcontractors (together with any costs and expenses incurred by the Company in connection therewith) or to retain the same out of any amounts to be paid to the Supplier or its subcontractors that may be in its possession (whether due under this Agreement or otherwise) and shall pay only the balance, if any, to the Supplier; and

(b) If the Company is required to furnish any details or documents in such capacity, the Company shall request the details or documents to be furnished to it by the Supplier and the Supplier shall immediately furnish the same to the Company. If the Supplier fails to comply with the foregoing, any penalty/interest levied on the Company for non-filing or late filing of details or documents in this regard shall be recoverable from the Supplier.

1.6. Indemnity

The Supplier shall defend, indemnify and hold the Company Group harmless from and against any and all claims, liabilities, costs, damages and expenses (including court costs and legal fees) in connection with any Taxes which may be levied or imposed on the Supplier or its subcontractors by any Government Authority arising out of or in connection with the performance of this Agreement.

1.7. Changes in Law

If, after the date of execution of this Agreement, there is any change in law, excluding any change(s) as result of interpretation by competent authority, tribunal & Court, which results in a change in the rate of any Tax included in the Supplier's prices or rates or the introduction of a new Tax and such change results in an increase or decrease in the cost to the Supplier of performing this Agreement then the Parties shall agree to a revision in pricing to reflect such change provided that:

(a) the Party requesting such revision shall promptly (and in any case prior to submission of the Supplier's final invoice under this Agreement) but not later than 7 business days notify the other Party that such change in law has arisen; and

(b) the Party requesting such revision shall provide the other Party with documentary proof of

such change in cost to the reasonable satisfaction of the other Party; and

(c) the provisions of this Clause 1.7 shall not apply to changes in Personal Income tax or Corporate Income tax or to changes in non-Indian Taxes.

1.8. GST Compliances by Supplier

1.8.1. Notwithstanding anything contained hereinabove, the Supplier shall strictly and in a timely manner, adhere to and undertake all acts, omissions and compliances required under the applicable GST laws to ensure that the Company is able to avail the Input Tax Credit/set off/rebate/refund of the GST (along with cesses and surcharges, if relevant) as applicable on the Services or any supplies if applicable made by the Supplier under this Agreement to the fullest extent possible under law. In this regard, without limiting the generality of the foregoing obligation in any manner whatsoever, Company reserves the right to specify to the Supplier, particulars including but not limited to the following:

- (a) whether Supplier should charge IGST or CGST-plus-SGST;
- (b) GST registration number of the Company;
- (c) whether the Supplier should be responsible to generate the E-Way Bill;
- (d) the format of invoices/credit and debit notes/advance receipt vouchers;
- (e) the requirement for maintenance of a 'GST compliance rating score' above a specified threshold; etc. and
- (f) the relevant timelines for such compliances based on the applicable GST laws.

1.8.2. The Supplier acknowledges that any failure in the foregoing obligations (including undertaking the ones specifically instructed by the Company, if any) can cause significant losses to the Company in the form of loss of GST credit, statutory interest liability on such credit loss (under applicable GST laws) and adverse impact on the 'GST compliance rating score' and thus, undertakes to carry out this foregoing obligation with sincerity, due diligence and without any delay or demur.

1.8.3. The Parties agree that the Company reserves the right to reimburse the GST component on supplies received only when the corresponding credit has become available in the electronic credit ledger of the relevant GST registration of Company.

2. STATUTORY COMPLIANCES/LICENCES

2.1 The Supplier shall be solely liable for statutory compliance in respect of all applicable laws of land which inter-alia includes central/state labour laws and regulations/rules made thereunder including but not limited to Compliance of provisions of Contract Labour (Regulation and Abolition) Act, 1970, Employees State Insurance Act, 1948, Employees Provident Funds and Miscellaneous Provisions Act, 1952, Minimum Wages Act, 1948, Payment of Bonus Act, 1965, Payment of Gratuity Act, 1972, Payment of Wages Act, 1936, Workmen's Compensation Act, 1923, Interstate Migrant Workmen (regulation of Employment and Conditions of Service) Act, 1979. The Supplier shall be solely responsible for maintenance of records and filing of various forms/returns prescribed under all applicable Central/State labour laws and regulations/rules made thereunder in respect of employees employed by it.

2.2 The Company shall be entitled to deduct/adjust from amount payable to the Supplier any dues, wages, compensation on accident or death, expenses paid by the Company in compliance with the applicable laws, in respect of employees of the Supplier.

3. INSURANCE

3.1 The Supplier shall effect and maintain with a reputed insurance company a policy(ies) of insurance providing an adequate level of cover in respect of all risks which may be incurred by the Supplier, arising out of the Supplier's performance of its obligations under the Agreement, including death or personal injury, loss of or damage to property or any other loss. Such insurance shall be maintained for the duration of the Term of the Agreement.

3.2 The Supplier shall hold employer's liability

insurance in respect of its employees/personnel in accordance with any legal requirement from time to time in force.

3.3 The provisions of any insurance or the amount of cover shall not relieve the Supplier of any liabilities under the Agreement.

3.4 The Supplier shall also take third party liability insurance and surrounding property damage insurance. In case of any loss or damage, the Supplier shall lodge and settle the claim with the insurance company.

3.5 Supplier will be made at equivalent to differential loss suffered by the Company in case the loss to the Company is not fully compensated by the insurance agency.

3.6 Notwithstanding anything contained above the Company may arrange insurance of the consignment. But, that will not in any way absolve the Supplier from compensating Company /consignee in case of damage / loss.

3.7 Without limiting Supplier's obligations, liabilities, and responsibilities under any Purchase Order or at law, Supplier shall when providing Material or Services, at its cost, obtain or procure or cause others to obtain or procure the insurances required under the Agreement.

3.8 All the insurance policies described in Exhibit B, except workers' compensation and employer's liability shall, to the extent of the insurable liabilities assumed and indemnities given by Supplier hereunder, be written or endorsed with Purchasing Group as additional insured or shall contain indemnity to principal provisions, and all policies described in Exhibit B, including workers' compensation and employer's liability, shall provide that the insurance company shall have no right of recovery or subrogation against Purchasing Group. All liability policies required herein shall provide severability of interest or cross liability clause. All policies required of Supplier herein shall, to the extent of the insurable liabilities assumed and indemnities given by Supplier hereunder, provide that the insurance coverages shall be primary and not excess to or contributing with any insurance or self- insurance maintained by Purchasing Group. In all cases all applicable Supplier Group deductibles, self- insured retentions, and excesses will be borne by Supplier.

3.9 All insurances taken out by Supplier in accordance with the provisions of this Clause 3 shall provide that Supplier's underwriters of insurance give not less than thirty (30) days' notice of cancellation of any such policy of insurance to Purchaser. No such cancellation shall relieve Supplier of its obligation to maintain insurance in accordance with this Agreement and / or any Purchase Order.

3.10 To the extent Supplier has sub-suppliers of any tier, Supplier agrees that should any sub-supplier's insurance lapse, is cancelled, has insufficient limits of insurance available or is not carried, Supplier's obligations under this Clause 3 are in no way relieved or diminished. Supplier shall use its best endeavours to obtain from its sub-suppliers additional insured, or indemnity to principals, status, a waiver of subrogation and a primary insurance statement, both in favour of Purchasing Group. Upon request, Supplier shall obtain and provide Purchaser with valid certificates of insurance from such sub- suppliers evidencing compliance with this Clause 3.

3.11 Neither the delivery to Purchaser of any certificates of insurance, nor any failure on the part of Purchaser to discover and notify Supplier of any errors or omissions in certificates of insurance, nor the rejection of certificates of insurance that do not conform to the requirements described herein, shall be construed to imply an acceptance of such certificates of insurance or the coverages/endorsements reflected therein, or a waiver of the coverages/endorsements requirements contained herein. Review by Purchaser of any certificate of insurance shall not relieve Supplier from any obligation to secure the insurance coverages and endorsements required herein, and nothing shall operate to shift responsibility for insurance coverages from Supplier to Purchaser.

4 WARRANTIES AND REPRESENTATION

4.1 The Supplier represents and warrants that:

(i) It is a duly organized company/business entity validly existing under the laws where it is incorporated/established, and has experience, expertise, ability and skills as required to supply

Materials and perform the Services as detailed in the Scope of Services above and as may be necessary to perform its obligations hereunder in a professional manner.

(ii) It has all the requisite power, authority and approvals required to enter into this Agreement and will have all the requisite power, authority to perform fully each and every obligation under this Agreement.

(iii) This Agreement has been duly executed and delivered by its duly authorized representatives and constitutes its legal, valid and binding obligation enforceable against it in accordance with its terms.

(iv) The execution, delivery and performance of this Agreement and all instruments or addenda required hereunder by it does not contravene, violate or constitute a default of or require any consent under the provisions of any other agreement or instrument to which it is bound, including the constitutional documents thereof, or

any order, judgment, decree or injunction of any court of law.

(v) No legal proceedings are pending or threatened against it before any court, tribunal or authority which do or may restrain or enjoin its performance or observance of the terms and conditions of this Agreement or which do or may in any other manner question the validity, binding effect or enforceability of this Agreement.

(vi) No order has been made or petition presented for the bankruptcy protection, winding up or dissolution thereof against it.

(vii) It shall maintain high professional standards to ensure performance of this Agreement as per best business practices and in full compliance with statutory obligations.

(viii) It has all necessary statutory and regulatory permissions, approvals and permits for the running and operation of its establishment for the conduct of its business;

(ix) It has full right, title and interest in and to all trade names, trademarks, service marks, logos symbols and other proprietary marks (IPR) (including limited right of use of those owned by any of its vendors, affiliates or subcontractors) which it provides to the Company, for use related to the Material/Services, and that any IPR provided by the Supplier shall not infringe the IPR of any third party;

(x) The Supplier represents that there is no inquiry/ investigation pending by the Police against the Supplier or its employees. The Supplier undertakes that it will confirm at his own cost and expense and shall comply in all respect with the provisions of Government Authority applicable to the Supplier and /or to the Supplier's employees;

(xi) The Supplier shall be liable for all fines, penalties, and the like of parking, traffic and other criminal offences arising out of or concerning the use of any vehicle for performing the Agreement and any toll charges or entry Taxes payable locally and the Supplier accordingly indemnifies Company against all such liability.

(xii) The Supplier has sufficient resources available to respond to emergencies/ incidents, which may occur along established transportation routes. In case of any accident resulting in loss or damage to property of life, the sole responsibility for any legal or financial implication would vest with the Supplier. Company shall have no liability whatsoever.

4.2 Each Party hereby warrants that it has not entered into this Agreement relying on any warranty, representation or undertaking except for any warranty, representation or undertaking expressly set out in this Agreement.

4.3 Supplier warrants and guarantees that:

(i) all Material shall be supplied in accordance with the provisions of the Agreement/Purchase Order and with generally accepted industry standards, Trade Usage with regard to quality, Specification, quantity, measurement, performance and/or functionality and are free from defects in material and workmanship;

(ii) if the Material are manufactured by reference to Supplier's data or other specified data provided to Purchaser, the Material shall have been manufactured in accordance with such data;

(iii) if the Material are sold by sample then they shall conform to the sample;

(iv) if the Material are manufactured to designs supplied by Purchaser, the Material shall have been manufactured in conformity with such designs and any approved working drawings;
(v) it is aware of the purpose and usage of the Material by the Purchaser including the technical parameters attributable to the usage of the Material; and
(vi) in the case of the Material, be of the best available design, of the best quality and workmanship and shall be free from fault or defect (including latent defect), with such tolerances as stated in the Specification or on the drawings.

4.4 If Supplier is required to repair or replace defective Material, the warranty period shall renew for the repaired or replaced Material.

5. RISK PURCHASE/SUBSTITUTED PERFORMANCE

5.1.1 Without prejudice to any other rights of the Company under the Agreement, relevant Purchase Order/(s) and/ or at law, if the Supplier fails to perform its obligations as per the provisions of this Agreement and/or the relevant Purchase Order/(s), the Company may procure the Material from third party sources at the risk and costs of the Supplier. Provided however that prior to exercising this right, the Company shall give a prior written notice of 30 (thirty days) to the Supplier for rectifying the breach.

6. BUSINESS ETHICS

6.1. The Supplier shall declare any conflicts of interest with the Company including relationship or financial interest of any nature whatsoever with employees, managers, other suppliers, vendors or stakeholders of the Company.

6.2. The Supplier shall not use the services of any of the employees of the Company, directly or indirectly or enter into any sort of monetary transaction with the employees of the Company. The Supplier undertakes that he has not given, offered or promised to give directly or indirectly any bribes, commission, gift, consideration, reward, or inducement to any of the employees of the Company or their agent or relatives for showing or agreeing to show favor or disfavor to any person in relation to this Agreement or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the aforesaid undertaking, by the Supplier, or his partners, agent or servant or any one authorized by him or acting on his behalf.

6.3. The Supplier agrees to comply with the provisions of the Company's Supplier Code of Conduct which includes Anti-bribery and Corruption requirements (a copy of which is also available at <https://www.tsplindia.co/wp-content/uploads/2019/04/TSPL-Suppliers-Code-of-Conduct-12-10-2018-1.pdf>) and the Company's Human Rights Policy (a copy of which is available at <https://www.tsplindia.co/wp-content/uploads/2019/04/06-TSPL-Human-Rights-Policy-27-Jan-20.pdf>) including the Modern Slavery Act and in case of breach thereof, the same shall be treated as a breach of this Agreement.

6.4. The Supplier shall maintain records and provide to the Company upon request such records and evidences, as the Company may reasonably require, confirming the Supplier's compliance with the obligations under this clause.

6.5. The Company shall have a right to initiate "audit proceedings" against the Supplier to verify compliance with the requirements under this clause. Such audit may be carried out by Company or by a reputed agency to be appointed by Company at the sole discretion of Company. The Supplier shall extend full cooperation for smooth completion of the audit mentioned herein.

6.6. Notwithstanding anything in this agreement, Company shall have right to terminate the Agreement forthwith and recover from the Supplier, the amount of any loss arising from such termination in case, it is found that the Supplier has failed to comply with requirements under this clause including any corrupt practices. A decision of the Company or his nominee to this effect that a breach of the undertaking had been committed shall be final and binding on the Supplier.

6.7. If at any time during execution or performance of this Agreement the Supplier becomes aware of any unethical practices or is faced with any undue demand, request for gratification or favor from any employee of the Company or a person connection with such employee, the Supplier must report the same immediately to the Group Head-Management Assurance at the following address:

Group Head – Management

Assurance, Vedanta, 75 Nehru Road

Vile Parle (E), Mumbai 400 099

'Complaints' can also be sent to the designated e-mail id: tspl.whistleblower@vedanta.co.in

7. DEFAULT AND TERMINATION

7.1. Notwithstanding anything contained herein to the contrary, the Company may immediately terminate all or part of this Agreement/Purchase Order as under:

(i) by a written notice to the Supplier in case of any breach of the terms of this Agreement by Supplier and has failed to remedy such breach within 30 days from receiving notice from the Company.

(ii) if Supplier (a) ceases, or threatens to cease, to function as a going concern or conduct its operations in the normal course of business, (b) commences, or becomes the subject of, any bankruptcy, insolvency, reorganization (other than in the course of a corporate re-organization or to an affiliate), administration, liquidation or similar proceedings, (c) makes, or plans to make, a general assignment for the benefit of its creditors, or (d) creditor attaches or takes possession of all or a substantial part of said Party's assets;

(iii) The foregoing shall not apply to any action or proceeding which is (a) in the reasonable opinion of the Company, frivolous or vexatious; or (b) discharged, stayed or dismissed within ninety (90) days of commencement;

(iv) if Supplier is unable to carry out its obligations by reason of Force Majeure events and the force majeure continues for a period more than 60 days, then Company may by giving notice in writing, terminate this Agreement with immediate effect. Any such termination shall be without prejudice to any of the right of the Supplier accrued prior to the date of such termination.

(v) if the price of the Commodity/Material falls below 95% or exceeds 105% of the benchmark market index rates.

7.2. Notwithstanding anything contained herein to the contrary, The Company may terminate all or part of this Agreement by one (1) months' written notice without assigning any reason whatsoever or if the Supplier fails to obtain any approval required under the terms of this Agreement.

7.3. Upon termination of this Agreement, both Parties shall be relieved of their respective rights and obligations under this Agreement save such obligations and / or liabilities of the Parties set forth herein which (i) that the Parties have expressly agreed will survive any expiration or termination, or

(b) by their nature would be intended to be applicable following any such expiration or termination, or (c) the Parties have accrued before expiration or termination, as the case may be.

7.4. Upon termination, the sole liability of the Buyer

towards the Seller under the Agreement shall be to make payment of all direct and documented costs which have been incurred by the Supplier till the date of termination.

7.5. In the event of Supplier's breach of its obligations hereunder, no payment shall be due by Purchaser in respect of such order/Purchaser order,

8. . LIMITATION OF LIABILITY

8.1. 8 EXCEPT AS MAY BE OTHERWISE PROVIDED IN THIS AGREEMENT, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER, WHETHER ARISING UNDER CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, FOR ANY INDIRECT, CONSEQUENTIAL, SPECIAL, PUNITIVE, EXEMPLARY OR INCIDENTAL LOSS OR DAMAGES OF ANY NATURE ARISING AT ANY TIME FROM ANY CAUSE WHATSOEVER.

8.2. The limitations of liability and exclusion of warranties as set out in the Agreement shall be to the maximum extent permitted by applicable law. Nothing in this Agreement purports to exclude or limit liability for fraud, misrepresentation, death or personal injury.

9. . FORCE MAJEURE

9.1. For the purposes of this Agreement, "Force Majeure" means the occurrence of any event or circumstance or combination of events or circumstances that is beyond the reasonable control of a Party, has a material and adverse effect on the performance by that Party of its obligations under or pursuant to this Agreement, and that demonstrably could not have been foreseen by the Parties; provided, however, that such material and adverse effect could not have been prevented, overcome or remedied by the affected Party through the exercise of diligence and reasonable care; but provided, further, that the exercise of diligence and reasonable care will not include the obtaining or maintaining of insurance beyond the requirements of this Agreement.

9.2. Subject to clause 9.1 hereinabove, Force Majeure includes without limitation, the following events and circumstances, but only to the extent that each satisfies the above requirements as provided under Clause 9.1; (a) Act of God, (b) fire, flood, earthquake, epidemic, pandemic, natural disaster or extreme natural event (c) war, riot, insurrection, civil commotion, mobilization or military, call up of a comparable scope, which has been notified in accordance with this Clause 9 any direction, judgement, decree or any other order passed by any judicial/quasi-judicial/administrative authority and/or any direction passed by the government authority/(ies) restraining the performance of obligations, whether in part or in full, of the affected party provided that such orders or directions must not emanate out of actions directly attributable to the affected party or (e) any event owing to any restrictions, directives/directions imposed or passed by the government, judicial, quasi-judicial authorities if they impede or delay the performance of the Agreement (Force Majeure Events) FORCE

MAJEURE EXCLUSIONS

Force Majeure will expressly not include the following conditions, except and to the extent that they result from an event or circumstance otherwise constituting Force Majeure:

- (i) unavailability, late delivery or changes in cost of machinery, equipment, materials, spare parts or consumables;
- (ii) failure or delay in performance by any Subcontractor;
- (iii) normal wear and tear or flaws in materials and equipment or breakdowns in equipment.
- (iv) any labour unrest/strikes or any other event of the like nature caused by the personnel of the Supplier (which includes its subcontractors) shall not be considered as a force majeure occurrence

9.3. In the event of a Force Majeure occurrence, the party that is or may be delayed in performing the Agreement shall notify in writing to the other party without delay but not later than fifteen (15) business days on the initiation of such Force Majeure Event(s) and shall use diligent efforts to end the failure or delay in performance to minimize effects of such Force Majeure Event. Provided, however, that the occurrence of such an event would entitle the parties to renegotiate the time frame for performance of the respective obligations, taking into consideration the nature of such event. . In such a situation, the party, which is not able to perform its obligations under this Agreement on account of Force Majeure Event(s), shall not be liable to the other party for the default or breach of this Agreement for the period of failure or delay. If the said notice is not received by the other party within fifteen (15) business days, after the party who fails to perform knew or ought to have known of the impediment, it is liable for damages resulting from such non-receipt.

9.4. Both Parties agree to use their respective reasonable efforts to cure any event of Force Majeure to the extent that it is reasonably possible to do so. Upon the cessation of the event of Force Majeure, the party declaring Force Majeure shall immediately but not later than three (3) business days give notice thereof to the other party.

9.5. Neither Party shall be liable in any manner whatsoever to the other party in respect of any loss, damage, costs, expense, claims, demands and proceedings relating to or arising out of

occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereof. The costs associated

with taking all steps required to mitigate the effects of the Force Majeure Event and restore its ability to perform its obligations under this Agreement as soon as reasonably practicable shall be borne by the respective parties.

10. INDEMNITY

10.1 The Supplier shall defend, indemnify and hold the Company, its directors, officials & employees etc., harmless from and against any and all against any and all claims, liabilities, costs, damages and expenses (including court costs and legal fees) in connection with any claim made by any third party (including, but not limited to, any claim made by any governmental or statutory authority) against the Company arising out of or in connection with the performance by the Supplier of its obligations under this Agreement.

10.2 The Supplier shall be liable for and shall defend, indemnify and hold the Company its directors, officials & employees etc., harmless from and against and all Claims in connection with any breach, infringement (whether actual or alleged) of Confidentiality, accident, bodily injury, fraud arising out of or in connection with the performance of this Agreement by the Supplier.

10.3 Supplier shall at all times be responsible for, shall release and shall defend, protect, indemnify and hold Purchasing Group harmless from and shall keep Purchaser's equipment and property free and clear of all liens, claims, assessments, fines and levies incurred, created, caused or committed by Supplier Group.

10.4 This indemnity shall be without prejudice to any other rights or remedies, including injunctive or other equitable relief, which the Company may be entitled to.

10.5 Purchaser shall have the right to retain / withhold out of any payment to be made to the Supplier an amount sufficient to indemnify it completely against any such lien, claim, assessment, fine or levy exercised or made and all associated costs. .

10.6 It is the express intention of the Parties hereto that the provisions of this Agreement / Purchase Order shall exclusively govern the allocation of risks and liabilities of thee Parties, it being acknowledged that the Agreement reflected herein has been based upon such express understanding. It is acknowledged that the compensation payable to Supplier as specified in this Agreement and/or applicable Purchase Order has been based upon the express understanding that risks and liabilities shall be determined in accordance with the provisions of this Agreement and/or applicable Purchase Order.

11. ARBITRATION 11.1 Any dispute or difference whatsoever arising between the parties out of or relating to the interpretation,, meaning, scope, operation or effect of this Agreement or the existence, validity, breach or anticipated breach thereof or determination and enforcement of respective rights, obligations and liabilities of the parties thereto shall be amicably settled by way of mediation by meeting(s) between senior management representatives of each Party. If the dispute is not conclusively settled within a period of twenty-one (21) days from the date of commencement of mediation or such further period as the parties shall agree in writing, the dispute shall be referred to and finally resolved by arbitration under the (Indian) Arbitration and Conciliation Act, 1996 (as amended from time to time), which are deemed to be incorporated by reference into this clause. The arbitration shall be conducted as follows: (i) A sole arbitrator shall be appointed in case the value of claim under dispute is less than 5,000,000 (Rupees Five Million Only) / \$ 100,000 (Hundred Thousand United States Dollars) and in any other event by a forum of three arbitrators with one arbitrator nominated by each Party and the presiding arbitrator selected by the nominated arbitrators. (ii) The language of the mediation and arbitration proceedings shall be English. The seat and venue of arbitration shall be New Delhi, India. (iii) The award made in pursuance thereof shall be final and binding on the parties. (iv) It is clarified that the works under the Agreement shall be continued by the Supplier during the arbitration proceedings unless otherwise directed in writing by the Purchaser/Company. Save as those which are otherwise expressly provided in the contract, no payment due or payable by the Purchaser shall be withheld on account of such arbitration

proceedings, unless it is the subject matter or one of the subject matters thereof. 12. APPLICABLE LAW AND JURISDICTION

11.1 This Agreement shall be governed by, construed and enforced in accordance with the laws of India.

11.2 The parties submit to the exclusive jurisdiction of the courts of____, India and any courts that may hear appeals from those courts in respect of any proceedings in connection with this Agreement.

13. SET OFF

12.1 Only the Company may at any time without notice to the Supplier set off any liability of the Supplier to the Company against any liability of Purchasing Group to the Supplier (in either case howsoever arising and whether any such liability is present or future, liquidated or unliquidated and irrespective of the currency of its denomination) and may for such purpose convert or exchange any currency. Any exercise by the Company of its rights under this clause shall be without prejudice to any other rights or remedies available to Company under this Agreement or otherwise.

14. CONFIDENTIALITY

14.1 Each Party hereto shall, save as otherwise provided herein, maintain in strict confidence, and not disclose or use for a purpose other than the purpose set out herein, any confidential and/or proprietary information ("Confidential Information") of the other Party including this Agreement and the terms and conditions hereof. The foregoing covenant shall not restrict a Party from disclosing Confidential Information to the extent required in connection with any legal proceeding(s) or required for filing with govt. agencies, courts, stock exchanges or other regulatory agencies under applicable laws and regulations. Each Party shall use its best effort to assure that the provisions of this Agreement and its information disclosed to it concerning the other Party and its assets and business which is not otherwise publicly available, shall be kept confidential, unless other required by law, not to be disclosed without the consent of other Party to anyone other.

14.2 The Parties shall restrict access to the Confidential Information only to its own employees or professional advisers who need to have such access for the purposes of performing the obligations or enforcing the rights under this Agreement and who have agreed with such party to abide by the obligations of confidentiality equivalent to those contained herein with such party. The disclosing party shall remain vicariously liable for such disclosure.

14.3 Each Party agrees that it will not use the name or logo of the other Party, without the prior written consent of the other Party(ies) hereto.

14.4 All Confidential Information developed by Supplier Group as a result of performance of the Services or supply of Material shall be the property of Purchaser. All such Confidential Information shall be delivered to Purchaser within fifteen (15) days after completion of any applicable Purchase Order. Purchaser shall have the unrestricted right to use and disclose such information in any manner and for any purpose without payment of further compensation. Such Confidential Information is proprietary information of Purchaser and subject to the terms of this Clause 13.

14.5 Obligations towards all Confidential Information as mentioned above under this clause shall continue to remain valid for the Term and further period of five (5) years from the date of expiry of this Agreement.

14.6 No member of Supplier Group shall make use of the name or logo of Purchasing Group for publicity purposes, nor shall publish or permit to be published any information or photographs in connection with this Agreement or any Purchase Order without the prior written consent of Purchaser.

15. MISCELLANEOUS PROVISIONS

15.1 Entire Agreement: This Agreement along addendums and with all annexures, if any

constitutes the entire agreement and understanding between the parties with respect to its subject matter and

overrides and supersedes all previous agreements, representations, written documents, correspondence and understanding of the parties, whether in writing or otherwise.

15.2 Severability: If any clause or provision of this Agreement is prohibited, invalid or unenforceable in any jurisdiction, that provision will, as to that jurisdiction, be ineffective to the extent of the prohibition, invalidity or unenforceability without affecting or invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of that provision in any other jurisdiction, unless it materially alters the nature or material terms of this Agreement.

15.3 Counterpart: This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original Agreement and all of which, when taken together, will constitute one and the same instrument

15.4 Relationship: This Agreement shall not be construed to have any purpose or intent other than for purchase and sale of the Commodity between the Parties on a non-exclusive basis and nothing contained in this Agreement shall be deemed to create any association, partnership, joint-venture or relationship of principal and agent or master and servant between the parties or any affiliates or subsidiaries thereof. 15.5 Notices: Any notice required to be given hereunder shall be given by sending the same by facsimile, email, prepaid post or by hand delivery to the address of the addressee shown in this Agreement or to such other address as either Party may notify to the other for this purpose in writing. If sending by facsimile, notice shall be deemed to have been given upon successful transmission, if by hand upon at the time of dispatch and if sending by post, notice shall be deemed to have been given on the 3rd day on dispatch by post.

15.6 Non-Waiver/Exercise Of Right: A failure or delay in exercising any right, power or privilege in respect of this Agreement will not be presumed to operate as a waiver, and a single or partial exercise of any right, power or privilege will not be presumed to preclude any subsequent or further exercise, of that right, power or privilege or the exercise of any other right, power or privilege. All waivers under this Agreement must be made in writing.

15.7 Binding Effect: This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns

15.8 Assignment: Neither this Agreement nor any right, duty or obligation of any Party hereunder may be assigned or delegated by any Party (in whole or in part) without the prior written consent of the other Party(ies) hereto.

15.9 Amendments: This Agreement may be amended, modified, renewed or extended only by a written instrument signed by each of the Parties hereto.

15.10 Validation: This Agreement shall come into effect when authorized representatives of both Company and Supplier execute and affix their signature hereto in their due capacity, within 3 working days after confirmation of business by Company and constitutes the entire agreement between the Parties relating to its subject matter. Any alteration, amendment or addition to any of the terms of this Agreement shall become binding only when such alteration, amendment or addition is evidenced in writing and is executed by the authorized representatives of the both Parties in their due capacity.

15.11 Costs: Each Party shall bear its own legal, professional and advisory fees, commissions and other costs and expenses incurred by it in connection with this Agreement.

15.12 Language of the Agreement: English shall be the language of the Agreement and all documentation prepared in relation to it. All of the parties management staff engaged in work arising out of or in connection with this Agreement shall be fluent in English.

15.13 Remedies cumulative: Except as expressly provided in this Agreement, all remedies available to the Parties for breach of this Agreement are cumulative and may be exercised concurrently or separately, and the exercise of any one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.

15.14 THIS DOCUMENT "STANDARD TERMS & CONDITIONS" SHALL BE AN INTEGRAL PART OF ANY OF THE PURCHASE ORDERS, INVOICE OR MOU OR OTHER DOCUMENT WHATSOEVER ENTERED BETWEEN THE PARTIES AND SHALL SUPERCEDE ANY CONTRARY TERMS IN SUCH PURCHASE ORDER, INVOICE OR MOU OR OTHER DOCUMENT WHATSOEVER INCLUDING ANY ORDER ACKNOWLEDGEMENT BY THE

SUPPLIER AND THIS DOCUMENT AND THE GENERAL TERMS AND CONDITIONS MENTIONED HEREIN SHALL APPLY FOR ALL PURPOSES.

ANNEXURE IV CODE OF CONDUCT

This Supplier Code of Conduct is applicable to all 'Suppliers' globally. 'Supplier' here refers to suppliers/ service providers/ vendors/ traders / agents/ consultants/ contractors/ joint venture partners/ third parties including their employees, agents and other representatives, who have a business relationship with and provide, sell, seek to sell, any kinds of goods or services to Vedanta Resources Plc or any of its subsidiaries, affiliates, divisions ("Vedanta").

This Code sets forth the basic requirements that we ask our Suppliers to respect and adhere to when conducting business with Vedanta. This Code embodies Vedanta's commitment to internationally recognized standards, including the Core Conventions of the International Labour Organization, United Nations' Universal Declaration of Human Rights as well as prevalent industry standards, and all other relevant and applicable statutory requirements concerning Environment Protection, Minimum Wages, Child Labour, Anti-Bribery, Anti-Corruption, Health and Safety, whichever requirements impose the highest standards of conduct.

LABOUR & HUMAN RIGHTS

Adhering to all Labour Laws and Human Rights Laws, Suppliers shall:

- Comply with all applicable local, state and national laws regarding human rights.
- Comply with the Company's Human Rights Policy.
- Ensure that all their employees are hired on their own free will and guarantee that all their operations are free from forced, bonded, compulsory, indentured, prison labour or any other form of compulsory labour and child labour.
- Ensure that all its employees are provided equal employment opportunities, an environment conducive to their growth, free from any form of discrimination and harassment.
- Ensure compliance with minimum working hours and minimum wages prescribed by applicable laws and regulations.
- Comply with all slavery and human trafficking laws. Suppliers must ensure they have taken steps to ensure their business operations are free from slavery and human trafficking practices both internally and within their supply chains and other external business relationships.
- Ensure that employees are not be charged any fees or costs for recruitment, directly or indirectly;
- Not confiscating or withholding worker identity documents or other valuable items, including work permits and travel documentation of any of its workers/ employees.

HEALTH, SAFETY & ENVIRONMENTAL SUSTAINABILITY

- The Supplier shall provide its employees with a safe and healthy working environment and comply with all applicable laws and regulations regarding working conditions.
- Supplier shall follow all Environmental, Health and Safety and other operational policies of the Company while executing any work or contract at the company site.
- Supplier shall follow all laws of the land including laws on Environment sustainability and protection while executing any work for the Company.

BUSINESS INTEGRITY

Anti-Bribery: The Supplier shall not, directly or through intermediaries, take any recourse to any unethical behaviour (implicit or explicit), or offer or promise any personal or improper advantage in order to obtain or retain a business or other advantage from a third party, whether public or private, including with any employee of Vedanta. More specifically:

- Shall not offer or accept bribe or use other means of obtaining undue or improper advantage, offer or accept any kickbacks, and shall not take any actions to violate or cause its business partners to violate any applicable anti-bribery laws and regulations including the Foreign Corrupt Practices Act of USA (FCPA), Bribery Act of United Kingdom and Prevention of Corruption Act of India.

- Shall not take any advantage of any family/ social/ political connections to obtain favorable treatment or for the advancement of business or obtaining any favours. Merit shall be the sole attribute of association with Vedanta.
- Shall not enter into a financial or any other relationship with a Vedanta employee that creates any actual or potential conflict of interest for Vedanta. The Supplier is expected to report to Vedanta any situation where an employee or professional under contract with Vedanta may have an interest of any kind in the Supplier's business or any kind of economic ties with the Supplier.
- Shall not offer any gift, hospitality or entertainment for the purpose of obtaining any advantage, order or undue favor.

Unfair Trade Practices: Supplier shall desist from any unfair or anti-competitive trade practices. **REPORTING OF UNETHICAL PRACTICES AND GRIEVANCE ADDRESSAL MECHANISM**

The Supplier shall ensure that an effective grievance procedure has been established to ensure that any worker/ employee, acting individually or with other workers, can submit a grievance without suffering any prejudice or retaliation of any kind.

Suppliers shall also forthwith report any unethical activity or discrimination if practiced by any Vedanta employee/other Suppliers as per Vedanta whistle-blower policy (uploaded on the company website). **INTELLECTUAL PROPERTY**

The Supplier shall take appropriate steps to safeguard and not infringe any Vedanta confidential and proprietary information/intellectual property/ technology which come to its knowledge during the course of its business relationship/ dealings with Vedanta. In case of sub-contracting, sharing of confidential information should be made with the consent of Vedanta.

THIRD PARTY REPRESENTATION

The Suppliers shall not be authorized to represent Vedanta or to use Vedanta's brands without the written permission of Vedanta. Third parties and their employees who are authorized to represent Vedanta are expected to abide by the Vedanta's Code of Conduct & Business Ethics Policy in their interaction with, and on behalf of Vedanta including the confidentiality of information shared with them and to sign a non-disclosure agreement to support confidentiality of information.

PROHIBITION ON INSIDER TRADING

If the Supplier becomes aware of material, non-public information relating to Vedanta or its business, it may not buy or sell Vedanta securities or engage in any other action to take advantage of that information, including passing that information on to others. In addition, if the Supplier becomes aware of material, non-public information about any other company, including Vedanta customers, suppliers, vendors or other business partners, that is obtained by virtue of the supplier's interaction with Vedanta, then the Supplier shall not buy or sell that company's securities or engage in any other action to take advantage of that information, including passing that information on to others.

SUPPLIER'S COMPLIANCE COMMITMENT

Vedanta expects the Supplier to adhere to all applicable laws and regulations and in particular comply with this Code in letter and spirit. It is the Supplier's responsibility to read and understand the contents of this Code and Vedanta's Code of Conduct & Business Ethics Policy. As a condition of doing business with Vedanta, the Supplier must comply with this Code and agree to uphold such values during its business association with Vedanta.

The Supplier shall maintain adequate documentation to demonstrate compliance with the principles of this Code, and allow access to Vedanta to check compliance upon request with reasonable notice. The Supplier shall notify Vedanta regarding any known or suspected improper behaviour by the Supplier relating to its dealings with Vedanta, or any known or suspected improper behaviour by Vedanta employees.

Please contact the concerned Head commercial/ Company Secretary if you have any questions about this Code.

EXHIBIT A CORPORATE POLICY DIRECTIVE - POSSESSION CONTRABAND ITEMS

It is the policy of Vedanta to maintain a safe work environment for its employees. To this end, the possession of any illegal drug, drug paraphernalia, alcoholic beverage, explosive, weapon or any other similar item or substance which could cause or contribute to injury to Vedanta personnel or damage to its property ("contraband") is strictly prohibited at work locations or other business premises ("work areas") of Vedanta. This policy may be implemented by such reasonable means as may from time to time be determined appropriate, including searches of the person and personal effects of any person.

Compliance with this policy is a condition of employment of Vedanta and employees who decline to be searched or who are otherwise found in violation of this policy will be subject to immediate termination. Non-employees who decline to be searched or are otherwise found in violation of this policy or Vedanta's Substance Abuse Policy will be excluded from Vedanta work areas. Below is a Notice outlining Vedanta's Substance Abuse Policy.

DRUGS, ALCOHOL, FIREARMS, SEARCHES

Vedanta is concerned about the effects of the use of illegal drugs and the abuse of alcohol on the health and safety of its employees. We recognize that alcoholism and the illegal use of drugs leads to increased accidents and medical claims, and can lead to the destruction of an employee's health, and adversely affect his or her personal life. Employees who abuse drugs and alcohol are a danger not only to themselves, but also to their fellow employees. In addition, the medical costs incurred by employees with drug or alcohol problems are much higher than those of other employees, and the decreased productivity of these individuals can adversely affect a company's ability to operate competitively. To help prevent substance abuse among our employees, Vedanta has a policy and practice of testing applicants, employees, and others that may regularly work in or on Vedanta premises. Applicants for employment will be required to undergo a drug-screening test as part of consideration for employment. Employees and others will be required, under certain circumstances, to cooperate with drug testing procedures and drug searches.

The unauthorized possession or use of illegal, drugs, narcotics, alcohol and firearms is not permitted on any Vedanta property or job site that is not Vedanta property, and the use of, possession of, and/or distribution of such items by any person on any Vedanta installations, property, or facilities poses a serious threat to the safety of our employees, other personnel and operations.

SEARCHES, INSPECTIONS, AND ANALYSES

We reserve the right, at all times, to have authorized personnel conduct reasonable searches or inspections on Vedanta property of personal effects, lockers, baggage, vehicles, and quarters of employees and other personnel for the purpose of determining if any such persons are in possession of any illegal or unauthorized items. These searches will be conducted in cases where the Vedanta receives any information indicating that reasonable cause exists to conduct a search.

Any Vedanta employee who refuses to submit to a search, urin alysis, blood test, or who is found in possession of any such illegal or unauthorized items without an explanation satisfactory to us will be subject to disciplinary action up to and including immediate discharge.

When appropriate, such items discovered through these Vedanta searches may be taken into custody and may be turned over to the proper law enforcement authorities.

The below mentioned attachments are part of the tender document and the vendor to comply the same.

Attachments:

Annexure 1 Business Partner safety management

handbook. Annexure 2 Code of Conduct

Annexure 3 HSE

Annexure 4 Vedanta Sustainability

clauses Annexure 5 PBG format

Annexure 6 Modern Slavery Act declaration

For more details regarding TSPL sustainable policies, supplier code of conduct, Vedanta Technical & performance standards please visit <https://www.tsplindia.co/about-us/policies-practices/>

Supplier & Business Partner Safety

Management Talwandi Sabo Power

Limited (TSPL)

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1. Objective:

Talwandi Sabo Power Limited (TSPL) is committed to provide a safe work environment for all employees, supplier, business partner and their employees, along with visitors and stakeholders. TSPL is working on the principle of "ZERO HARM" i.e No fatalities, No disabling injuries, No Loss time Injuries, No medical treatment Injuries, No First Aid injuries & No occupational illness. We believe

- All injuries, occupational illnesses and diseases are preventable.
- It is good business to prevent injuries and illnesses.
- Working safely is a condition of employment.
- Everyone is responsible for health & safety performance. Line Managers/Supervisors are accountable.
- All line managers/supervisors must do safety observations and they must ensure all problems are noted and corrected.
- All unsafe practices/incidents must be recorded.
- Unsafe practices must be corrected; incidents must be investigated; and root causes to be found & corrected. Training is essential to have a healthy and safe working environment.
- Promote the job safety for employees, business partner and stakeholders.

Business Partners are our major resource & to meet this safety management objective, the following criteria must be achieved:

- All Business Partners to be aware of their responsibilities and obligations and to comply with all TSPL
- Safety, health and Environment policies and procedures while working on TSPL premises.
- All Business Partners to maintain a safe working environment.
- All Business Partners to minimize disruptions to the daily running of the business.
- All Business Partners to be familiar with the terms & conditions of TSPL .
- All Business Partners to be familiar with and comply with their legal requirements, including risk assessment, licensing, certificates and providing a safe work environment.

2. Before Start of Work

Before a contractor can begin work on any TSPL, they must ensure that certain requirements are met to minimize risks. The contractor & all sub contractors must:

- be provided with a scope of works. Licenses, Certificates of Competency, Training, Insurance requirements etc should be ensured by the contractor based on the scope of works.
- Supply evidence of current insurances
- Complete induction training as per the task being performed, once the risks have been identified and controls established i.e. lockout, hot works etc; and
- Follow of instructions given by the company management time to time without violations.

3. Business Partner category

Different category of Business Partner & their jobs shall have different requirements to ensure a safe workplace is maintained by the contractor depending on the nature of the task that is to be performed. The classes and minimum requirements are listed below:

Category	Activity	Service Examples	Minimum Requirements
1. Admin	Companies or individuals engaged to work within or on behalf of TSPL operations. The work being performed is neither hazardous nor performed within a hazardous location	<ul style="list-style-type: none"> Office cleaners Administration staff Office equipment repairs Catering services 	<ul style="list-style-type: none"> Consultants facilitating professional development (indoors) Scope of Works Safety management handbook Insurance Induction to appropriate level Adequately trained/skilled personnel Reliable and safe equipment, tools and material
2. Advisory	Consultants – technical advice and planning	<ul style="list-style-type: none"> Product Engineers Plant Designers (not including large project work under 3.5 Design to commission) System development Training or Technical Advisors (not attending) 	<ul style="list-style-type: none"> Scope of Works Insurance Adequately qualified/skilled personnel
3. Operational	Companies or individuals engaged to undertake work within existing operations, where the work may be hazardous in nature and or conducted in an operational area.	<ul style="list-style-type: none"> Quarry load, haul, drilling and stripping Routine maintenance and repairs on fixed plant, mobile equipment, Buildings Labor Hire Personnel engaged in operational Activity Road transport Outdoor training Consultants Gardening services Crane companies Technical Consultants outdoor and operational 	<ul style="list-style-type: none"> Scope of Works Safety management handbook Insurance Routine audits and review (as required) Induction to appropriate level Adequately trained/skilled personnel Reliable and safe equipment, tools and material Provide to TSPL the Safety and Health RA's and Procedures and other relevant Documents Provide Competency Assessments for all tasks that require the contractor to use mobile plant or any other regulated Activity
4. Specialised activities	Companies or individuals engaged to perform activity that is reasonably assumed to be medium/high risk.	<ul style="list-style-type: none"> Electrical maintenance or Installation jobs Agitator de-Lagging Contractors conducting activities regarded as prohibited, i.e. confined space, trenching Construction/Demolition (not in designated construction zone) Asbestos removal 	<ul style="list-style-type: none"> Scope of Works Contractor Safety Management Handbook Pre-qualification review Routine audits and scheduled reviews Insurance Induction to appropriate level Adequately trained/skilled personnel Reliable and safe equipment, tools and Material Assessment of contractors HSE Policy

- Provide to TSPL the Safety and Health
- Provide Competency Assessments for all tasks that require the contractor to use mobile plant or any other regulated activity

- Safety Management Plan

- Routine Assessment's and Procedures and other relevant documents

5. Construction

Companies undertaking construction projects, where the contractor is deemed in control of the project and a clear "construction zone" is designated. These areas are physically separated from our operational activities.

- Construction projects
 - Plant installations or major refurbishmen

All scope of works and details are to be organised during the tendering stage. These projects are generally coordinated by

specialised teams within TSPL . **The day-to-day safety and health controls are managed by the contractor and not by TSPL .** These contractors should supply a Safety Management Plan for the project which includes:

Scope of Works

- Pre-qualification review including
- HSE performance and policy
- Contractor supplied audits and reviews

- Contractor supplied induction to appropriate level Adequately trained/skilled personnel
 - Reliable and safe equipment, tools and materials
 - Safety and Health Routine Assessment's and Procedures and other relevant documents
- Provide Competency Assessments for all tasks that require the contractor to use mobile plant or any other regulated activity

4. Induction Training

Business Partner all employees will be required to attend Induction Training to ensure they are familiar with safety requirements and emergency procedures. This training is a mandatory process for gate pass preparation and entry in TSPL premises.

Communication and Consultation

All contractors are to maintain effective communication with TSPL in relation to any safety, health or environmental issues.

5. Golden Safety Rules



6. Lifesaving rules

All manpower at TSPL premises to follow below lifesaving rules.

<p>Rule No. 1 Isolate, Earth, Bond, Test before working on Electrical apparatus ਬਿਜਲੀ ਚਪਕਰਾਈ ਸੇਂ ਕਾਰਯੋਂ ਦੀ ਸੂਰੋਂ ਚਲੋਂ ਆਈਂਸੋਲੇਟ ਆਰ, ਗੇਂਡ ਆਰ ਖਰਾਹ ਕੀ ਯੋਂਗ ਚੁਨਿਓਰ ਕਰੋ। ਬਿਜਲੀ ਦੇ ਉਪਰਕਲਾ ਨੂੰ ਕੋਮ ਤੋਂ ਪਹਿਲਾਂ ਆਈਸੋਲੇਟ, ਆਰ, ਗੇਂਡ ਆਰੇ ਪੁਰਾਹ ਦੀ ਜਾਂਚ ਜਰੂਰੀ ਹੈ।</p> <p>Rule No. 2 Ensure Valid Work Permit & LOTO before work ਕਾਰਯੋਂ ਕਰਨੇ ਸੇ ਪੂਰੋਂ ਘਰਮਿਟ ਆਰ ਜੋਟੋ ਚੁਨਿਓਰ ਕਰੋ ਕੋਮ ਕਰਨ ਤੋਂ ਪਹਿਲਾਂ ਪਰਮਿਟ ਆਰੇ ਲੋਟੋ ਯਕੀਨੀ ਕਰੋ</p> <p>Rule No. 3 While working at height-Hook up Safety Harness & Check Ladders / Platform ਠੰਘਾੜੋਂ ਘਰ ਕਾਰਯੋਂ ਕੇ ਸਮਯ ਸੇਫਟੀ ਹੇਲਟ ਲਗਾਯੋ ਆਰ ਸੀਡੀ, ਮਾਡਾ ਆਰ ਚਪਕਰਾਯ ਕੀ ਯੋਂਗ ਕਰ ਕੇ ਉਚਾਈ ਤੋਂ ਕੋਮ ਕਰਨ ਤੋਂ ਪਹਿਲਾਂ ਸੇਫਟੀ ਹੇਲਟ ਲਗਾਓ ਆਰ ਪੈਂਤੀ, ਥਾਡਾ ਤੋਂ ਉਪਕਰਨ ਦੀ ਜਾਂਚ ਕਰੋ।</p> <p>Rule No. 4 Follow traffic rules- Wear Crash Helmet on bike & Vehicle Seat Belt. ਯੋਟਰਸਾਈਕਲ ਯਕਾਠੇ ਸਮਯ ਐਂਡਰੋਲਮੈਂਟ ਚੁਯੋ ਯਾਰ ਚਰਿਯੋ ਯਕਾਠ ਚਲਾਯੋ ਸਮਯ ਸੇਫਟੀ ਸੀਟ ਬੈਲਟ ਯਾ ਚਪਕਰਾਯ ਕਰੋ। ਮੋਟਰਸਾਈਕਲ ਚਲਾਯੋਯੋ ਸਮੇਂ ਕਰੈਸ਼ ਹੈਲਮੈਟ ਆਰੇ ਯਾਰ ਪਹਿਰਾ ਵਾਹਨ ਚਲਾਯੋਯੋ ਸਮੇਂ ਸੀਟ ਬੈਲਟ ਚਾ ਪੁਰੋਗ ਕਰੋ।</p>	<p>Rule No. 5 Always Report - Near Miss, Unsafe Conditions and Act ਜੀਯਰਮਿਸ਼, ਅਸੁਰਮਿਸ਼ ਰਿਥਿਯੋ ਆਰ ਕਾਰਯੋਂ ਯੋ ਰਿਪੋਰਟ ਨੀਅਰਮਿਸ਼, ਅਸੁਰਮਿਸ਼ ਸਥਿਤੀ ਤੋਂ ਕੋਮ ਦੀ ਰਿਪੋਰਟ</p> <p>Rule No. 6 Always be sober and Alcohol / drug free inside plant ਕਾਰਯਾਨਾ ਸੇਂ ਯਾਰਾਯ ਯਾ ਨਸ਼ੇ ਕਾ ਸੇਵਨ ਨ ਕਰੋ। ਕਾਰਯਾਨੋਂ ਵਿਚ ਸ਼ਰਾਬ ਜਾ ਨਸ਼ੇ ਚਾ ਸੇਵਨ ਨਾ ਕਰੋ।</p> <p>Rule No. 7 Always Wear Personal Protective Equipment (PPE) ਸਦੇਯ ਚਪਕਰਾਯ ਵਿਯਕਿਯਗਤ ਸੁਰਕਾ ਚਪਕਰਾਯ ਪਹਨੋ ਚਮੇਲਾ ਵਿਅਕਤੀਗਤ ਸੁਰੱਖਿਆ ਉਪਕਰਨ ਪਹਿਨੋ।</p> <p>Rule No. 8 Follow Standard Operating Procedure (SOP) ਯੋਯੋਗਤ ਯਾਨਕ ਕਾਰਯੋਂ ਖਰਾਯੀ ਕਾ ਯਾਲਨ ਕਰੋ। ਚਮੇਲਾ ਉਪਰੋਕਤ ਮੁਯਦੇਯ ਪੁਟਾਈ ਦੀ ਪਾਲਣਾ ਕਰੋ।</p>
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7. Emergency Drills (Mock Drills)

Business Partners shall participate in emergency response drills to test the effectiveness of its emergency procedures and equipments and the knowledge and proficiency of its Personnel.

8. Material Safety Data Sheet (MSDS)

The Business Partners shall maintain, Material Safety Data Sheets for all hazardous materials and products taken onto the job site. Products are stored in appropriate containers clearly labelled Prior to sending to site, all hazard substances are risk assessed to determine their safety requirements and suitability for use.

9. Business Partners Accommodation

Where the Business Partner's Personnel provides accommodation for contract workers, the accommodation shall be appropriate for its location and be clean, safe and, at a minimum, meet the basic needs of workers. In particular, the provision of accommodation shall meet national legislation and shall have the following as minimum:

- provision of sanitary, laundry and cooking facilities and potable water
- safe location wrt health, hygiene, fire risks and security.
- provision of first aid, medical facilities and proper ventilation.
- The business partner accommodation shall meet the provisions of the regulatory requirements.
- building material shall be suitably inflammable, have fire extinguishers fitted and include other safety checks to prevent fire.

10. A Guide to Toolbox Talks

Introduction

Toolbox talks are safety discussions aimed at the Operation, Maintenance & Construction trades. The discussions are intended to educate workers about creating and maintaining safer work conditions.

There are several facets to successful and useful toolbox talks. As a general rule, the talks are short and they are kept interesting and relevant. The goal is to empower employees so that they can recognize, avoid, report, and correct HSE hazards.

Conducting a Toolbox Talk

- Toolbox Talks to be conducted before starting of the job/work/task.
- Choose a topic that is relevant to your audience; one that will create a discussion; a two-way communication; use either your own topic, or one generated from the Toolbox talk program.
- It does not have to be an office; a canteen or workshop area or a work distribution area will suffice.
- The ideal audience would be between 4 and 10 members but larger audiences, on site sometimes may be the only solution.
- Duration should be limited from 10 to 15 minutes, do not get side-tracked on other peripheral issues.
- Use a questioning approach, get the message across and listen to responses.
- Toolbox talks are not lectures and are designed to get people to think and talk about HSE issues.
- Typical prompts / questions may be:
 - What do you as a group think the benefits are from this type of discussion?
 - What are the hazards from the incident described and what are the learning points.
- Try to generate interest in the topic with the questions you ask - Highlight some key words to remind you of the points to bring up.
- Avoid just reading the topic - take the topic and try to build up the discussion point by point.
- Try to be a good listener.
- Obtain signatures from participants to confirm attendance and keep record of points discussed & agreed.

TOOL BOX TALK CONTENT

S. No	ACTIVITY	PPE REQUIREMENT	TOOL BOX TALK POINTS
1	WORK AT HEIGHT	1. Safety Helmet with chin strap	1. Why Full Body Harness
		2. Safety Shoes	2. How to Check Harness
		3. Full Body harness	3. How to use Harness
			4. How to use life-line
			5. Anchoring while going up and coming down
			6. Anchoring at Platform
			7. During Rain, Do not Run / Rush
			8. Check Tag (Red -Do not Use Green- Safe for Use)
			9. Do not use Mobile Phone while working at height.
			10. No worker working under the platform
2	SCAFFOLD AND LADDER	1. Safety Helmet with chin strap	1. Check the evenness of surface.
		2. Safety Shoes	2. Check Sole Plate
		3. Full Body harness	3. Check base plate
		4. PVC Hand gloves	4. Check horizontal and Vertical alignment
			5. Check quality of coupler, lock pin.
			6. Coupler pin to be locked.
			7. Provide toe guard, midrail and guardrail
			8. Ensure no gap between two jalie.
			9. Do not tie midrail and guardrail of scaffold with wire, use only clamp.
			10. Check that jalie are tight with binding wire.
			11. Above 4 meter height tie scaffold with supporting structure or provide ground support.
			12. Provide Red tag for incomplete scaffold and Green tag for fit to use scaffold & Yellow tag for scaffolding erection & Dismantling time.
			13. No rung shall be missing in Ladder.
			14. Maintain 75 degree angle for ladder.
			15. Three point contact is must while ascending and descending on ladder.

			16. The ladder should rest upon 0.9 meters above the landing surface.
			1 7 Always keep your face towards ladder not in opposite side.
			1 Always provide the ladder with firm support 8 and tie it up with the clamp.
			1 Check minimum two jally for working 9 platform & one jally for landing
3	WELDING & GAS CUTTING	1. Welding Face Shield	1. Ensure that Helper also should have Goggles.
		2. Leather Apron	Check the condition of welding 2. cables, connecting lugs and crocodile clip.
		4. Leather Hand Gloves	Check body earthing and cable earthing. 3. Negative should be near to the structure in which welding is being done.
		5. Cutting goggles(Black)	4. Don't use rod to tie the earthing cable.
		6. Safety Helmet	Remove the welding rod before putting the 5. holder on ground.
		7. Safety shoe	6. Ensure that hot work area is barricaded.
		8. Full body harness	7. Use Fire blanket wherever applicable.
		9. Leg guard & Arm guard	Check Flash back arrestor, Pressure gauges, 8. hose pipe, torch.
		10. Welding mask	9. Welding cable and gas cutting cable should not be routed together.
			1 Always keep cylinders in upright positon 0 and tie it.
			1 1 Use trolley for shifting the cylinders.
			1 Fire Extinguisher should be available near 2 hot work area.
			1 3 Know about use of fire extinguisher

	<ul style="list-style-type: none"> 1 Place Empty & full cylinder at a designated 4 location . & tie with chain.
	<ul style="list-style-type: none"> 1 No combustible materials within 12 5 Meter radius of Hot work .
	<ul style="list-style-type: none"> 1 Ensure that the welding cable conductors 6 are . of

			copper only.
4	EXCAVATION	1. Safety Helmet with chin strap	1. Check the access and egress.
		2. Safety Shoes / Gum Boot	2. Only enter from designated area.
		3. Rubber & Cotton hand gloves	3. Always keep loose soil 1.5 meter away from excavated edge.
		4. Dust mask	4. Don't jump into the pit. Use Ladder / ramp for safe access
			5. Provide handrail & mid rail around excavated area and Tie them with clamp.
			6. Observe the Signage.
			Heavy equipment to be kept minimum 2 7. meter away from excavated area.
			Slope to be provided while digging. If 8. not feasible always provide step cutting / shoring.
			9. Don't put your body weight on hand railing.
			10. Inspect ladder / ramp / handrail after rain.
			11. Use hand rail for access & egress (Ramp)
			12. Ensure adequate Illumination around the excavated area.
5	LIFTING	1. Safety Helmet with chin strap	1. Check Lifting equipment and accessories are certified by Third party.
		2. Safety Shoes	2. Safe Working load (SWL) is to be displayed on particular equipment which you are using and don't lift any material more than the SWL capacity.
		3. Leather hand gloves	Lifting equipment and accessories must only 3. be used for the purpose for which they were designed.
			4. Provide Signage and barricade the area to avoid unauthorized entry.
			Banks men / Signal must be available while 5. lifting any material.
			6. Ensure all loads are stable and secure.
			7. In case of poor weather condition, stop lifting.
			8. Never stand under a suspended load and swing area.

	Lifted Load should be tight with guide rope on 9. both sides.
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			10. Check wire rope slings, belt, D-shackles, Eye bolt , Limit switch, safety latch, Reverse horns, light, view mirror, tyre pressure, leakage of any oils.
			15. Ensure speed of the crane / hydra 10 KM/H without load.
			16. Maintain a height of 300 MM from the ground while shifting the material.
6	ELECTRICITY	1. Safety Helmet with chin strap	1. All electrical supply should be through 30 mA ELCB.

11. General Awareness

11.1. Permit to work system

A Permit-to-Work system is an extension of a safe system of work or method statement and requires written permission before a particular job can commence. A written Permit-to-Work system is essentially a document which identifies the plant to be worked on or area to be worked in and details the precautions to be taken before work can commence. It highlights the safe procedure and is a clear record of the hazards that have been anticipated and the precautions to be taken to avoid them.

An essential part of a Permit-to-Work system is the formal recording by those in charge that the precautions have been taken and it is safe for the work to proceed. Frequent checks should be made to ensure that the required safety measures are being closely adhered to. The work permit shall be displayed at the site of the work at all times.

Permits-to-Work in use at our sites are as follows:

- Working at Height
- Confined spaces
- Hot work
- Excavation
- Isolation & Lockout

If above jobs are involved in a Permit-to-Work system, make sure the requirements of the Permit are clear and strictly followed, copies of Permit-to-Work systems are available with respective departments and site supervisors.

Permit To Work system in project construction jobs shall be maintained by main contractor for all their sub-contractors for above jobs. Permit To Work in project construction works shall have the validity of one week and shall be extended by the issuing authority of permit weekly once after assessing the site condition & other conditions as applicable.

Wherever the interface/ retrofitting jobs are required with running plant/ system/ equipment, the project contractor shall approach TSPL Control Room for obtaining Permit To Work along with work procedure & JSA as applicable

11.2. Machine guarding

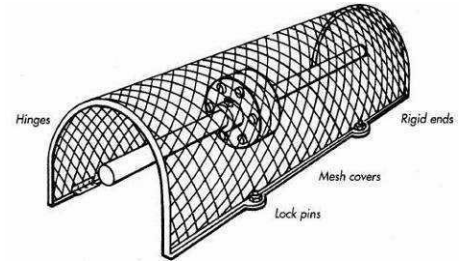
Site plant and equipment comes in many forms. It can be static or mobile, and can range from dumper trucks to welding sets. Whilst all such plant is beneficial for work if used correctly, it can pose a hazard if used incorrectly, and misuse can result in serious injuries.

- Guards are installed to protect operators and others in the area from injury. Yet some operators continually find ways of putting themselves in danger by removing machine guards or tampering with interlocks so they can operate the machines faster.
- Often it is necessary to remove a guard to service or adjust a machine, a tool or a piece of equipment. When doing this, be sure the power is turned off and the switch is locked out or tagged out.
- When the service job is completed, make sure the guard is replaced securely and is working properly.
- Breakdowns, jammed work and broken parts sometimes cause us to forget ordinary safety procedures.
- Very often, to remedy these conditions it is necessary to get into out-of-the-way places.
- Extreme caution is needed, because in some cases the location of the trouble cannot be guarded.
- So be sure that basic and added precautions are taken to avoid any movement of the parts.

To prevent accidents, be careful around:

- Meshing gears
- In-running rollers
- Reciprocating parts
- Chain and sprocket drives
- Cams and rollers

- Belts and pulleys
- Flywheels
- Cutting or abrasive surfaces
- Cooling fans
- Conveyor equipment
- Rotating couplings and shafts
- Hot or overheated parts
- Worm gears



If you see piece of equipment without a guard, or any other unsafe condition, report it to your supervisor immediately, whether the equipment is in your work area or not.

11.3. Hand tools

Misuse and poor maintenance of hand tools result in countless injuries every year. Whilst many may be considered “minor” – all are avoidable by complying with relatively simple procedures.

- Only ever use the right tool for the job.
- Maintain all tools in a serviceable condition – if unserviceable either repair or replace
- Control/protect tools with obvious risks (Stanley knives, etc).
- Use correct size spanners/sockets for nuts – if using adjustable, be extra cautious as these are more prone to slipping.
- Always keep hands behind cutting edges when working.
- Grind down mushroomed heads of chisels, punches, etc to prevent splinters flying off.
- Do not use screwdrivers as chisels – handles splinter.
- Replace split or damaged wooden handles – do not tape or wire up.
- Regularly check hammer heads, etc for security of fixings.
- All files should be fitted with suitable wooden handles.
- Where necessary use specialist tools (insulated screwdrivers on live electrics).
- Protect sharp edges/points of tools.
- Keep tools in toolboxes or racks when not in use.
- Where applicable ensure suitable PPE is worn (eye protection, gloves, etc).



11.4. Storage of Flammable Material

Many of the materials, liquids and substances which we use on sites are highly flammable, e.g. solvents, diesel, AFR, paints and thinners, etc. These types of materials must be kept in secure containers.

- Containers used for flammable liquids should be clearly marked "**HIGHLY FLAMMABLE**".
- Any empty containers should be marked "**EMPTY**" and stored apart from the full containers.
- Small containers carrying highly flammable liquids should be stored in fire resistant cabinets or bins.

- Gas cylinders should be stored in the open air, out of direct sunlight and away from any sources of ignition.
- The cylinders should be stored in the upright position at all times.
- Any empty cylinders should be marked "**EMPTY**" and stored apart from the full cylinders.
- A sufficient number of dry powder extinguishers should be placed around the storage area.

Where the cylinder cannot be stored in the open air, they should be kept in a storeroom which is constructed of non-combustible materials and is adequately ventilated. This storeroom should not be used for any other purpose than for the storage of acetylene cylinders.

Smoking is **NOT** permitted in storage areas where flammable liquids and materials are

kept. Flammable or explosive liquids must not be discharged into drains.

MSDS-Material Safety Data sheets shall also be displayed in the vicinity for the information of people.

KILL FIRE BEFORE IT KILLS YOU



11.5. Gas Cylinder Storage & Handling

Compressed gases, are used extensively on our sites and provide a valuable source of energy. Misuse, however, can result in fires, serious accidents and injuries.

Important points:

- Treat all cylinders as full.
- Regularly inspect hoses, cylinders and valves for damage and wear and tear.
- The likes of Oxy/Acetylene cylinders should only be used by competent persons.
- Keep cylinders away from the sun, artificial heat, flammable materials, corrosive chemicals, etc.
- Do not smoke in vicinity.
- If a cylinder catches fire, then call the fire brigade. Cool the cylinder with water spray only, if safe to do so.
- Always have fire extinguishers located within reasonable proximity to any hot work being carried out. Use hot work permits if appropriate.
- Ensure everyone knows fire procedures including alarm signal, evacuation routes, assembly area, and correct use of fire extinguishers (including types!)
- Avoid damage to cylinder valves and fittings. Don't use them as carrying aids.
- Open valves slowly and close sufficiently to cut off gas supply – do not use excessive force.
- Always secure acetylene cylinders in upright position.
- Ensure all cylinders are stored so that they cannot fall or roll.

- Consider manual handling of cylinders – they are heavy! Use a trolley for full size cylinders or get assistance.
- Always unload cylinders from lorries, vans, etc, by lifting – not by dropping/sliding.
- Transport cylinders in vehicles with good ventilation – ensure relevant signs (compressed gases) are clearly displayed on vehicles.

1.6. Housekeeping

Tidiness is one of the foundation stones of safety and good environmental practice. Many accidents are caused through people tripping, slipping and falling over materials and equipment which should not have been left lying around. A great deal of environmental problems could be avoided if materials were disposed of properly instead of being allowed to escape into the surrounding area.

This is an area where everyone on site can make a significant contribution to safety and the environment, merely by applying common sense.

- Do not leave rubbish lying about - clean up as you go.
- Ensure all waste is disposed of in the correct bin.
- Ensure all scraps generated from construction jobs, packing materials etc are accumulated in designated area by daily housekeeping.
- Ensure all scraps generated in construction jobs, packing materials etc., are periodically segregated, weighed at TSPL weigh bridge and handed over to scrap yard of TSPL on periodic basis (15 days once frequency) as per scrap policy of TSPL .
- Do not obstruct gangways, aisles or stairways with tools or materials.
- Make sure that spilled oil, grease or liquids are cleaned up from floors and the contaminated clean up material is disposed of in the correct bins.
- Gather up all off-cuts of timber, reinforcing bars, and any other material, and dispose of in the correct bins.
- When clearing up, make sure the refuse disposal point is in a safe position and all waste containers are clearly marked for their contents.
- Position all cables and hoses out of the way. Where possible do not lay them across a pedestrian walkway
- Look out for sparks and hot slag falling from welding, cutting and other hot work.
- Dispose of oil rags in metal containers.
- An accumulation of waste material provides a good starting point for fire. Do not let it happen.
- Ensure the waste disposal area is kept tidy and containers are removed in adequate time to prevent spillage.

11.7. Dust and Fumes

Exposure to dust and fumes should be prevented where practicable, and must at least be controlled. Breathing in dust and fumes can have both acute and chronic effects, and can cause long-term health problems.

- Dusts arise from cutting, sanding and grinding operations, and can also be found when working with old lead pipes (lead oxide dust) or stripping out fibrous insulation (a prime, and very dangerous example being asbestos).
- Fumes arise from a wider source of origins including welding operations, use of hazardous substances, heating metals such as lead, burning off old paints, etc.
- The effects vary greatly, but examples of potential hazards include lung disease from silica dust as a result of cutting concrete, cancer from cutting/sanding hardwood dust, metal fume fever from welding fumes, and lung cancer/asbestosis from exposure to asbestos, to name but a few.
- Where practicable, plan operations/tasks to eliminate exposure to dust and fumes.
- Where elimination is not practicable, then exposure to dusts and fumes must be controlled.
- Use tools with dust extraction systems if possible.
- Consider the use of portable extraction equipment.
- Consider use of local exhaust ventilation where practicable.
- As a last resort use personal protective equipment/respiratory protective equipment.
- Ensure it is suitable and that you know how to use it properly, and how to maintain it.
- Always remember other workers in the area – they may also require protection.



11.8. Fire Safety

Fire is a major risk both to persons and to property. You can either help prevent fires, or you can help start/allow them.

Always:

- Ensure you are aware of the fire drill including the means of raising the alarm, escape routes, and the assembly point.
- Ensure you know where the nearest fire point is, what types of fire extinguisher are there, what types of fire they can be used on, and how they should be used (never put yourself at risk!)
- Never obstruct any fire points, fire doors or escape routes.
- Never misuse or tamper with anything provided for fire prevention or fighting (never discharge fire extinguishers during horseplay).
- Don't hang clothing/materials over or near heating equipment.
- Control rubbish – don't let paper, rags, etc, accumulate.
- Store flammable liquids in suitable containers – well away from any sources of ignition, keeps lids on containers when not in use.
- Control smoking – use designated areas if necessary.
- Don't overload electrical sockets – one plug per socket!
- If electrical equipment is not in use then switch off at the mains
- Bitumen boilers, soldering irons, etc., must be placed on non-combustible stands.
- Carry out residual heat checks 30-60 minutes after any hot work has been carried out.
- Always have a fire extinguisher within arms reach when carrying out hot work.
- Obtain hot working permits where applicable.



11.9. Near miss Reporting

A Near Miss is an unplanned event that did not result in injury, illness, damage or product loss - but had the potential to do so. The difference between a near miss and an incident is often a fraction of a second or a fraction of an inch that may not be there the next time. Near misses are warnings of accidents in the making. By accepting these warnings and looking for their causes, we can prevent these situations recurring.

11.10. The reason for Reporting

- The prevention and elimination of accidents can only be progressed by reporting the near misses as they occur.
- If the near misses are not reported, then no incident investigations will be carried out and none of the problems and warnings will be spotted. As a result, any learning points found cannot be communicated to others, who will therefore still be "at risk".
- A near miss can be considered as an indication that something is wrong, maybe with the system of work and it is important that everyone is "warned" by each near miss that occurs so that standards can be improved.

11.11. Accident Reporting

It is a basic requirement for any management system that a corrective action system is in place in order to ensure lessons are learned from any incidents or hazards found, and then correct identified deficiencies, and realize any identified opportunity for improvement

All the incidents irrespective of their nature / magnitude should be verbally reported immediately by the injured or a person closely associated with the event to the supervisor and/ or Occupational Health Centre, based on the nature of the injury.

For project jobs, EPC contractor shall ensure adequate ambulances facility at round the clock basis at site.

When calling for ambulance the following information shall be given:

- The exact location of the injured person
- Details about accident i.e. gas poisoning, bleeding, burn injury, fractures etc.
- Number of persons affected.

If the concerned Supervisor is not available at the incident site, the witness to the incident shall then inform the Shift In-charge / concerned HOD about the incident.

11.12. Working at Height

11.12.1. Fall Prevention & Protection

What is Fall Prevention?

- The use of physical barrier/s which prevent people from falling.
- A device which prevents a person from being exposed to an open edge, hence preventing them from falling.

Example: Elevated work platforms, scaffolds With proper railings, ladders – fixed & mobile, Man cage, safety belt which prevents person from reaching the fall zone



What is Fall Protection?

- It's a device or combination of devices used to arrest a person during a fall
- Devices/Equipment that can stop a fall in progress

Example: Safety harness, lanyard, Self retractable reel, anchor points, safety nets, etc.



11.12.2. Full Body Harness

Self-Inspection before use

- Check labels to verify number and clearly legible.
- Check webbing and stitching - by flexing to easily highlight cuts, frays, pulled or broken threads, signs of abrasion, excessive wear, altered or missing parts, burns, heat and chemical exposures
- Check metallic components - D-ring, buckles, Karabiners for signs of deformation, fractures, cracks,



corrosion, deep pitting, burrs, sharp edges, cuts, deep nicks, missing or loose parts and improper function.

- Check plastic components - back D-ring locator, chest strap guide, broken or excessively worn parts, loose parts, inspect for signs of burns and
- excessive heat and chemical exposures
- Repeat the above for lanyards, and any knots that may not
- have been intended by the manufacturer

IF AFTER INSPECTION YOU HAVE ANY DOUBTS SEEK ASSISTANT FROM A COMPETENT PERSON



11.12.3. Wearing the Harness

- Hold the harness by the back D-ring. Shake the harness to allow all straps to fall in place.
- If chest, leg, and/or waist straps are buckled, release the straps and unbuckle. If chest, leg, and/or waist straps are buckled, release the straps and unbuckle
- Slip the straps over shoulders so the D-ring is located in middle of the back between shoulder blades
- Pull the leg strap between legs and connect to the opposite end. Repeat with the second leg strap. If belted harness, connect the waist strap after the leg straps. The waist strap should be tight, but not binding.
- Connect the chest strap and position in the mid-chest area. Tighten to keep the shoulder straps taut.
- After all straps have been buckled, tighten all buckles so the harness fits snugly but allows full range of movement. Pass excess strap through loop keepers,



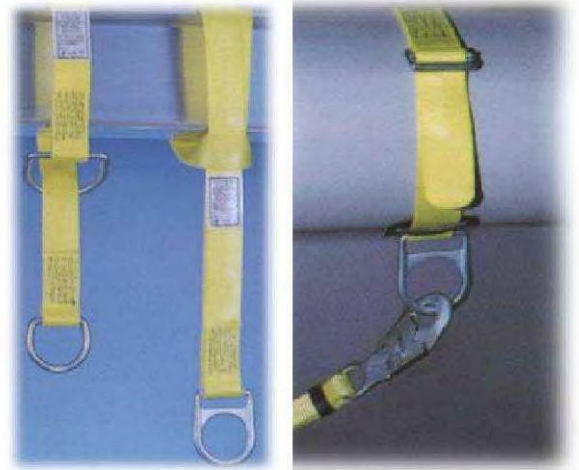
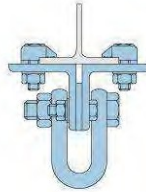
11.12.4. Anchorage Points

Any fall protection system is only as good as its anchor point. All personal fall protection system requires connection to an anchor point. It is essential that all anchor points have an adequate margin of strength and stability to withstand the dynamic and static forces that can be applied to them in service.

An anchorage point is the securing point to a structure to which the fall arrest device or lanyard is attached. Anchor points must be able to withstand a force of 15kN

Some of the common anchor points are as follows:

- Purpose built anchor points
- Fully welded eye plates
- Steel structures of plant
- Girders, beams cleats



Some of the unsuitable anchor points are as follows:

- Plant fixtures-Pipe hangers
- Guardrails/ handrails
- Light gauge steel
- Sheet metal cladding
- Instrument lines
- Cable trays
- Water and other pipelines

All anchor points should be identified and certified by a qualified engineer. Only such identified anchor points should be used for anchoring.

Always use proper equipment for anchoring.

Questions:

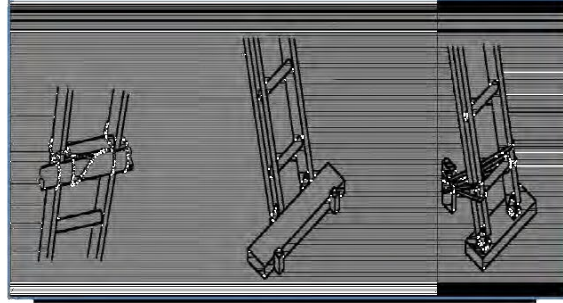
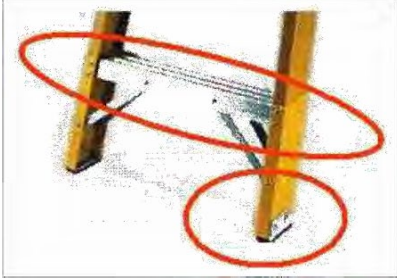
1. Give example of some points that can be used to anchor a full body harness?

11.12.5. Ladders

Work may only be carried out from a ladder when the job is of short duration and can be done safely.

- Never overreach at the working position.
- Before using a ladder, inspect it to see that it is not damaged.
- Check for splits or cracks in the stiles and rungs.
- See that none of the rungs are missing or loose.
- Only industry standard ladders must be used.
- Check to ensure it has been placed the correct way up.
- Never attempt to repair damaged ladders.
- Ladders should be set on a firm base, resting at an angle which is not too steep and not too flat. Rule of thumb 1 out for 4 up.

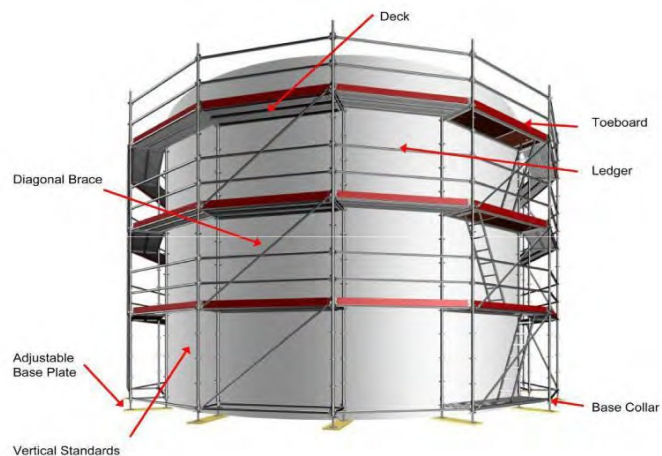
- If the ladder must be tied at the top & fixed at bottom.
- Don't drop ladders.
- Ensure your footwear is free from excessive mud or grease before you climb the ladder.



11.12.6. Scaffoldings

There are many different types of scaffolding in use today. All scaffolds have the same basic rules:-

- Check that the platform is fully boarded out.
- Check that all necessary guard-rails are fitted.
- Check that all toe boards are fitted and in position.
- Check that all brick guards are in place.
- Check that the ladder provides suitable access and is tied to the scaffold.
- Check the scaffold has been erected on a sound base and that base plates and sole boards have been used.
- Use a scaffold only after it has been certified safe to use by a qualified person..
- If you find that a scaffold is unsafe report the faults to your supervisor so he can have them put right.
- Do not overload platforms with materials and keep platforms clear of debris.
- Alterations to scaffolds must only be carried out by persons who are competent to do so.
- At the end of the day remove access ladders or board them out to prevent children from playing on them. (this is in addition to site fencing)
- Always use appropriate “Scaftag” while building and use of scaffolds



11.13. Hot Work

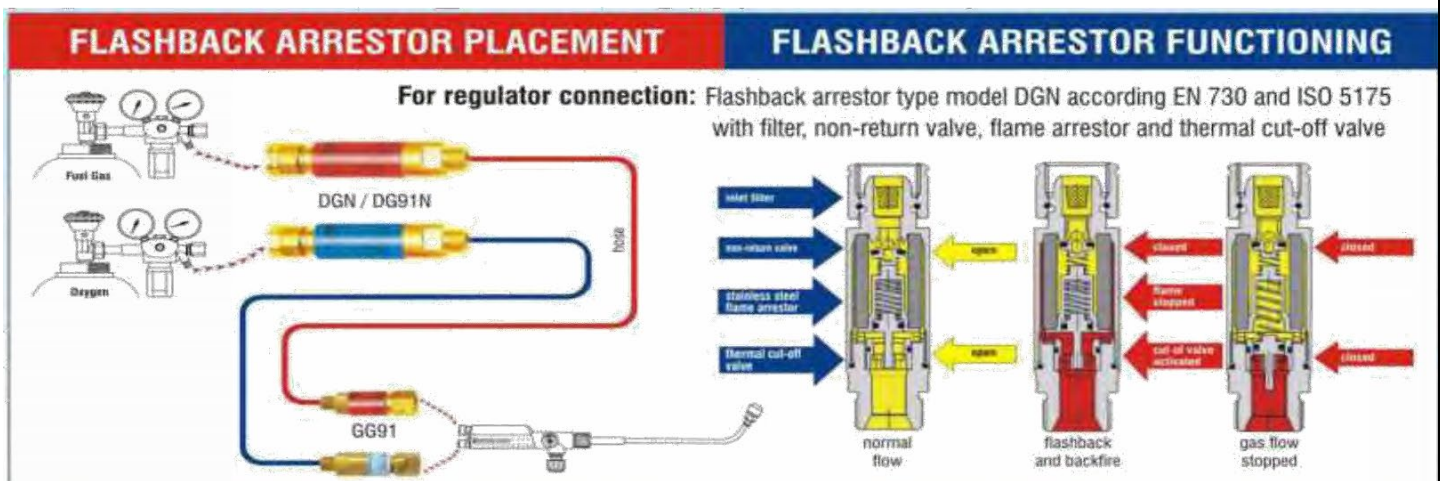
Work which is performed outside a designated hot work area and may introduce a source of ignition into the area is known as Hot work. Examples are welding (arc or gas), gas cutting, plasma cutting, grinding etc. Welding is the fusion of two pieces of metal by heat. The two most commonly used in industry are:-

- Gas cutting.
- Electric Arc Welding.

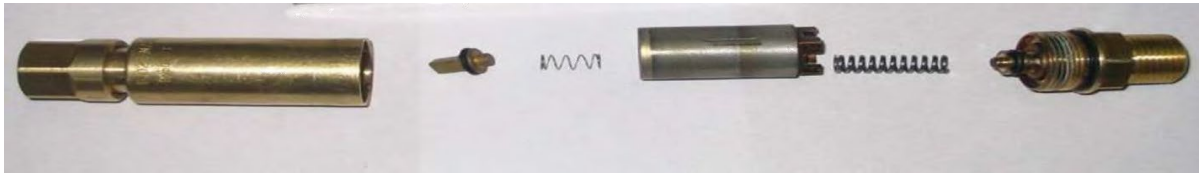
11.13.1. Gas cutting:

The main components associated with gas cutting system are Oxygen and Acetylene cylinders, regulators, gas pipes, flashback arrester, torch PPE's Main hazards associated with gas cutting operation are:-

- Compressed gas cylinders pose a fire and explosive risk.
- Burns to eyes and skin due to hot surfaces and molten lead.
- Exposure to fumes - respiratory disorders e.g. cutting metalwork covered with lead paint.
- Molten metal spatter
- **Leakage of gas**



FLASH BACK ARRESTOR PART ASSEMBLY



NRV PART ASSEMBLY



11.13.2. Precautions

- Ensure only the minimum number of cylinders are stored on site as are required .
- Ensure flash back arrestors are fitted at cylinder gauge ends and non-return valves at inlets to the blowpipe, ensure valves are closed prior to moving.
- Cylinders must be stored securely in upright position.
- Clear combustable materials from area.
- Keep fire extinguisher close to the working area.
- Wear appropriate protective equipment o Eye Protection
 - o Gloves
 - o Overalls
 - o Boots / spats
 - o Respiratory if working in poorly ventilated area
- Screen areas of electric arc welding to prevent exposure of cutting flame to other s
- Do not leave trailing hoses on the floor creating tripping hazards.



11.13.3. Electric Arc Welding:

The components associate with electric arc welding are welding machine, cables, cable connections, welding electrode holder, welding electrodes and PPE's

Main hazards associated with electric arc welding are:-

- The primary risk from electric arc welding is electric shock – check insulation, earthing, equipment condition and protective devices.
- Fire.
- Burns to eyes and skin due to molten metal and ultra violet
- Exposure to fumes - respiratory disorders e.g. metal
- fume fever welding galvanised steel or steel containing zinc



The following points should be looked into before start of any work

- Only trained operatives can undertake welding operations.
- Welding operations will always require the wearing of suitable personal protective equipment.
- Fire is an ever present risk when welding and suitable precautions must be taken.
- Infra red rays, visible light rays and ultra violet radiation are hazardous to the eyes and skin. Wear suitable skin and eye protection (basic eye protection will always be required, and normally filter protection will be required).
- Consider the risks to other employees and provide suitable protection/procedures such as confining welding to specific areas, use of welding screens, etc.
- Wear suitable clothing that covers bare skin and is flame resistant.
- Welding produces fumes and gases that can harm the respiratory system (some fumes from lead or toxic coated materials can also affect the rest of the body) – wear filtered respirators for low volume work.
- Permanent welding locations should have local exhaust ventilation fitted.
- Have CO2 or dry powder fire extinguishers at hand, check areas where welding operations have been undertaken at least 30 minutes after work has been completed for any residual fire risks.

11.14. Confined Spaces

11.14.1. Working in confined spaces

A “confined space” is an enclosed or partially enclosed space which:

- is at atmospheric pressure during occupancy;
- is not intended or designed primarily as a place of work; and
- is liable, at any time, to:
 - o have an atmosphere which contains potentially harmful levels of toxic substances/contaminants;
 - o have an oxygen deficiency or an excess;
 - o cause a person to be engulfed/buried by a material; and/or could have restricted means of entry and exit.

Many accidents would have been avoided if supervising staff and operatives had been properly trained and the work carried out on a Permit-to-Work system. People engaged on such operations must be physically and mentally suitable and properly trained for the job. The following checklist is a reminder:-

- Dangerous atmospheres can arise when there is a lack of oxygen or when toxic or flammable gases are present.
- In no circumstances should you enter a confined space (trench, manhole, tank, bored pile, foul sewer) without instructions from the supervisor.
- Equipment for testing the atmosphere before you enter and at regular intervals must be provided and used by a competent person. You must not enter the confined space until he is satisfied that entry is safe. Testing must continue while you are working inside, and you must leave immediately if told to do so.
- Adequate fresh air ventilation must be provided in appropriate circumstances.
- All necessary safety and rescue equipment must be available on site at the actual location.
- Make sure that you have been trained in the use of the safety and rescue equipment by a competent person.
- Wear the protective clothing provided.
- Do not eat, drink or smoke in a confined space.
- Never work alone in a confined space.
- Don't attempt a rescue without first sounding the alarm.

11.15. Hazardous environments:

Exposure to dust and fumes should be prevented where practicable, and must at least be controlled. Breathing in dust and fumes can have both acute and chronic effects, and can cause long-term health problems.

Important points:

- Dusts arise from cutting, sanding and grinding operations, and can also be found when working with old lead pipes (lead oxide dust) or stripping out fibrous insulation (a prime, and very dangerous example being asbestos).
- Fumes arise from a wider source of origins including welding operations, use of hazardous substances, heating metals such as lead, burning off old paints, etc.
- The effects vary greatly, but examples of potential hazards include lung disease from silica dust as a result of cutting/scabbling concrete, cancer from cutting/sanding hardwood dust, metal fume fever from welding fumes, and lung cancer/asbestosis from exposure to asbestos, to name but a few.
- Where practicable, plan operations/tasks to eliminate exposure to dust and fumes.
- Where elimination is not practicable, then exposure to dusts and fumes must be controlled.
- Use tools with dust extraction systems if possible.
- Consider the use of portable extraction equipment.
- Consider use of local exhaust ventilation where practicable.
- As a last resort use personal protective equipment/respiratory protective equipment.
- Ensure it is suitable and that you know how to use it properly, and how to maintain it.
- Always remember other workers in the area – they may also require protection.

11.15.1. Personal Protective Equipment

11.15.1.1. Head protection

The head is particularly vulnerable to injury and accidents to the head are often fatal, or involve very serious injuries, such as brain damage or fractured skull.

Over the years it has been proved beyond doubt that many deaths and head injuries could have been prevented, or their severity reduced, by wearing safety helmets.

Under the Construction Head Protection Regulations 1989 hard hats must be worn by all persons on building and construction sites with the exception of turban wearing Sikhs



When wearing a hard hat always check the following points:-

- Adjust the headband to suit your head size.
- Check that the outer shell and harness is in good condition, without indentation or cracks.
- Never paint the shell as some paints weaken the plastics used.
- Use a chin-strap where necessary to avoid the possibility of the safety helmet falling off. This applies particularly to steel erectors.
- Do not punch holes into the shell for attaching unauthorized equipment or for ventilation. Attachments for ear defenders or eye protection are available and should only be used in accordance with the manufacturer's instructions.
- Replace any helmet if it sustains a heavy impact, as the shell may be weakened.
- Helmets must be in good condition and replaced according to the manufacturer's guidelines. This is

usually every two years.

11.15.1.2. Eye protection

Eye protection must be worn by you where there is a risk of injury to the eyes.

Examples of work activities requiring eye protection are as follows:-

- Cutting bricks or block with anything i.e. when using bolster hammer and cold chisel or cutting-off wheel.
- The use of a cartridge fixing tool.
- The use of an abrasive wheel.
- Striking of masonry nails.
- The use of compressed air to blow swarf, dust or dirt from an area (formwork would come into this category).
- Drilling, cutting or breaking metal or concrete.
- Welding or cutting steelwork.
- Handling, spraying or brushing any substance which, if splashed into the eyes, will cause injuries.



In your own interest, make sure you wear protective goggles or glasses when instructed to do so.

The eye protection that is provided must be suitable for you and must be replaced immediately if lost or damaged. You must take care of the eye protectors given to you.

11.15.1.3. Respiratory protection

It is sometimes necessary to work in atmospheres in which hazardous dust or fumes are present. Ideally, the contaminant should be controlled at source to minimize the hazard, but this is not always possible so safety equipment will be provided by your employer for your protection.



- Respiratory protective equipment (respirators or breathing apparatus) should be selected to prevent the wearer from breathing dangerous levels of dust, gas or vapour or to provide oxygen.
- A respirator suitable for use in one set of circumstances may be useless in another, so proper selection is essential if wearers are to receive adequate protection.
- A respirator which gives perfect protection against a dangerous fume will be useless if there is a lack of oxygen.
- All equipment, with the exception of disposable types, requires cleaning, disinfecting and inspection after use and before wearing by another person.
- Cartridges and filters have a limited life, which can vary depending upon the environment in which they are used.
- Manufacturers' recommendations should be closely followed.
- Equipment must be properly stored when not in use.
- Training in the use and application of respiratory protective equipment is essential for all types of equipment, and it should only be worn by persons who are thoroughly familiar with it and know the procedure to adopt in case of emergency.

11.15.1.4. Hand protection

Hands and fingers are injured more often than other parts of the body. This is because of two reasons:-

- Hands and fingers are required for most work activities.
- Hands and fingers are vulnerable to crush and cut type injuries as well as exposure to harmful materials used at work and exposure to vibration and repetitive strain injuries.

Injuries to hands and fingers can be caused by one or more of the following:-

Severed fingers or hands due to rotating machines such as saws, cutting

wheels. Advice: Ensure guards are in place and operating. Use push sticks on saw benches.

**Crush injuries due to incorrect use of tools such as hammers.
Contact with in-running nip points on machinery.**

Advice: Tools and equipment must be maintained. Defective equipment such as cold chisels with mushroom shaped ends must be replaced / repaired. In-running nip points such as chain and sprocket transmission must be guarded.

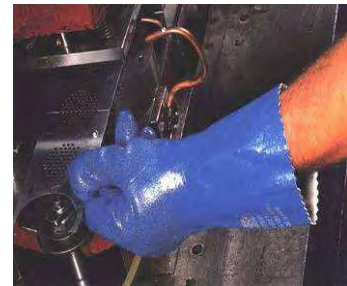


Skin allergies such as dermatitis due to handling harmful materials such as oil.

Advice: Avoid skin contact. Wear suitable gloves if necessary. Wash and dry hands to remove any substance from the skin.

Exposure to vibration.

Advice Avoid manual process if possible, organise work to include breaks reduce exposure time, share work load, wear anti vibration gloves.



Exposure to repetitive work.

Advice Avoid manual process if possible, organise work station to minimise strain, allow for breaks, plan workload, share work activities.

11.15.1.5. Hearing protection

Noise induced hearing loss is the most common occupational health hazard, and it is incurable. Once you're deaf, you stay deaf. Some of the reasons are as follows:

- Compressors, concrete mixers, circular saws, breakers, etc, can all damage your hearing.
- You do not have to be using noisy equipment to be affected by it, just be in the vicinity.
- If you have to shout to be heard then the noise level can be regarded as high enough to warrant the wearing of ear protection.

What do you need to do?

- Wear ear protection at all times when exposed to a noise hazard (obey noise hazard warning signs).
- Wear proper ear protection and wear it properly (ie cotton wool is no good for ear protection and ear muffs are no good worn over a balaclava).
- If ear plugs are used ensure they are a good fit, are fitted properly, and are kept clean.
- Use disposable ear plugs only the once.
- Keep reusable ear plugs clean.
- Ear muffs must be a good fit, particularly where the seal fits the head, and must be worn the correct way around.
- Ensure hands are clean when handling all types of ear protection, and store ear protection in a clean environment.
- Do not alter pressure of ear defenders by bending the band.
- Report any damaged, lost or unserviceable ear protection immediately.
- Consider options for reducing noise in the workplace, ie turn off unused machinery, keep cement mixer and compressor covers closed, ensure air lines do not leak, fit mufflers to tools where applicable, move noise source away, shield noise source, etc.



11.15.1.6. Foot protection

Two main causes of foot injuries are:-

- Treading on sharp objects, such as nails, which pierce the soles of the foot.
- Objects dropping causing crush injuries.
- Both types of injury can be minimized by the use of proper safety footwear.
- Safety boots, shoes and trainers are available which have Steel toe caps.
- Some also have spring steel plates in their soles.
- Safety footwear of this type, made of leather or rubber, should always be worn on sites.
- Avoid borrowing footwear – Footwear is a Personal Protective Equipment



Totally unsuitable footwear, such as sports shoes, or sandals, which offer no protection are not permitted on sites.

11.16. Digging & Excavation

11.16.1. Excavation

Trenches are potential killers. The majority of fatal trench accidents occur where the depth is less than 1.5m. A cubic metre of earth can weigh over 1.5 tonnes – which will crush a man.

Following points should be thought of before starting an excavation work:

- Prior to any digging, carry out thorough checks for underground services.
- Plan excavations including shoring requirements, safe access/egress, etc.
- Ensure any support/shoring materials are present on site prior to commencing excavations.
- Excavations must be supported/battered back where necessary to prevent collapse.
- Use ladders for access/egress – do not climb supports.
- Provide edge protection around excavations to protect other workers, the public, etc.
- Keep soil heaps, tools and vehicles back away from the edge of excavations.
- Never throw tools/materials into an excavation – always pass hand to hand or lower on a rope.
- Wear suitable PPE, including head and foot protection.
- Do not jump across excavations – provide suitable bridges where required.
- If vehicles are to be used to fill then position stops to ensure vehicles cannot drive into excavations.
- Never adjust/adapt supports/shoring without first getting approval from person in charge.
- Excavations must be inspected prior to entry, at the start of each shift, and after any



- Excavations must be formally inspected by a competent person at least once every seven days and the results recorded.



11.17. Material Handling

11.17.1. Manual handling

Almost a quarter of all injuries at work are caused by accidents during manual handling. Most of the injuries are to hands, feet, legs and back. Some of the back injuries result in permanent disability.

Take care of yourself by following the guidance notes given below:-

- If mechanical handling equipment is available and you are authorised and trained to use it, do so.
- Wear the right protective equipment for the job.
- Know your physical capabilities and only tackle jobs you can reasonably handle.
- Think the job through:-
 - o Can you handle the load by yourself?
 - o Is there a clear, properly lit, walkway to the work or stacking area?
 - o 3. Is there a safe stacking area?
 - o Will timber packing be required between the articles when stacked? 5. Seek advice on height restrictions for stacks. Remember, it is often more o dangerous de-stacking than stacking.
- Always check that the weight of the load is known before lifting.
- Know the correct way of lifting before attempting a lift:-
 - o Stand reasonably close to the load, be sure footing is firm and feet are about 300 mm apart.
 - o Squat down by bending the knees, keeping the back as straight as you can. 3. Place hands where they will not slip, and grip firmly.
 - o Breathe in before lifting - inflating the lungs helps support the spine. 5. Straighten up with the legs, keeping the back as straight as you can 6. Hold the load firmly and close to the body.

- o Ensure your view is not impeded by the load whilst working with it. 8. Lift slowly and smoothly. Avoid jerking motions.

When two or more persons lift a load, one of the team must be nominated to give instruction to ensure that each person lifts an equal share and the team work together.

LIFTING'S A BREEZE WHEN YOU BEND AT THE KNEES

11.17.2. Handling Chemicals

Many hazardous substances are used on our sites. Chemicals are contained in adhesives, admixtures, brick and stone cleaners, decorative / protective treatments for timber and metals, floor treatments / finishes, formwork and mould treatments, fumigants, cements and grouts, insulants, sealants, solvents and weed killers.

Accidents can be prevented if you know what the chemicals are, the hazards they pose, and the precautions to be taken in handling them. If there are any doubts, seek information and instruction from your supervisor. Avoid hazards by following the guidelines listed below:-

- Your manager /employer has a legal duty to assess the risk involved in working with a hazardous substance, decide what precautions should be taken to deal with the risk and instruct you on how to deal with the matter. Make sure you have this instruction before you work with any hazardous substance.
- Always read the label on the container and make sure you understand the information. If there is no label, do not use the contents.
- Do not assume that because two containers look the same, they contain the same material.
- Chemicals in construction may be: explosive, flammable, poisonous, irritant or corrosive. A chemical may have more than one of these hazards. Check for danger symbols on the label before opening the container.
- When opening containers, hold a rag over the cap as some volatile liquids tend to spurt up when the cap is released.
- Always check that you are wearing the correct protection before handling chemicals. Gloves, eye protection, protective clothing, rubber boots or respirators may be required. All these must be kept in good order.
- Explosive chemicals must be treated with great care. Some chemicals become unstable when old, and explosions can result if these are mishandled. Check the condition of all chemical containers for indications of leakage or age.
- All flammable liquids give off vapours which travel unseen into the air, and are easily ignited by flames, sparks or just heat alone.

Never smoke if there are flammable chemicals in the area and know what action to take in the case of fire.

- All chemicals should be regarded as toxic. Poisoning can occur by accidentally swallowing the chemical when eating, drinking or smoking with contaminated hands. Always wash hands carefully after handling chemicals, and do not eat, drink or smoke in the same area as the chemicals.
- Some chemicals can be absorbed through the skin and cause a wide range of diseases. Always use the right protective equipment and clothing and apply barrier creams if solvents are being handled.
- Some chemicals are poisonous if inhaled. Provide good ventilation, or work in the open air. Leave the area immediately if you feel dizzy or unwell. Report to your Supervisor.
- Corrosive chemicals, like acids and alkalis, destroy the skin. The eyes are particularly vulnerable, even to fumes. Always wear eye protection, gloves and protective clothing when handling these chemicals.
- Use the smallest quantity of chemicals that are necessary for the particular job.
- Eye protection should be worn when chemicals are being moved or transferred on site.
- Don't mix or decant chemicals.
- If the skin is splashed with a chemical, it should be washed off immediately with clean running water. Eye injuries should be flushed copiously with water and receive immediate medical attention. - ALWAYS FOLLOW THE EMERGENCY PROCEDURES ON THE HAZARD DATA SHEET
- If you are burned by a chemical, or feel unwell after using a chemical, tell your Supervisor and seek medical attention without delay.
- If there is a spillage of chemicals on the ground or floor, report the matter at once to your Supervisor so that the right action can be taken

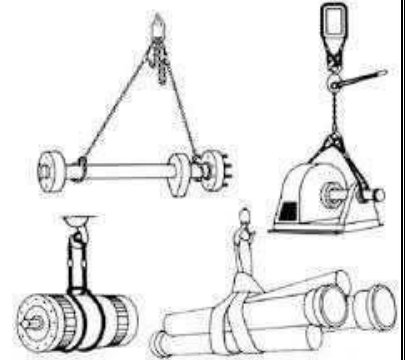
11.17.3. Slinging

Be certain that you know the weight of every load to be lifted and always allow for the additional weight of slings or any special lifting attachment, container or cradle. If you are in any doubt seek advice from your Supervisor.

Always:

- Only select correct and suitable lifting gear which is properly marked with its safe working load.
- Always ensure that crane and sling hooks are of an approved type.
- Examine the gear that you have selected and report any defects immediately to your Supervisor.
- Return any rejected gear to the stores immediately and advise the storeman of the defects noted.

-
- Properly secure the load or any part of the load which might slip and fall during lifting.
- Ensure that there is no danger of the contents falling out when skips or containers are used for lifting purposes.
- Where necessary, use soft timber or other packing to protect the sling from any sharp edges on the load.
- See that the crane hook is placed centrally over the centre of gravity of the load to prevent the load swinging when it is raised.
- Remember that it is part of your job to look after the lifting gear that you use and chains and slings must not be left lying around.
- When you have finished with them they must be returned to the store and hung correctly ready for examination and further use.



By protecting your lifting gear you protect both yourself and your colleagues against the risk of serious injury. Please play your part in the prevention of site accidents. Lastly, and the most important point is that only trained and competent persons are allowed to carry out any slinging operations.

11.17.4. Lifting Machines

Never attempt to operate mobile plant, a crane, excavator, dragline, forklift or other type of lifting machine unless you possess a relevant "License" or equivalent, or you have been authorised by the site.

Always:

- Walk around your machine before starting it, to check for defects and obstructions.
- Report any defects in your machinery to your supervisor.
- Carry out daily checks on the machine i.e. lights, brakes, oil, tyres, etc.
- Make sure that you know the Safe Working Load of your machine and the weight of any load you are required to lift.
- Try the load by lifting it slightly and halting, to see if the machine can take the load.
- Make sure the duties for the machine and the manufacturer's operating manual is with the machine.
- Check for potential hazards e.g. overhead cables, other employees, etc.
- Wear seat belts if provided.
- Keep to the speed limits.

- At the end of the day park on firm level ground, remove the ignition key, lock the cab, windows and any covers

Only persons trained in slinging practice and signalling systems may act as a slinger or a signalman.

Never:

- Never leave the cab whilst the load is suspended.
- Never stand under a load whilst it is suspended.
- Never carry passengers in the cab, unless seating is provided.
- Never allow persons to ride in any unauthorized position on the machine.
- Never leave the machine unattended.
- Never travel with booms, blades or the body raised.

11.18. Electrical Safety

11.18.1. Electrical hazards

Electricity is silent, invisible, and potentially fatal, so it deserves the utmost respect. Never ever take electricity for granted, and never assume a circuit is dead. The following points should be looked into before start of any electrical work:

- The lowest practical voltage should be used on construction sites, which should not exceed 230v.
- Only suitable and authorized electrical supplies and equipment should be used.
- The supplies & equipments should be installed and maintained by trained electricians.
- Suitable protection such as circuit breakers, fuses, and residual current devices, must always be used, along with the correct load rating.
- Electrical cables should be suspended where practicable to avoid damage and damp (which also reduces a trip hazard).
- Carry out visual checks of plugs, sockets and cables – if any damage is identified then remove from service and report immediately.
- Any cable joins must utilise proper connector blocks, not just insulating tape.
- Never use lighting sockets to power equipment.
- Ensure cables are long enough for the task – they should not be pulled taut.
- The inner insulation of cables should never be visible – the outer insulation should extend into plugs and equipment and fully utilise cable grips.
- Blown fuses should be replaced immediately – never make do with a “wire” (note: if a replaced fuse immediately blows again then it is indicative of a problem requiring the attention of an electrician).
- For electrical maintenance work ensure the mains supply is disconnected.
- Never overload electrical sockets – one plug per socket!

- Where “emergency stop” switches are present ensure they are tested regularly.

11.18.2. Power tools

Electrical appliances used on site are subject to harsh treatment and can easily become worn and/or damaged. They can then become lethal. Some of the points that need to be looked into are:

- All portable electrical appliances should be subject to regular inspection and maintenance by a competent person (electrician).
- They must only be used at the correct voltages – this should be 230v maximum.
- Visual checks of cables, casings and plugs should be carried out prior to use. If any damage is identified then remove from service and report immediately.
- Check that suitable protection devices such as fuses, circuit breakers and residual current devices are in place, and that any fuses have the correct load ratings.
- Only use portable electrical appliances for the purpose for which they were designed.
- Ensure switches are working properly at the earliest opportunity (prior to starting the task)
- Disconnect power tools when not in use.
- All power tools must be properly earthed unless it is an approved type that does not require earthing.
- Use of portable electrical appliances will often require wearing of suitable PPE such as eye and/or ear protection – ensure you wear them as required.
- Never connect portable power tools to lighting sockets.
- Never use blunt, worn or damaged bits and accessories.

11.19. Vehicle and Traffic Safety

11.19.1. Working on main roads

Many accidents occur at roadsides every year, most of which could be avoided with the implementation of safe working procedures.

Main points:

- Suitable warning signs should be displayed and correctly positioned.
- Traffic control must be implemented to meet the site requirements.
- Use a safety zone wherever practicable.



Discussion points:

- Cone off a tapered lead in zone to control traffic.
- Ensure barriers are erected around excavations, and that lighting/ warning lights are used at night.
- Ensure a suitable pedestrian route is maintained – if necessary re-route.
- Clean any excess mud/debris off the road so far as is practicable.
- Beware of work activities that create dust or debris that may impact on vehicular or pedestrian routes.
- Position plant and equipment so that no part of it infringes on the safety zone, and do not store any materials or equipment in the safety zone.
- Consider and organize site traffic access/egress.
- Wear safety helmets, hi-visibility vests and safety footwear.
- Do not enter the safety zone unless specifically required and authorized to do so.

12. Specification

12.1. Specifications for Flash Back Arrestors Regulator End (For Oxygen & Fuel Gas (Acetylene))

- Dry type with Filter, Non return valve, flame arrestor & automatic thermo sensitive gas cut off valve.
- The Thermo Sensitive cut off valve which cuts off gas before reaching ignition temperature to eliminate incidence of fire should activate between 90-100 degree centigrade
- ☐ Suitable for Inlet pressure of Oxygen: 20 bar, Acetylene: 1.5 bar, Hydrogen: 3 .5 bar , LPG : 5.0 bars
- The flash back arrestor should be approved by the safety body BAM.
- Connection : as per BSP standards
- The flashback arrestors should comply with ISO5175, EN730, BS6158
- The manufacturer should have ISO-9001 accreditation for manufacturing
- Gas flow direction to be indicated on each Flash back arrestor
- The working manual to be enclosed in each packing.
- Manufacturer should have equipment for periodic testing of flashback arrestors in use.

12.2. Specifications for Flash Back Arrestors Torch End **For Oxygen & Fuel Gas (Acetylene)**

- Dry type with Filter, non return valve & flame arrestor
- ☐ Suitable for Inlet pressure of Oxygen: 20 bars, Acetylene: 1.5 bars, Hydrogen: 3.5 bars , LPG : 5.0 bars
- The flash back arrestor should be approved by the safety body BAM.
- Connection : as per BSP standards
- The flashback arrestors should comply with EN730, BS6158
- The manufacturer should have ISO-9001 accreditation for manufacturing
- Gas flow direction to be indicated on each Flash back arrestor
- The working manual to be enclosed in each packing.
- Manufacturer should have equipment for periodic testing of flashback arrestors in use.

12.3. Specifications For Gas Cutting Torch

- Nozzle Mixing Technology
- Confirms to EN ISO 5175

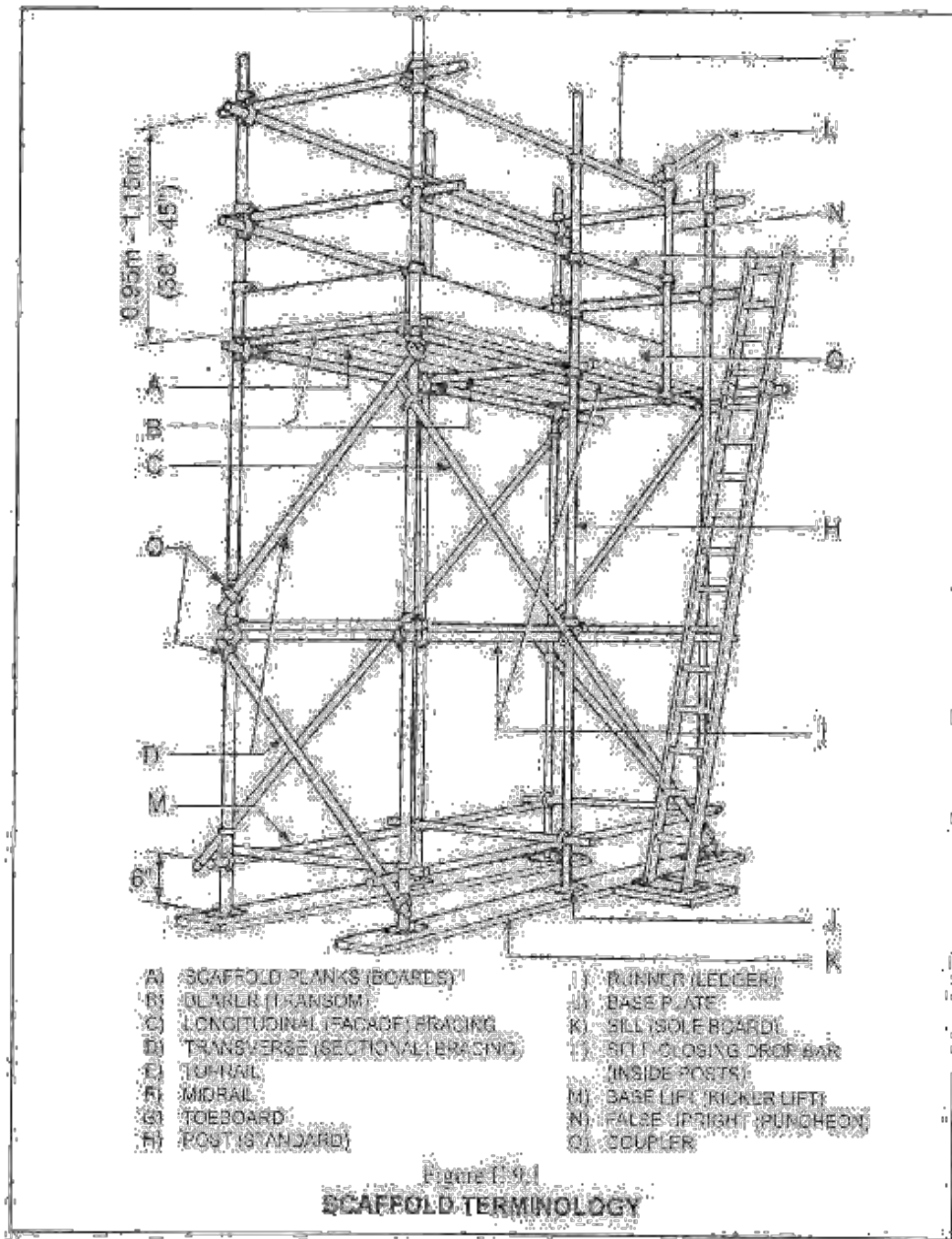
- Head: 90 degree solid forged brass head
- Tubes: Stainless Steel Tubes
- Handle: Aluminum light weight handle
- Liver: Stainless Steel
- Knobs: Forged Brass
- Nipples : Forged Brass
- Torch Length: 510 mm
- Torch Weight: 1050 grams
- The torch should have replaceable inlet connection nipples.

12.4. Specifications For Cutting Nozzles for DA (Acetylene)

- Solid one-piece, 3-seat nozzles with international 30 degree tapered seat
- Nozzle Mixing Principle
- 6 separate injectors within the nozzle
- Confirming to EN ISO 5175

13. Scaffolding

13.1. Scaffolding Procedure



I. Purpose

The purpose of this procedure is to minimize /eliminate the chances of any accident during erection, inspection, usage and dismantling of temporary work platforms. This procedure sets out the minimum standards for the erection, usage and dismantling of scaffolds and provides the guideline for conducting the work in safe manner. For detailed design, erection, usage and dismantling procedure, scaffolding manual listed in the reference section shall be consulted.

II. Scope:

The types of scaffold covered in this procedure are those commonly used within the including tubular and coupler scaffolds, pre-fabricated tubular frame scaffolds, manually propelled mobile scaffolds and trestle scaffolds.

III. Procedure

A. Definitions:

Anchorage: Component cast or fixed into the building or structure for the purpose of attaching a scaffold or tie; it also means the holding down system for cantilevered beams when referring to suspended scaffolding and cantilevered platforms.

Base plate: A metal plate with a spigot for distributing the load from a standard or raker or other load-bearing tube.

An adjustable base plate is a metal base plate embodying a screw jack.

Bay: The portion of a scaffold situated between two adjacent pairs of standards measured longitudinally and extending the full height of the scaffold. The bay length is the longitudinal distance between the two adjacent pairs of standards.

Brace: A member placed diagonally with respect to the vertical or horizontal members of a scaffold and fixed to them to afford stability.

Castor: A swiveling wheel secured to the base of a vertical member of the scaffold for the purpose of mobilizing it.

Coupler: A fitting used to fix scaffold tubes together.

Free-standing scaffold: A standing scaffold which is not attached to any other structure and is stable against overturning on its own account or, if necessary, assisted by rakers and anchors.

Hanging scaffold: A working platform suspended by tubes, bolts, fixed rope slings or other methods and not intended for raising or lowering while in use.

High: In relation to scaffolding, means the vertical height of the actual scaffold.

Height: In relation to scaffolding or part of scaffolding, means the greatest vertical distance from which any article may fall from the highest working platform of the scaffolding to the ground or structure on which the scaffolding is supported or above which the scaffolding is suspended or fixed, as the case may be. In determining the distance which an article may fall, no account shall be taken of any obstruction which may delay or stop the fall unless there is no possibility of the fall continuing after the obstruction is reached.

Ledger: A horizontal member placed in the longitudinal direction between standards for the purpose of supporting putlogs.

Lift: The assembly of ledgers and putlogs forming each horizontal level of a scaffold. The lift height is the vertical distance between two lifts, measured center to center.

Live load: That portion of a load which does not include any part of the scaffolding or Decking supporting the load, and comprises the weight of workers and/or materials.

Outriggers (needles): Cantilevered beams from which a swinging stage is suspended.

Putlog (or bearer or transom): A horizontal member placed in the transverse direction between ledgers, standards, or other supports and used to support a working platform.

Raker: An inclined load-bearing member.

Right-angle coupler: A coupler used to join tubes at right angles.

Safe working load (SWL): The maximum load calculated in accordance with sound and accepted engineering practice, which can be supported safely under normal working conditions.

Standard: An upright member used for transmitting the weight of the load from the working platforms to the base of the scaffolding.

Suspended scaffold: A working platform suspended from overhead and intended to be raised or lowered while in use.

Swivel coupler: A coupler for joining tubes at an angle other than a right angle.

Sole plate: A timber, concrete or metal bearer used to distribute the load from a standard or base plate to the ground.

Span: Means the distance measured along the member between the center lines of adjacent supports of the member.

Tie: The attachment by which scaffolding is attached to a structure; it also means “tie and spreader” and includes the attachments used in conjunction with the spreader or putlog extension to secure a scaffold to a building or structure to prevent movement. **Toe board:** An up stand or vertical barrier at the edge of a platform intended to prevent materials, or workers’ from slipping off the platform.

Transom: A Tube or beam spanning across ledgers to form the support for boards forming the working platform or to connect the outer standards to the inner standards (see Putlog).

Working platform: That part of a scaffolding on which workers and/or materials are supported for the purpose of carrying out construction work.

B. PROCEDURE

a. General Conditions

- Scaffold shall be provided for all work which cannot be done safely from ground or part of the building or structure
- Scaffolding shall be erected, altered and dismantled under supervision of authorized person and by person with adequate experience.
- No scaffold shall be left partly erected or dismantled unless adequate notices are displayed and access blocked.

b. Foundation

- On hard surfaces such as steel and concrete of sufficient strength and thickness, standards shall be placed directly on the surface.
- On other surfaces, in addition to steel base plates for the standards, sole plates shall be used to spread the load for the scaffolds. Bricks, concrete blocks and odd, uneven timber scraps shall not be used for sole plates
- Adjustable base plates shall be used in uneven surface.

c. Standards, ledgers and transoms

- Standards and ledgers are the vertical and horizontal structures of the scaffolds. Steel tubes of 4 mm thickness with outer diameter 48.3 mm or Aluminum tubes of 4.47 mm thickness with outer diameter of 48.4 mm shall be used as the standards and ledgers of the scaffolds.
- The spacing between the standards shall be 2.1 m for a general purpose scaffold and shall be reduced as the load increases.
- Ledgers shall be fixed to the inside of standards with right angled couplers with ledger to ledger spacing of 2 M.
- The length of the transoms will be determined by the width of the proposed platform. Generally transoms shall never be laid more than 1.5 m apart.

d. Bracings and Ties

- Bracing and Ties shall be done to ensure the stability of the scaffold.
- Bracing shall be done in both directions. Bracing shall be done on the outer face of the scaffold from base to the full height in diagonal manner or along each bay in Zigzagmanner.
- Braces shall be connected to standards using swivel coupler or to the ends of transoms with right angle coupler.
- Scaffold shall be securely tied to the building or structure throughout their length and height to prevent movement of the scaffold either towards or away from the building or structure.

e. Work Platform

- Width of the working platform shall be of minimum width of 600 mm. Boards free from damages; paint or oil shall be used. Thickness of the planks used shall be from 32-38 mm and width shall be 225-300 mm. Width of the platform shall be decided to suit type of work from 600mm to 1.5 M

- Planks shall be decked closely as close as practicable, locked or secured on both ends to prevent tipping and displacement during normal use. Overhang at least 50 mm but not more than 4 times thickness of the board, unless secured from tipping.

f. Guard Rails, Toe boards & Ladders.

- Guardrails must be provided on the exposed sides and ends of all working platforms more than 3 m in height. The guardrail may be fixed to the outside of the standard.
- A toe board or equivalent protection must be fitted on the outside edge of every working platform more than 3 m in height, if materials and tools are placed on the platform and are likely to be dislodged. Scaffold plank of 225 mm minimum width may be used as a toe board.
- To facilitate the movement of materials, guardrails and toe boards may be temporarily removed, but they must be replaced as soon as practicable.
- Scaffolds more than 2m in height shall be provided with secured ladder fixed at top or bottom for access and it shall extend at least 1 meter above platform

g. Pre-fabricated tubular frame scaffold

In addition to the basic conditions in the Section C, following conditions warrants particular attention.

- Scaffolds shall be erected as per manufacturer's direction and limitations Reference shall be made to manufacturer's publication or erection instructions. Recommendations of the manufacturer shall be strictly adhered.
- Tubes and fittings shall not be mixed or interchanged.

h. Mobile Scaffolds

In addition to the basic conditions in the Section C, following conditions warrants particular attention.

- Wheels or casters fitted with brakes, which cannot be released accidentally, shall be securely fixed to the bases of the posts by lock pins or dowels.
- A mobile tower scaffold shall only be used and moved on surfaces sufficiently firm and level to ensure stability.
- Scaffold shall be moved only by pushing or pulling at the base. No men, equipment or materials shall be on the working platform or elsewhere on the structure while it is in motion.
- Wheel brakes shall be applied at all times when men are on the stationary mobile tower scaffold.

i. SCAFFOLD INSPECTION AND TAGGING

- The use of scaffold tagging is mandatory. Red and green tags shall be used. Green tags should be used to identify scaffolds, which are complete, have been inspected and are ready to use. Red tags (Annexure 2) should be placed on scaffolds that are being constructed, dismantled or modified, scaffolds that are damaged, or defective.
- After erection is completed, Safety Engineer shall inspect with scaffold inspection check list (Annexure 1) and issue the Green tag (Annexure 2) declaring safe to use indicating the date of next inspection. The date of next inspection shall not be more than 2 weeks ahead.
- A separate log shall be maintained by the Safety Engineer regarding inspection details and date of next inspection.
- Any substantial modification if done shall be inspected and cleared safe for work by the Safety Engineer.

C. SAFETY NOTE:

- No scaffold shall be kept in partly dismantled condition. If for any reason, the scaffolding is left in partly dismantled condition, a suitable warning sign shall be displayed on or near the scaffold.
- Scaffold location must not foul access ways, roads and doors. If fouling is unavoidable, warning boards shall be installed and the area cordoned off for traffic.
- Any scaffold accessories such as braces, ladders, etc, which are damaged, shall be immediately repaired or replaced.
- Screwed levelling base plates can be used to compensate for uneven ground, but must be used with caster wheels. Don't extend adjusting screws beyond 300mm.
- Damaged planks should not be used in building scaffolds. Splits at the ends shall be wrapped by metal binders prior to usage. Damaged boards can be cut down to remove the damaged portion and modified to the required size to serve as sole plates for soft ground.

D. TRAINING

All employees and contract work men who performs work on a scaffold shall be trained annually to recognize the hazards associated with the type of scaffold being used and the procedures to control or minimize those hazards. Employees and contract work men shall be trained to demonstrate competency in the following areas:

- Nature of electrical, fall hazards and falling object hazards in the work area;
- Proper use of scaffolds;
- Proper handling of materials on scaffolds;
- Proper erecting, maintaining and disassembling of Scaffolding systems;
- Proper construction, use, placement and care in handling of scaffolds; and
- Maximum intended load and load-carrying capacities of scaffolds used.

14. PPE STANDARDS

S.No	Type of PPE	Specifications	Recommended brand	Standard
1	Helmet with plastic suspension	Safety Helmet With 6 Points Plastic Suspension Richet Type Adjustment	Joseph Ielsie, Venus or equivalent	EN 397 IS :2925:1984
2	Safety goggles	Dust And Impact Resistant, Safety Eye Wear, 99.9% UV Protected Scratch & Impact Resistant Polycarbonate Clear Lens	Venus, 3M, Unicare or equivalent	ANSIZ87.1-2003/ IS1179-1967 En-166
3	Chemical splash goggles	Chemical Splash Spectacles Anti Fog Lens, Wrap Around Wide Vision Style, Adjustable Elastic Head Band With 99.9% UV Protected Scratch & Impact Resistant Polycarbonate Smoked Lens.	Venus, 3M, Unicare or equivalent	ANSIZ87.1-2003/ IS1179-1967
4	Welding goggles	Spectacles With Ir-5 Lens For Gas Welding With 99.9% UV Protected Scratch & Impact Resistant Polycarbonate Lens	Venus, 3M, Unicare or equivalent	ANSIZ87.1-2003/ IS1179-1967
5	Acrylic face shield	Attachable To Helmet, Visor Made From High Impact Polycarbonate Material With Slot Fix System To Be Used With The Safety Helmet. Ideal For Grinding And Chipping Purpose	Venus, 3M, Karam or equivalent	ANSIZ87.1-2003/ IS1179-1967
6	Ear plugs	Disposable Foam Ear Plugs, Soft, lightweight, comfortable to use Smooth dirt resistant surface for better hygiene. Expands rapidly to	Karam, 3M or equivalent	ANSI-S3,19-

	take exact shape of ear canal. Bright orange colour for visibility. Hypoallergenic Soft braided cords for reduced sound vibrations.		1974
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7	Nose mask with nose clip	More than 80% filtering efficiency Fold Flat type IS 9473:2002. Respirator with one way exhalation vent valve for hot & humid condition. ISI marked and DGMS approved	Venus, 3M or equivalent	IS - 9473& EN 149 FFP1
8	Gas mask: Face Piece	Half mask Face-piece in soft TPE material (Thermoplastic Electrometric), equipped with dual filter for better breathing comfort.	Venus or equivalent	
9	Multigas cartridge filter	Replaceable filter container and retainer made by virgin grade high impact polystyrene. Impregnated granular activated carbon, suitable for organic vapor, inorganic gases, acid gases, ammonia.	Venus or equivalent	EN 14387:2004
10	Signalling Vest	Hi-Visibility Signaling Vest In Orange Color Made With En Approved 130 Gsm Fabrics With 3m Reflective Tapes In Silver Color As Cross Belt Assembly. Tape Pattern- One Horizontal, Two Vertical.	Reflectosafe, JK Safe wear, Allen cooper or equivalent	
11	Cotton Gloves	100% Cotton yarn PVC dots IN 60 gram Weight. Knitted Construction allows the circulation of air to avoid Perspiration. Light weight, Tear resistant, Close fit without seams for work Comfort. PVC dotting for Mechanical Protection.	Joseph lesli, Venus or equivalent	
12	PVC gloves	Acid Proof, E Material: Polyvinyl Chloride Rubber, Size: 16 Inch With Lining Savior Pvc Supported, Concentrated Chemical Resistant (Acid/Alkali Proof), Made From Superior Quality	Josepj lesli, Venus or equivalent	

	Pvc Inside Cotton Reinforcement For Better Grip And Longer Life.		
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13	Electrical gloves 1.1KV,9-9.5IN	External Material: Rubber, Voltage Rating: 1.1 Kv, Length: 10 Inch, Size: 9-9.5 Inch, Leather Protectors, Class: 00, Maximum Use Voltage: 500 Vac, Meets Or Exceeds Standard: ASTM D120 And IEC 903, Linemans Gloves: 0306, Cat: E001	Honeywell or equivalent	
14	Electrical gloves 8 KV & 33 KV	Gloves, Protective, Type: Hand, External Material: Rubber, Voltage Rating: 88 KV & 33 Kv, Length: 10 Inch, Size: Number: 14, For Full Protection From Shock At 33 KV, As Per Standard: IS 4770-1968/1991, Should Be ISI Marked	Honeywell or equivalent	
15	Leather gloves	External Material: Leather, Thickness: 1- 1.55 Mm, Length: 14 Inch, With Inside Felt Lining, And Fitted With Full Inside Superior Quality Flannel Cloth Lining, Superior Quality Chrome And Split Leather Thickness: 1.5 Mm.	Josep Jesli, Venus, Karan	
16	Nitrile Gloves	100% Nitrile Coated And Vulcanized Acrylo Nitrile Butadiene On Cotton Jersey Lining, Ribbed Cuff. The Back Of Gloves Uncoated And Uniform Finish For Enhanced Grip, Cut, Abrasion, Puncture And Tear Resistance.	Tiger or equivalent	EN 388:2003 EN 420:2003
17	Leather industrial safety shoe	1. Composite fiber toe cap 200 J, 2. Dip PU injection molded inter grip double density PU sole 3. Resistance: acid, oil, heat, chemical, antiskid, antistatic 4. Insole: Non Woven, Antistatic 5. Leather: Buff Nubuck Leather with imported waterproof fabric 6. ISI and DGMS approved	Allen cooper or equivalent	IS : 1989 (Part - I) 1986

		7. Socks: Molded Socks for Extra Comfort		
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18	Gum Boot	Dual Density Fresh Virgin Polyvinyl Material, Double Density Nitrile Polyvinyl Outsole Material, Inside Cotton Lining, Anti Skid, 100% Acid Resistant ISI And DGMS Approved	Allen cooper or equivalent	
19	Full Body Harness	Full Body Harness With Fully Adjustable Shoulder And Thigh Straps, Two Chest Attachment D-Ring Conforms To En 361. With 1.8 Mtr. Polyamide Rope Lanyard & Two Easy SH 60 Scaffolding Hook	Karam,Udyogi or equivalent	IS 3521 ; 1999
20	Fall Arrester	Equipped with Steel Karabiner for attachment with the harness of user. Moving metallic gadget on flexible anchorage line. Moves along with the user climbing up or down and locks him in the case of a fall. Double safety opening system. Automatic locking system. Manual auto locking lever. Capable of using on both Ø14mm & Ø16mm anchorage line. Anchorage Line: Made of 14mm 3 strand polyamide rope complying ISO 1140. Made of 16mm 3 strand polyamide rope complying ISO1140. Made of 14mm 3 strand polyamide rope complying	Karam,Udyogi or equivalent	IS 3521 ; 1999
21	Horizontal Safety Net	Safety Net For Man Fall Protection With Overlay Net , 4 mm Mesh Rope, 100 MM Mesh Size, 12 MM Border Rope With Overlay	Karam,Udyogi or equivalent	IS 3521 ; 1999

		Of 1 MM Mesh.		
22	Dangri	67 % synthetic 33% cotton, reflective strip on shoulder, arm and leg, full length front chain, two side pockets, two leg pockets, one chest Sleeves with cuffs and buttons.		

23	Acid Suit	Clothing, Suit, Type: Pvc, Acid/Alkali Proof, And Material: High Polyethylene Fiber, With Yellow Polymer Coating On Top.	Microchem, Tychem or equivalent	IS 4501: 1981,EN- 369,374/3 CE 0120
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15. List of Important Indian Standards on Safety & Health

15.1. Machinery:

IS 659 : 1964	Safety, code for air-conditioning (revised)
IS 1860 : 1980	Electric passenger and goods lifts, code of practice for installation, operation and maintenance of
IS 1991:1987	Safety requirements for the use, care and protection of abrasive grinding wheels – Point 1 to 10.
IS 2148 : 1981	Flameproof enclosures of electrical apparatus (second revision)
IS 2825 : 1969	Code of unfired pressure vessels.
IS 5780 : 1980	Intrinsically safe electrical apparatus and circuits (first revision)
IS 5903 : 1970	Safety devices for gas cylinders
IS 8089 : 1976	Code of safe practice for layout of outside facilities in an industrial plant
IS 8091 : 1976	Code of safe practice for industrial plant layout
IS 8091 : 1976	Code of safe practice for industrial plant layout
IS 8216 : 1976	Lift wire ropes, guide for inspection
IS 8218	Safety code for plant railways
Part 1 : 1976	Layout
Part 2 : 1982	Locomotives, wagons and their movement
IS 8945 : 1987	Electrical measuring instruments for explosive gas atmospheres (first revision)
IS 9474 – 1980	Principles of mechanical guarding of machinery
IS 11016 : 1984	General and safety requirements for machine tools and their operation
IS 11461 : 1985	Code of practice for compressors safety
IS 13367 : 1992	Code of practice – Safe use of cranes
SP 53 : 1992	Safety code for the use, care and protection of hand operated hand tools

15.2 Electrical and Electronics

IS 616 : 1986	Safety requirements for mains operated electronic and related apparatus for household and similar general use
IS 2309 : 1989	Code of practice for the protection of buildings and allied structures against lightning (second revision)
IS 3043 : 1987	Code of practice for earthing (first revision)
IS 4691 : 1985	Rotating electrical machinery, degrees of protection provided by enclosure etc
IS 5216 (Part 1) 1982	Recommendations on safety procedures Practices in electrical work : Part 1 General
IS 5571 : 1979	Guide for selection of electrical equipment for hazardous areas (first Revision)
IS 5572 (Part 1) 1944	Guide for selection of electrical equipment for hazardous areas (first revision)
IS 7689 :1989	Guide for control of undesirable static electricity (first revision)
(Part 1) – 1979	Common safety requirements for instruments
(Part 2) – 1982	Safety requirements for instruments using mains supply
IS 11000 (Part 1) 1988	Fire hazard testing : Part 1 Guidance for the preparation of requirements and test specifications for assessing fire hazards of electronic and electrical items
IS 13252 : 1992	Safety of international technology equipment
IEC 950 : 1988	Including electrical business equipment
IS 5224 – 1969	Rubber mats for electrical purposes

15.3. Transportation:

IS 4357 : 1974	Methods for stability testing of forklift trucks (first revision)
IS 6305 (Part 1)1980	Safety code for powered industrial trucks : Part 1 Application, operation and maintenance (first revision)
IS 6305 (Part 2) 1980	Safety code for powered industrial trucks : Part 2 Manufacture (first revision)
IS 7155: 1986 – 1994	Code of recommended practice for convey or safety – Part 1 to 8
IS 7831: 1993	Stability tests for pallets stackers and high lift platform trucks (pedestrian and rider controlled)

IS 9618 : 1980	Road tankers for liquefied petroleum gas
IS 10311 : 1982	General requirements for powered platform trucks and their acceptance criteria
IS 10312 : 1982	Safety code for powered low trucks
IS 11006 : 1984	Flash back arrestor (flame arrestor)
IS 12056 1987	Recommendations for Safety requirements for fuel tanks

15.4. Civil Engineering Construction:

IS 875 : 1987	Structural safety of building : Loading Standards Part 1 – 5
IS 1905 : 1987	Structural safety of buildings : Masonry Walls
IS 4014 : 1967	Code of practice for steel tubular scaffolding – 2 parts
IS 4912 : 1978	Safety requirements for floor and wall openings, railings and toe boards (first revision)
IS 7293 : 1974	Safety code for working with construction machinery
IS 7969 : 1975	Safety code for handling and storage of building materials
IS 9944 : 1992	Recommendations on safe working load for natural and man-made fibre rope slings
IS 11972:1987	Code of practice for safety precaution to be taken when entering a sewerage system
IS 13415:1992	Code of safety for protective barriers in and around building
IS 13416	Recommendations for preventive measures against hazards at working places – 2 parts.
IS 3696	Safety code of scaffolds and ladders – 2 parts.

15.5. Chemicals and other Hazardous Materials:

IS 1446 : 1985	Classification of dangerous goods (first revision)
IS 4015	Guide for handling cases of pesticide poisoning
Part 1 : 1967	First-aid measures
Part 2 : 1967	Symptoms, diagnosis and treatment
IS 4155 : 1966	Glossary of terms relating to chemical and radiation hazards and hazardous chemicals

IS 4209 : 1987	Code of safety for chemical laboratories (first revision)
IS 4607 : 1968	Classification of hazardous chemicals and chemical products
IS 5931 : 1970	Handling cryogenic liquids

15.6. Fire Protection:

IS 1641 : 1988	Code of practice for fire safety of buildings (general) : General principles and fire grading and classification (first revision)
IS 1644 : 1988	Code of practice for fire safety of buildings (general) : Personal hazard (first revision)
IS 1646 : 1982	Code of practice for fire safety of buildings (general) : Electrical installations (first revision)
IS 2189 : 1988	Code of practice for selection, installation and maintenance of automatic fire detection and alarm system (second revision)
IS 2190 : 1992	Code of practice for selection, installation and maintenance of portable first-aid fire extinguisher (third revision)
IS 3016 : 1982	Code of practice for fire precautions in welding & cutting operations (first revision)
IS 3034 : 1993	Code of practice for fire safety of industrial buildings : Electrical generating and distributing stations (first revision)
IS 3079 : 1990	Code of practice for fire safety of industrial buildings : Cotton Textile Mills (first revision)
IS 3594 : 1991	Code of practice for fire safety of industrial building : General storage and warehousing including code storages (first revision)
IS 4886 : 1991	Code of practice for fire safety of industrial buildings : Tea factories (first revision)
IS 5896	Code of practice for selection, operation and maintenance of fire fighting appliances
IS 5896	Code of practice for liquefied petroleum gas storage installations
Part 1 : 1971	Commercial and industrial cylinder installations
Part 2: 1972	Industrial, commercial and domestic bulk storage installations
IS 6329 : 1971	Code of practice for fire safety of industrial buildings : Saw mills and

	woodworks
IS 6382 : 1984	Code of practice for design and installation of fixed carbon dioxide fire extinguishers system (first revision)

IS 8433 : 1984	Dissolved acetylene cylinders
IS 9109 : 1979	Code of practice for fire safety of industrial buildings, paint and varnish factories
IS 9668 : 1990	Code of practice for provision and maintenance of water supplies for fire lighting
IS 9964	Petroleum storage tanks
(Part 1) 1981	Preparation of tank for safe entry work
(Part 2) 1981	Inspection
IS 11457	Code of practice for safety of chemical
(Part 1) 1985	industries, Part 1 Rubber and plastics
IS 12456 : 1988	Fire protection of electronic data processing installations

15.7. Personal Protection:

IS 1179 : 1967	Equipment for eye and face protection during welding
IS 4770 : 1991	Rubber gloves for electrical purposes
IS 5424 : 1969	Rubber mats for electrical purposes
IS 6519 : 1971	Code of practice for selection, care and repair of safety footwear
IS 8318 : 1977	Colour identification marking for air purifying canisters and cartridges
IS 8519 : 1977	Guide for selection of industrial safety equipment for body protection
IS 8520 : 1977	Guide for selection of industrial safety equipment for eye, face and ear protection
IS 8807 : 1979	Guide for selection of industrial safety equipment for protection and arms and hands
IS 8940 : 1978	Code of practice for maintenance and care of industrial safety equipment for eye and face protection
IS 8990 : 1978	Code of practice for maintenance and care of industrial safety clothing
IS 9623 : 1980	Recommendations for the selection, use and maintenance of respiratory protective devices
IS 10667 : 1983	Guide for selection of industrial safety equipment for protection of foot and leg
IS 12078 : 1987	Recommendations for personal protection of workers engaged in Handling asbest

15.8. Miscellaneous:

IS 816 : 1969	Code of practice for safety and health requirements in electric's and gas welding and cutting operations (first revision)
IS 818 : 1968	Code of practice for safety and health requirements in electric and gas welding and cutting operations (first revision)
IS 3483 1965 :	Noise reduction in industrial buildings, code of practice for
IS 5182	Air pollution, methods for measurement of
Parts 1-20	Guidelines for planning the sampling
(Part 13) 1991	Atmosphere
IS 3786 1983 :	Methods for computation of frequency severity rates for industrial injuries & classification of industrial accidents (first revision)
IS 7494 1994 :	Noise-exposure during work for hearing conservation purposes, assessment of
IS 8095 1976 :	Accident prevention tags
IS 9457 1980 :	Code of practice for safety colors and safety signs
IS 1017 : 1982 9	Air pollution in petroleum refineries, code of practice for control of
IS 1022 : 1982 4	Ergonomic principles in the design of work systems
IS 1448 : 1998 9	Code of practice on Occupational Safety & Health Audit

15.9. Health Care:

IS : 1971 6074	Code of practice for functional requirements of hotels, restaurants and other food service establishments
IS 7620	Medical Electrical Equipment – General &
(Part 1) 1986	Safety requirements (first revision)
(Part 2) 1991	Radiation Safety Requirements
IS 11478 :	Application guide for medical electrical
(Part 2) 1985	equipment : Part 2 – Safety provisions, Application, operation and Maintenance

15.10. Select Indian Standards Related to Electrical Safety

IS No.	Title
SP (30) : 1985	National electrical code
SP (31) : 1986	Chart on treatment of electric shock
IS 302	Safety of house hold and similar electrical appliances
IS 732 : 1989	Code of practice for electrical wiring installation
IS 900 : 1992	Code of practice for installation and maintenance of induction motors
IS 1255 : 1983	Code of practice for installation and maintenance of power cables upto and including 33 kV rating
IS 1860 : 1980	Code of practice for installation and maintenance of electrical passenger and goods lift
IS 1913 : 1978	General and safety requirements for luminaries
IS 1944	Code of practice for lighting of public thoroughfare
IS 2309 : 1989	Code of practice for the protection of buildings and allied structures against lightning
IS 2551 : 1982	Specification for danger notice plates
IS 2672 : 1966	Code of practice for library lighting
IS 3043 : 1987	Code of practice for earthing
IS 3646	Code of practice for interior illumination
IS 4591 : 1968	Code of practice for installation and maintenance of escalators
IS 4648 : 1968	Guide for electrical layout ion residential buildings
IS 5216 : 1982	Guide for safety procedures and practices in electrical work
IS 5613 : 1985	Code of practice for design, installation and maintenance of overhead power lines
IS 6620 : 1972	Code of practice for installation, operation and maintenance of electric service lifts.
IS 6665 : 1972	Code of practice for industrial lighting
IS 7689 : 1989	Guide for control of undesirable static electricity

IS 8061 : 1976	Code of practice for design, installation, and maintenance of service lines up to an including 650 v
IS 8690 : 1977	Application guide for measuring devices for high voltage testing
IS 8828 : 1996	Miniature circuit breakers
IS 8884 : 1978	Code of practice for the installation of electric bells and call system
IS 10118 : 1982	Code of practice for selection, installation and maintenance of switch gear and control gear
IS 12640 : 1988	Residual current operated circuit breakers

15.11. List of relevant Indian Standards and codes of practices on lifting appliances.

IS 3813 : 1967	'C' Hook for use with swivels
IS 4066 : 1967	Metal hooks, clips and eyes
IS 4594 : 1968	Code of practice for design of portal and semi-portal wharf cranes (electrical)
IS 2758 : 1969	Mild steel point hooks for use with wire rope thimbles
IS 2759 : 1969	Higher tensile steel point hook for use with wire rope thimbles
IS 3815 : 1969	Plain hooks with shank for general engineering purposes (Amendment 1)
IS 6498 : 1971	Glossary of terms used in connection with pulley blocks
IS 6132 : 1971	Shackles (Part 1 General requirements)
IS 6132 : 1972	Shackles (Part 2 Dimension of Dee shackles)
IS 6132 : 1972	Shackles (Part 3 Dimensions of bow shackles)
IS 6717 : 1972	Specification for mobile road crane
IS 6521 : 1972	Code of practice for design of tower cranes
IS 6511 : 1972	Range of preferred safe working loads for crane, lifting appliances and related excavator equipment
IS 6549 : 1972	Glossary of terms used in connection with lifting tackle
IS 6547 : 1972	Electro chain hoists

IS 7847 : 1973	General characteristic of lifting hooks
IS 3937 : 1974	Recommendations for socketting of wire ropes (part 1 to 3) Socketting with white metal
IS 3937 : 1974	Recommendations for socketting of wire ropes, Socketting with zinc
IS 4357 : 1974	Methods for stability testing of forklift trucks
IS 7865 : 1975	General requirements of 8 tonnes hooks for lifting 150 series 1 freight containers of upto 30 tonnes capacity
IS 1835 : 1976	Round steel wire for ropes. (Third revision) (Amendment 1)
IS 807 : 1976	Code of practice for design, manufacture, erection and testing (structural portion) of cranes and hoists
IS 4164 : 1976	Lifting 'C' hooks with eye capacity upto 25 tonnes
IS 8324 : 1976	Code of practice for safe use and maintenance of non-calibrated round steel link lifting chains and chain slings
IS 3177 : 1977	Code of practice for electric overhead travelling cranes and gantry cranes other than steel work cranes
IS 2365 : 1977	Specification for steel wire suspension ropes for lifts, elevators and Hoists
IS 6594 : 1977	Technical supply conditions for steel wire ropes and strands
IS 8610 : 1977	Point hooks with shank capacity upto 25 tonnes trapezoidal section
IS 2485 : 1979	Drop forged sockets for wire ropes for general engineering purpose. (First revision)
IS 2760 : 1980	Steel chain slings
IS 3443 : 1980	Crane rail sections
IS 9936 : 1981	Guide on equivalence between manila ropes nylon, polyester and polypropylenes ropes marine purposes
IS 9944 : 1981	Recommendations on safe working loads for natural and main- made fibre rope slings
IS 5616 : 1982	Short link chain for lifting purposes general conditions of acceptance
IS 3822 : 1982	Eye hooks for use with chains (First revision) Amendment 1)
IS 1804 : 1982	Fibre cores for steel wire ropes (Second revision)
IS 2762 : 1982	Wire ropes slings and sling legs

IS 4573 : 1982	Power driven mobile cranes
IS 1084 : 1983	Manila ropes. (Third revision) (Amendments 2)
IS 3938 : 1983	Electric wire rope hoists
IS 10783 : 1983	Patient lifting devices, mobile, manually operated
IS 3973 : 1984	Code of practice for the selection, installation and maintenance of wire Ropes
IS 5604 : 1984	Hand operated universal gear less pulling and lifting machines
IS 4137 : 1985	Code of practice for heavy duty electric overhead travelling cranes including special service machines for use in steel work
IS 3832 : 1986	Hand operated chain pulley blocks (Second revision) (Amendment 1)
IS 4145 : 1987	Code of practice for the storage of ropes
IS 8324 : 1988	Code of practice for safe use and maintenance of non-calibrated round steel lifting chains and chain slings
IS 2581 : 1989	Round strand galvanized steel wire rope for shipping purpose. (Third Revision)
IS 2266 : 1989	Steel wire ropes for general engineering purpose
IS 12735 : 1989	Wire rope slings – Safety criteria and inspection procedures for use
IS 13558 : 1992	Cranes – controls – layout and characteristics (Part 1 to 5)
IS 13559 : 1993	Cranes – information to be provided (Part 1 to 4)
IS 13583 : 1993	Cranes – training of drivers (Part 1)

16. Business partner safety compliance list

S.No	Safety Compliance list for Contractor partners- Talwandi Sabo Power Limited
1	HSE Policy, golden safety rules Life saving rules Display outside of office)
2	Know how about Onsite emergency plan & Important Numbers
3	Hoist & Lift Inspection Records - Respective Areas
4	Data of Discarded equipments & Color coding with Inspection Tag
5	Isolation from Energy Source of Lifting tools, Wherein TPI is not available
6	Lifting tools & Tackles register (Cranes ,hoisting blocks/tackle, slings, chains, wire ropes, shackles, pad-eyes, containers, tuggers, winches, man-riding winches, jacks, work-belts, harnesses and transfer baskets for equipment and personnel.)
7	Are authorizations / Licenses for operating special equipment - trucks / dumpers/crane operators / forklifts /dozers/excavators etc. in place
8	Incident communication (Fatal at group level / Safety learning at TSPL Site / Contractor & their group level incidents)
9	Fire fighting in case of Emergency (Extinguishing Media etc..) - 100 % Training of Fire fighting and Emergency planning preparedness All partners have the list of total employees, Wherein covered for Trainings (WAH / CSE / Fire fighting etc..)
10	List of first aiders - Contract Partners (Notice boards / Enrolments in Shifts)
11	HSE Training mandatory When person joins after 90 days (If Applicable)
12	100 % of PTW (Names on Permit, Duly signed and Evidenced extension of permits) - Audit records and compliance status
13	Communication of HIRADEC / JSA, Job methodology availability in tool box talk - Understood by Worker at Ground level (Random Inspection)
14	Handling, disposal and segregation of waste/ Scrap generated during construction & from packing materials; Segregation, weighing at TSPL inside WB & disposal at TSPL scrap yard on periodic basis to ensure housekeeping
15	Store audit (Scrap of all waste materials, Lanyards, Full body harness & PPEs) - All records of discarded items kept ready
16	List of Workforce certified for WAH & CSE (Revised list to be send by contract partners Excl Person left)
17	Working conditions of Contract partners (improvement in office conditions / rest sheds)
18	Provision for Drinking water / Sanitation facilities / Proper lunch Arrangements
19	Stop Unintended use of Hydrants - Communicate, Followed by compliance
20	Records of PME / Six monthly examination
21	Risk assessment of Manual handling, Along with action plan and compliance
22	Maintenance of Panels, Open wiring, Earth pit markings, ELCB Checking & Removal of all hanging cables
23	No unauthorized entry to electrical panels, enclosures, control centers, substations and equipment (Notice to be kept at all doors)
24	Inspection records of Electrical panels / Ground continuity & Electrical safety devices
25	Good conditions of vehicle as per checklist (Risk Assessment)
26	All drivers must to trained and authorized by Contractor HSE team (Use of Wheel choke 100 % Compliance / Seat belts / Talking while Driving)
27	Medical fitness records of all Drivers
28	Fatigue management of all drivers

29	Job specific Training Records and compliance
30	PPE Distribution and records to workers

31	All work equipments to be inspected in accordance with checklist and record to be kept
32	Leadership Visibility round and compliances
33	Objective and targets to be known to all sub-contractors
34	Scaffold compliance

17. Master list of checklist and documents

S No.	Check List Name	Schedule
1	Induction Training Record	As per Requirement
2	General Vehicle Checklist	Monthly
3	Bulker Inspection Checklist	Daily
4	Hazardous Chemical Checklist	Daily
5	Crane & Hydra Inspection	Monthly
6	Jcb Inspection	Monthly
7	Details Vehicle Audit Checklist	As per Requirement
8	Monthly Vehicle Check List	Monthly
9	Daily Vehicle Check List	Daily
10	Vehicle Drivers Assessment	Once in six month
11	Driver Behavioural Evaluation Sheet	Once in six month
12	Evaluating Each Vehicle	As per Requirement
13	Safety Belt Checklist	Monthly
14	Hand Tools Checklist	Monthly
15	Conveyor Checklist	Monthly
16	Stairs & Ladder Checklist	Monthly
17	Machine Guarding Checklist	Monthly
18	First-Aid Box Inspection Checklist	Monthly
19	Lifting Tool & Tackels Checklist	Monthly
20	Welding Machine Checklist	Monthly
21	Cutting Set Checklist	Monthly
22	Gas Cylinder Checklist	Monthly
23	Grinding Machine Checklist	Monthly
24	Pressure Vessel Checklist	Monthly
25	Electrical Checklist	Monthly
26	Hfo Area Checklist	Monthly
27	Safety Shower & Eye Wash Checklist	Monthly
28	Stores Checklist	Monthly
29	Canteen Checklist	Monthly
30	Checklist For Rigging Equipment	As per Requirement
31	Sling Inspection Checklist	Monthly
32	Training Attendance Sheet	Weekly
33	Meeting Attendance Sheet	As per Requirement
34	Mom Of Safety Committeee	Monthly
35	Near Miss Reporting Format	Daily
36	Ua-Uc-Incident Reporting Form	Daily
37	Observers Checklist Of Behaviours	Weekly
38	First Aid Report Format	As per Requirement
39	Incident Accident Investigation Report	As per Requirement
40	Height Pass Fit Checklist	As per Requirement
41	Housekeeping Checklist	Monthly
42	Safe Work Procedure	As per Requirement
43	Toolbox Talk Format	Daily



INDUCTION TRAINING RECORD

DAY/DATE/TIME:-----

VENUE: -----

AGENCY: -----

SUB AGENCY: -----

(If Any)

INDUCTION TRAINING GIVEN BY: -----

(Name & Designation)

GENERAL INDUCTION (ALL EMPLOYEES)

Safety Policy, About the project, Area & Scope of work, Idea about Incident /Accident /Nearmiss cases, Unsafe act/conditions, Reporting System, General safety rules, Durgs and Alcohol, Safety hazard communication System, Material handling, Fall protection, Excavations, Machine Guarding, Electrical Safety, Isolation of Equipment & Lockout System, Lifting work, fire prevention / Protection, Emergency preparedness, Tool Box Talk and Pre job description, traffic Safety, Available facilities, Disciplinary Procedure, HSE policy, Energy policy ,brief about TSPL layout, Location of nearest First aid and Accident reporting procedure, emergency assembly point, Types of mandatory PPE's and maintenance procedure

1. SIGNED.....2. SIGNED.....

SUPERVISOR

TRAINER

NOTES:

- A. PEOPLE ATTENDING INDUCTION SESSION COMPLETE REVERSE OF FORM
- B. FORM RETAINED ON INDUCTION RECORDS COPIED TO FILE.
- C. GATEPASS SHOULD BE ISSUED AGSINST THE ATTANDANCE SHEET.



TALWANDI SABO POWER LIMITED



INDUCTION: ATTENDANCE RECORD

I confirm that I understood the Safety requirements in terms of highlighted issues as given on overleaf page and I will follow the same. I will do my level best to do the job safely. I will not use any unsafe equipment; I will not do any work for which I am not authorized. I am also responsible for safety.

SL NO.	NAME(in Capital letter)	DESGINATION	SIGNATURE

Trainer Signature



SAFETY INSPECTION CHECKLIST FOR GENERAL VEHICLE



Doc. No. TSPL/IMS/RTS/FORM-06 Rev. No.00 Rev Dt. 01/07/2016

VEHICLE REG. NO:	TYPE OF VEHICLE :
DATE OF INSPECTION:	TRANSPORTING MATERIAL:

NAME OF THE OWNER /AGENCY :

SR.NO	CHECK POINTS	CONDITIO N			Remark s
		OK	NOT OK	NA	
1	Driver Name				
2	Driver/Operator-Valid Driving Licence				
3	Driver Not Drunk				
4	Tax Validity				
5	Insurance Validity				
6	Permit Validity				
7	Fitness Validity				
8	Pollution Under Control Certificate Validity				
9	General Condition				
10	Main Brake and Hand Brake				
11	Horn and Reverse Horn				
12	Review Mirrors in Both sides				
13	Wind Shield and Wiers				
14	Condition of Guards ,Doors &Covers				
15	Tail Door fastener- Lock Pine / Keys				
16	Condition of Hydraulic system				
17	Leakage in Cooling /Lubricating system				
18	Condition of Tyres				
19	Provision of Fire Extinguisher				
20	Availability of Wheel Chokes				
21	Are all indicators Functional				
22	Is back Horn Connected with Gear system				
23	Seat Belt				
24	Other Remarks				

Overall Fitness- OK / Not OK

Signature of Inspecting Authority	Signature of Driver	Signature of Security/EIC
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SAFETY INSPECTION CHECKLIST FOR BULKER



Doc. No. TSPL/IMS/RTS/FORM-07 Rev. No.00 Rev Dt. 19/08/2017

VEHICLE REG. NO:	TYPE OF VEHICLE :
DATE OF INSPECTION:	TRANSPORTING MATERIAL:
OWNER / AGENCY Name:	Driver's Mobile No :

SR.NO	CHECK POINTS	CONDITIO N		Remark s
		OK	NOT OK	
1	Driver Name			
2	Driver/Operator-Valid Driving Licence			
3	Driver Not Drunk			
5	Insurance Validity			
6	Fitness Validity			
7	Pollution Under Control Certificate Validity			
8	Main Brake and Hand Brake			
9	Horn and Reverse Horn			
10	Review Mirrors in Both sides			
11	Condition of Tyres			
12	Provision of Fire Extinguisher			
13	Availability of Wheel Chokes			

Overall Fitness- OK / Not OK

Signature of Inspecting Authority	Signature of Driver	Signature of Security
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SAFETY INSPECTION CHECKLIST FOR VEHICLE
Tankers / Ash Bulker



Format No- IMS/TSPL/RTS/Form-04 Rev. No-00 Rev. Dt. 1/07/2016

VEHICLE REG. NO.-	TYPE OF VEHICLE-	DATE OF INS:
--------------------------	-------------------------	---------------------

NAME OF THE OWNER /AGENCY -	MATERIAL TRANSPORTING-
------------------------------------	-------------------------------

SR.NO	CHECK POINTS	CONDITION			Remarks
		OK	NOT OK	NA	
1	Driver/Operator-Valid Driving Licence				
2	Driver Not Drunk				
3	Tax Validity				
4	Insurance Validity				
5	Permit Validity				
6	Fitness Validity				
7	UC Certificate Validity				
8	General Condition				
9	Main Brake and Hand Brake				
10	Horn and Reverse Horn				
11	Rear view Mirrors in Both sides				
12	Wind Shield and Weirs				
13	Condition of Guards ,Doors &Covers				
14	Tail Door fastener- Lock Pine / Keys				
15	Condition of Hydraulic system				
16	Leakage in Cooling /Lubricating system				
17	Condition of Tyres				
18	Provision of Fire Extinguisher				
19	Trained Banksman /Helper				
20	Availability of Wheel Chokes				
21	Are all indicators Functional				
22	Is back Horn Connected with Gear system				
23	TREM card Availability				
24	Spark Arrester				
25	HAZCHEM code Printing				
26	Same Materials as Marked in Vehicle				
27	Other Remarks				

Overall Fitness-OK/ Not OK

Signature of Inspecting Authority

Signature of Security

Driver Signature

Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR CRANE/HYDRA

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\09 Rev. No-00 Rev. Dt. 24/12/2014

Vehicle Reg. No.-		Date:		Done By:	
Type of Vehicle-		Area-		Company-	
Sl. No.	Item	OK	NOT OK	NA	Remarks
1	Proper & Valid Registration documents				
2	Registration Number written on front and back				
3	Date of last servicing				
4	Next service due date				
5	Proper & Valid load test certificate				
6	Maximum Safe Working Load displayed				
7	Load chart available				
8	Operator having HMV license and adequately trained				
9	Trained Rigger available				
10	Hook and Hook Latch				
11	Over-Hoist Limit Switch				
12	Boom-Limit Switch				
13	Boom Angle indicator				
14	Boom-Limit cut-off switch				
16	Swing Brake & Lock				
17	Propel Brake & Lock				
18	Hoist Brake & Lock				
19	Boom Brake & Lock				
20	Main clutch				
21	Leakage in hydraulic cylinders				
22	Out riggers fully extendable				
23	Condition of Battery and Lamps				
24	Moving and rotating parts guarded				
25	Reverse horn				
26	Fire Extinguisher in operators cabin				
27	Condition of tyres				
In addition to the above, prior to all major lifting operations, the following to be checked:					
1	Soil Condition				
2	Stability of crane				
3	Size and condition of the sling				
4	Condition of boom				
5	Condition of Ropes				
6	No. of load lines				
7	Lifting procedure established and assessed				

Inspecting Authority Sign

Driver / Operator Sign

STEAG Verification Authority



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR JCB

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\09 Rev. No-00 Rev. Dt. 24/12/2014

Vehicle Reg. No.-		Date:		Done By:	
Type of Vehicle-		Area-		Company-	
Sl. No.	Item	OK	NOT OK	NA	Remarks
1	Valid Driving license				
2	Valid Road tax certificate				
3	Valid Insurance certificate				
4	Valid Pollution under control certificate				
5	Valid Fitness Certificate				
6	Vehicle Registration certificate				
7	Valid Permit Certificate				
8	Steering cylinder pin & bush play (No excess Play)				
9	Rear view mirror, one inside cabin & one each in both side of cabin (Physical condition)				
10	Horn (Audible)				
11	Seat belt in usable condition				
12	Reversing Horn & light (Audible & rear clear visible)				
13	Cabin, door, window glass, seats (Physical condition)				
14	Tyre condition (Physical condition with visible trade, No resole or worn out tyre in front)				
16	Body condition (Standard physical condition)				
17	Hand brake (Physical condition & effectiveness vehicle should not roll down)				
18	Front wind glass (Clear Visibility with no crack or no scratch mark on glass)				
19	Wheel brake (Physical condition & effectiveness -				
20	Vehicle should not roll down				
21	Shovel bucket pins & bush connected with stick, link & arm (No excess play)				
22	Boom foot pin & bush play (No excess play)				
23	Dozer blade connected pin & bush (No excess play)				
24	Wiper blade Assy. (Working)				
25	Head light & dipper light with proper focus				
26	Blinker light with audible buzzer (Audible & visible from 30 metres)				
27	Brake & parking light (Visible from 30 meters)				
28	Oil leakage (if any) External, internal of cylinder				
29	Number plate (clear visible as per M.V.ACT)				
30	Foot rest (Physical condition)				
31	Roof light, boom light with proper focus				
32	Bucket tooth point in good condition				

Inspecting Authority Sign

Driver / Operator Sign

STEAG Verification Authority

ROAD SAFETY AUDIT CHECKLIST USED FOR EVALUATING EACH VEHICLE

S.No	CHECKPOINT	WHAT TO CHECK	ISSUES-YES/NO	REMARK & FEEDBACK	PRIORITY (H/M/L)	ACTION PLAN	
						RESPONSIBILITY	DATE
1	1 Certificate of Registration	Certificate of Registration (Form-23) availability					
	2 Valid Road permit	Available, Validity					
	3 Valid Road Tax payment rec	Available, Validity					
	4 Valid Insurance Papers	Available, Validity					
	5 Valid Annual Fitness Certific	Available, Validity					
	6 Valid Driving Licence of the Driver	Available, Validity					
A Body							
1	Cabin	Denting, loose mountings					
2	Doors	Bend, denting, handle mountings					
3	Panels	Intact, glasscrack,mountings					
4	Chassis	Bend, corrosion, mountings, Road Sprigconnctivity, Bushes					
5	security locks	Check Fueltank, Toolbox, battery, racks, load/luggag a locks intact					
6	Rear View Mirror	Mountings, Visibility					
B Interiors							
1	Upholstery	All seats, neat Fitting, clean					
2	Cabin roof	No loose hangings, Clear Fitting					
3	Door Panels	Bennd, denting, handle, mountings					
4	Instrumentation Panel	Intact, glasscracks, mountings Function					
5	Driver Seat	Mountings, adjustments, clean					
6	Co-passenger Seat	Mountings, adjustments, clean					
7	Seat Belt & usage	Retractable, mountings, clean					
C Engine							
	Engine starting	Key positions, bend, clamp,groove					
	Throttle operation	No revving/no stalling					
	leakage	Check for any leakages					
	(a) Engine oil	Level & viscosity					
	(b) Coolant	Level up to the mark					
	©Air	Fillter ,oil , level , mountings					
	(d) fluids	Level & viscosity					
	Engine mountings	Bolts tightened,Washers					
D Brakes							
1	Brake operation	Spongy,Pedal Play & pressure,bends,no slippery					
2	Brake Air/Fluid Leakage	fluid level, grade/air brake pressure					
3	Parking brake	knob, mounting, movement					
4	Brake fluid / tanks / reservoi	Level & viscosity, mountings					
E Clutch							
1	Clutch operation	Spongy, easy engagement of gear					
2	Clutch engagement	Pedal spongy, play & pressure					
F Suspension							
1	Springs	Leafs U- clamps, mounting, broken,greasing					
2	Shock absorbers	Leakages, pressure,mounting					
3	Shackle & 'U' Bolts	Intact					
4	Body Mountings	Mounting to chassis with proper position					
5	Fluid leakage	in shockers or any					
6	Lubrications	Greasing					
G Differential & Gear Box							
1	Differential	Bend any Leakages					
2	Mounting	Tightened					
3	Gear Box	Leakages mountings, no cable hangings					
4	Steering gear Box	Leakages mountings, lubrication					
5	Oil level deferential	Level & viscosity					
6	Propeller Shaft	Bend, front & rear and mountings					
H Axle							
1	front axle	Bend , Mounting					
2	Rear axle	Bend , Mounting					
3	Rear axle deformation	Bend , Mounting					
4	Axle bolts	Tightened					
I Electricals							
1	Starter	Mounting,no loose cables,leakage					
2	alternator	Mounting,no loose cables,leakage					
3	Head lamp	Focus,clear, clean,bulb,no broken glass					
4	Tail lamp	Focus,clear, clean,bulb,no broken glass					
5	Diper switch	Focus with Diper switch function					

6 Horn

Buttom, valume, clear, function,



	7	Wind shield wiper	cracks,bending,clear and clean					
	8	instrumentation panel	panel glass clear, mountings,function					
	9	stop lights	Focus,clear, clean,bulb,no broken glass function					
	10	Indicators						
		a) Left Front	Focus,clear, clean,bulb,no broken glass function					
		b) Left rear	Focus,clear, clean,bulb,no broken glass function					
		c) Right front	Focus,clear, clean,bulb,no broken glass function					
		d) Right rear	Focus,clear, clean,bulb,no broken glass function					
	11	cabin lights	Focus,clear, clean,bulb,no broken glass function					
	12	switches	Cheak for functioning, properly					
	13	warning harness	Clamed, no loose wiring					
	14	Reserve lights	Function, reversetone, bulb, clean & clear					
	15	brake lights	Focus,clear, clean,bulb,no broken glass function					
	16	Electrical connection & routi	Cables clamped, no loose fittings					
	J	Exhaust						
	1	Exhaust manifolds	Mountings, intact					
	2	Exhaust selincer	No lrakages, mountings					
	3	Exhaust nut/bolts	Tightened					
	4	Muffler & pipe condition	No Leakages, mountings					
	K	Glass & Others						
	1	Wind shield	Cracks, bending, clear & clean					
	2	Cabin driver side	Functioncracks, Clear & clean					
	3	Cabin cleaner side	Functioncracks, Clear & clean					
	4	Tank covers	Intact					
	5	Ladder	Mountings					
	6	Bumpers						
		a) Front	Mountings, bend/denting					
		b) Rear	Mountings, bend/denting					
	7	Statutory warnings	Reflectives, display, board, clear vision					
	L	Proprietary parts						
	1	Battery	Level, terminals, mounting, cables					
	2	Tyres Front- left	pressure, cut stones, flints					
		a) Front right	pressure, cut stones, flints					
		b) Rear left inner	pressure, cut stones, flints					
		c) Rear left outer	pressure, cut stones, flints					
		d) Rear Right Inner	pressure, cut stones, flints					
		e)Rear Right Outer	pressure, cut stones, flints					
	3	Fuel pupm	Mountings, leakages, routing					
	4	Fire Extinguisher	Mounting, expireddate, position					
	M	Miscellaneous						
	1	Radiator	Fins/grill clear, mounting					
	2	Radiator Cap	Function					
	3	Radiator Coolant/leakage	Level, any leakages					
	4	Oil tank	Level, any leakages					
	5	Diesel tank	Level, leakages, mountings					
	6	Fuel tank/ locker	Locker availabilty					
	7	Fan belt	loose					
	8	Wheel Nut/ bolt	Tightened					
	9	Tyre pressure	As per specifications					
	10	Spare tyre mounting	Mounting, pressure					
	11	Radiator shroud	Shroud/grill clear					
	12	Whether safety Triangle is vehicle	Available, intact, reflective					
	13	First aid available in the vehi	Available, intact, placed					
3	1	General appearance & condition of cabin , chassis	Cleaned, painted					
	2	Dent , Rust , paint on - chassis, cabin or upper structure	Apperance, bend, paintcondition, marks					
	3	Neatness of advertising disply	Display board clear, visibility					
	4	No unwanted material in cargo/cabin area	Loose items, rags, clear					



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR VEHICLES

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\RTS\FORM\08 Rev. No-00 Rev. Dt. 24/12/2014

Area:	Date:	Contractors Name	Done By:
S.No.	Particulars Details	Contractors Name	
1	Registration no		
2	Type of the Vehicle		
3	Name of the Owner		
4	Driver Name		
5	Driver/Operator - Valid Driving Licence		
6	Tax valid till		
7	Insurance valid till		
8	Permit valid till		
9	Fitness valid till		
10	PUC certificate valid till		
11	General condition		
12	Main Brake and Hand Brake		
13	Horn and Reverse Horn		
14	Rearview Mirrors		
15	Wind Shield and Wipers		
16	Approved type Spark Arrestor		
17	Condition of guards, doors & Covers		
18	Tail door fastener-Lock Pines/Keys		
19	Condition of Hydraulic System		
20	Leakage in Cooling system		
21	Leakage in Lubrication system		
22	Condition of Tyres		
23	Provision of Fire Extinguisher		
24	Trained banksman/Helper		
25	Last Service date		
26	Next Service due on		
27	Vehicle permission at site valid till		
28	Other Remarks		
29	Seat Belt		
FIT / UNFIT FOR SITE WORK			Auditee Signature
			Auditee Name



Talwandi Sabo Power Limited
DAILY VEHICLE CHECKLIST

(checks to be conducted before use of the vehicle)

Doc. No- IMS\TSPL\SAFETY\FORM\08 Rev. No-00 Rev. Dt. 12/10/2016

Vehicle registration no:		Vehicle make/type:			
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√ = satisfactory/available X = defective/missing N/A = not applicable, Write comment incase of requirment

S.No.	Items	Date				
1	Condition windscreen, windows, Wipers					
2	Cleanness of windscreen, windows, mirrors, lights, number plate					
3	Condition of tyres, tyre pressure					
4	Availability of spare wheel & jack					
5	Oil level engine,Coolant,Brake/Clutch/Powersteering					
6	Condition of battery					
7	Oil or waste leaks					
8	Condition of Seat belt					
9	First aid kit					
10	Fire extinguisher					
11	Torch					
12	Warning triangle					
13	Warning light					
14	Horn					
15	Brake					
16	Fuel					
Driver's signature:-						
Driver's Name:-						



Talwandi Sabo Power Limited



VEHICLE DRIVER ASSESSMENT

IMS\TSPL\RTS\FORM\03 Rev. No-00 Rev. Dt. 1/07/2016

Introductory Details:-

Name		Date Of Birth	
Date Of Assessment	Location		Vendeor
Licence Details		Location Type	
Traffic	Light/Medium/Heavy	Weather	Fair/Inclement

Driver Assessment Activity Wise

S.No	Activities	Marks Scored	Max. Marks	Comments
1	Pre-driving checks		5	
2	Before Moving all seat belts fastened/adjusts mirrors		5	
3	Moving & merging		5	
4	Turnings L&R (lane selection, speed,observation, anticipation)		5	
5	Observation and scanning (checks mirrors every 5-8 seconds) moves eyes constantly-360" awareness. Rear observation (When braking "foot on brake, eyes on mirrors)		10	
6	Adequate stopping distance (stop 1/2 vehicle length behind vehicle ahead)		2	
7	Compensates early for obstacles		5	
8	anticipates light changes- avoids sudden stops		5	
9	Before entring intersecations slow down, scan, observe,eye,contact		5	
10	Avoid driving with only one hand		2	
11	Maintains 2 to 4 seconds following distance		5	
12	Avoid driving in others blind spots		3	
13	Overtaking/passing		5	
14	Strive to ride alone - out of the pack		3	
15	Lane selection & management		5	
16	Hazard perception		5	
17	Appropriate speed selection		5	
18	Non aggressive, courteous, calm,patient, attitude		5	
19	Control management (gear clutch, acceleration)		10	
20	Reversing & parking		5	
Total			100	

Checked By:

Recommendation by Traffic Manager

Signature



Talwandi Sabo Power Limited



Doc. No- IMS\TSPL\RTS\FORM\10 Rev. No-00 Rev. Dt. 13/10/2016

Driver Behavioural Evaluation Sheet

Name Of the Driver :	Gate Pass No:	
Company Name :	Date Of Evaluation	

Give Tick Mark in Positive or Negative Column

S.No	Particulars	Positive	Negative	Remarks
1	Adherence of pre trip inspection of vehicle and emergency equipments			
2	Awareness of emergency equipments and skill of tyre changing, spare fuses, emergency warning driving etc.			
3	Adjustment with vehicle like mirror and other instruments, understanding of instruments			
4	Adherence of driving skill and uses of clutch, brake, light (Dim light, auxiliary light etc.)			
5	Using of braking and reversing of vehicle by using mirror			
6	Parking of vehicle at appropriate location			
7	Driving ability: uses of brake smoothly, uses of gear smoothly, stopping and starting without rolling backward movement			
8	Maintaining of vehicle speed as per traffic rules			
9	Knowledge of traffic signal and its adherence			
10	Aggressive driving such as no speed maintaining at crowded area, unnecessary uses of horn			
11	Specific behaviour such as uses of seat belt, react in changing condition, distracted by phone, radio ,GPS etc.			
12	Nervousness, apprehensive in case of emergency			
13	Complains too much			
14	Professional and personal appearance (Manner with Passengers)			
Checked By:				

Recommendation by Traffic Manager

Signature



Talwandi Sabo Power Limited

ROAD SAFETY AUDIT CHECKLIST USED FOR EVALUATING EACH VEHICLE

No- IMS TSPL RTS FORM 2 Rev. No-00 Rev. Dt. 1/07/2016

S.No.	CHECKPOINT	WHAT TO CHECK	ISSUES-YES/NO	REMARK & FEEDBACK	PRIORITY (H/M/L)	ACTION PLAN	
						RESPONSIBILITY	TARGET DATE
Statutory							
A	1	Certificate of Registration	Certificate of Registration (Form-23) availability				
	2	Valid Insurance Papers	Available, Validity				
	3	Valid Annual Fitness Certificate	Available, Validity				
	4	Valid Driving Licence of the Driver	Available, Validity				
Body							
B	1	Doors	Bend, denting, handle mountings				
	2	security locks	Check Fuel tank, Toolbox, battery, racks, load/luggage a locks intact				
	3	Rear View Mirror	Mountings, Visibility				
Interiors							
C	1	Upholstery	All seats, neat Fitting, clean				
	2	Cabin roof	No loose hangings, Clear Fitting				
	3	Door Panels	Bend, denting, handle, mountings				
	4	Driver Seat	Mountings, adjustments, clean				
	5	Co-passenger Seat	Mountings, adjustments, clean				
	6	Seat Belt & usage	Retractable, mountings, clean				
Engine							
D	1	Engine starting	Key positions, bend, clamp, groove				
	2	leakage	Check for any leakages				
	3	(a) Engine oil	Level & viscosity				
	4	(b) Coolant	Level up to the mark				
	5	@Air	Filter ,oil , level , mountings				
	6	(d) fluids	Level & viscosity				
	7	Engine mountings	Bolts tightened, Washers				
Brakes							
E	1	Brake operation	Spongy, Pedal Play & pressure,bends,no slippery				
	2	Brake Air/Fluid Leakage	fluid level, grade/air brake pressure				
	3	Parking brake	knob, mounting, movement				
	4	Brake fluid / tanks / reservoir	Level & viscosity, mountings				
Clutch							
D	1	Clutch operation	Spongy, easy engagement of gear				
	2	Clutch engagement	Pedal spongy, play & pressure				
Suspension							
E	1	Springs	Leafs U- clamps, mounting, broken, greasing				
	2	Shock absorbers	Leakages, pressure, mounting				
	3	Shackle & 'U' Bolts	Intact				
	4	Fluid leakage	in shockers or any				
	5	Lubrications	Greasing				
Differential & Gear Box							
F	1	Mounting	Tightened				
	2	Gear Box	Leakages mountings, no cable hangings				
	3	Oil level deferential	Level & viscosity				
Axle							
G	1	front axle	Bend , Mounting				
	2	Rear axle	Bend , Mounting				
	3	Axle bolts	Tightened				
Electricals							
H	1	Starter	Mounting, no loose cables, leakage				
	2	Head lamp	Focus, clear, clean,bulb,no broken glass				
	3	Tail lamp	Focus, clear, clean,bulb,no broken glass				
	4	Dipper switch	Focus with Dipper switch function				
	5	Horn	Buttom, volume, clear, function,				
	6	Wind shield wiper	cracks, bending, clear and clean				
	7	instrumentation panel	panel glass clear, mountings, function				
	8	stop lights	Focus, clear, clean,bulb,no broken glass function				
	9	Indicators					
		a) Left Front	Focus, clear, clean,bulb,no broken glass function				
		b) Left rear	Focus, clear, clean,bulb,no broken glass function				
		c) Right front	Focus, clear, clean,bulb,no broken glass function				
		d) Right rear	Focus, clear, clean,bulb,no broken glass function				
	10	cabin lights	Focus, clear, clean,bulb,no broken glass function				
	11	switches	Cheak for functioning, properly				
	12	brake lights	Focus, clear, clean,bulb,no broken glass function				
	13	Electrical connection & routing	Cables clamped, no loose fittings				
Exhaust							
I	1	Exhaust silencer	No leakages, mountings				
	2	Exhaust nut/bolts	Tightened				
	3	Muffler & pipe condition	No Leakages, mountings				
Glass & Others							
	1	Bumpers					



J	a) Front	Mountings, bend/denting					
	b) Rear	Mountings, bend/denting					
	2	Statutory warnings	Reflective, display, board, clear vision				
Proprietary parts							

K	1	Battery	Level, terminals, mounting, cables				
	2	Tyres Front- left	pressure, cut stones, flints				
	a)	Front right	pressure, cut stones, flints				
	b)	Rear left inner	pressure, cut stones, flints				
	c)	Rear left outer	pressure, cut stones, flints				
	d)	Rear Right Inner	pressure, cut stones, flints				
	e)	Rear Right Outer	pressure, cut stones, flints				
	3	Fuel pump	Mountings, leakages, routing				
	4	Fire Extinguisher	Mounting, expired date, position				
	Miscellaneous						
L	1	Radiator	Fins/grill clear, mounting				
	2	Radiator Cap	Function				
	3	Radiator Coolant/leakage	Level, any leakages				
	4	Oil tank	Level, any leakages				
	5	Fuel tank/ locker	Locker availability				
	6	Fan belt	loose				
	7	Wheel Nut/ bolt	Tightened				
	8	Tyre pressure	As per specifications				
	9	Spare tyre mounting	Mounting, pressure				
	10	Whether safety Triangle available	Available, intact, reflective				
	11	First aid available in the vehicle	Available, intact, placed				
	12	No unwanted material in cargo/cabin area	Loose items, rags, clear				



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR WELDING MACHINE

WILL BE DONE BY AREA INCHARGE ON MONTHLY BASIS

Format No- IMS\TSPL\SAFETY\FORM\10 Rev. No-00 Rev. Dt. 24/12/2014

Name of Contractor

Date:

Welding Machine Check list

Sl. No.	Tag No	Area	Physical Condition of Welding Machine (Good / Poor)	Electrical power source provided with Industrial Power plug & Socket	Physical condition of Power cable & Lead cables	Are Earth Leakage Circuit Breakers installed in each W/M (< 30ma)	Earthing of Welding M/c Earthing	Earthing and condition of Power source DB	No loose connection / Connection with proper LUGS & Insulated	Fully Insulated welding rod Holder	ELCB tested by Testing Kit	Value of Earth resistance checked	Remarks

Signature of Electrician

Signature of Area I/c

Vrification of Contractor Safety Officer



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR GAS CYLINDER

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\12 Rev. No-00 Rev. Dt. 24/12/2014

Area:	Date-	Done By:			
WELDING MACHINE NUMBER					
S.N.	Check Points				
1	Whether cylinders are stored in upright positions and immobilized by chains.				
2	Are cylinders stored away from highly flammable substances and electrical connections.				
3	Segregation Of Oxygen and other flammable gases.				
4	Check for storage area permanently posted with the names of the gases stored in the cylinders				
5	Whether Workers Move the compressed gases in hand trolley				
6	Protective cylinder valve caps/guards.				
7	Usage of proper tool for closing and opening of valves.				
8	Whether the empty and full cylinders are stored separately.				
9	Provision of cage for shifting of cylinders.				



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR GRINDING MACHINE

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\13 Rev. No-00 Rev. Dt. 24/12/2014

GRINDING MACHINE NUMBER													
S.No.	Check Points												
1	Condition of body covers / Electrical Insulation												
2	Provision of Wheel-guard												
3	Provision of three core Electrical cable												
4	Coloured insulation of the internal wires not showing from outside												
5	Card grip holding the outer covering (Sheath) of the cable tightly												
6	Cable free from signs of damage (Cuts or abrasion)												
7	Provision of Earthing												
8	Provision of Electrical Plug Top												
9	Outer covering (Sheath) of the cable tightly gripped where it enters the Plug												
10	Wheel RPM matching with machine RPM												
11	Availability of Face Shield/Safety Goggles and Gloves for grinder												

* S - Satisfactory

NS - Not Satisfactory

NA - Not Applicable





Talwandi Sabo Power Limited

**SAFETY INSPECTION CHECKLIST FOR ELECTRICAL****WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS**

Doc. No-IMS\TSPL\SAFETY\FORM\15 Rev. No-00 Rev. Dt. 24/12/2014

Area:	Date:	Done By:			
Sl. No.	Item	S	NS	NA	Remarks
GENERAL					
1	Whether electricians are qualified, trained and authorized?				
2	Whether Electricians are available during the entire work hours				
3	Whether appropriate and approved types of PPEs are being used by electricians?				
4	Whether work on equipment is conducted after proper isolation?				
CABLES					
1	Whether the condition of cables is checked regularly?				
2	New cables and cables received from other sites checked for Insulation Resistance before putting them into use?				
3	Are all main cables, taken either underground / overhead above 7'?				
4	Are welding cables routed properly above the ground without causing stumbling hazard?				
5	Are welding & electrical cables overlapping?				
6	Is there any improper jointing of cables and wires prevailing at Site?				
7	Is there any insulation damages prevailing around cable joints?				
8	Whether cables protected from sharp edges, nails, bolts, overrunning of vehicles etc.?				
9	Whether extension boards (if used) are of non-combustible material?				
10	Whether any temporary connection not in use for more than 8 hours?				
11	Are safe distances from overhead transmission lines (>6 mtrs) maintained?				
12	Are overhead preventive barricading and warning signs provided?				

S.N.	Checking Areas	Deviation Observed
1	Cable Trays	
2	wires	
3	DB's	
4	Junction Boxes	
5	Earth Pits	
6	Cable Cellars	
7	Sub Stations	

DISTRIBUTION BOARDS

1	Whether metallic boxes with covers/doors are in use?				
2	If not, whether DBs&extension boards are protected from rain/water?				
3	Is energised wiring in junction boxes, CB panels & similar places covered all times?				
4	Is earth conductor continued upto DB/SDB?				
5	Whether correct/properly rated fuses & circuit breakers provided at main boards & sub- boards?				
6	Is there any overloading of DBs/SDBs?				
7	Whether a clear approach to DBs/				
	SDBs and free of obstructions is maintained at all times?				

ELCB				
1	Whether all the connections are routed through ELCB?			
2	Whether all ELCBs are numbered & tested periodically?			
3	Whether ELCB test records countersigned by competent person are maintained at site?			
4	Whether ELCBs sensitivity maintained at 30 mA?			
EARTHING				
1	Is neutral and double earthing ensured at the source of power (Main DB at Generator or Transformer)?			
2	Whether the continuity & tightness of earth conductor are checked? (Check for broken earthing strips) detached earthing			
3	Whether specified gauge of earth conductor is used at all places of earthing?			
4	Mention the value of Earth Resistance.			
5	Whether Insulated rubber mats are provided wherever required?			
ELECTRICALLY OPERATED MACHINES / HAND TOOLS				
1	Whether all the equipment used at site are of approved type?			
2	If connection is given to driving equipment i.e., welding machine, grinding machine etc., whether machine is inspected and status displayed on it?			
3	Whether guards are provided on all rotating/moving parts of the equipment?			
4	Whether cable is exposed at the point of entry into the equipment?			
5	Whether industrial sockets and plug tops are provided everywhere?			
6	Are all metal parts of electrical equipment's light fittings/accessories grounded?			
7	Is there any shed / cover for welding machines?			
8	Whether on/off switches to the equipment and portable tools in working condition?			
9	Are Portable power tools maintained as per norms?			
10	Whether hand lamps used are less than 24 volts?			
11	Whether hand lamps are provided with guards to prevent accidental damage?			
ILLUMINATION				
1	Are Halogen lamps fixed at proper places?			
2	Whether specified illumination levels are maintained at all work places?			
EMERGENCY EQUIPMENT/PREPAREDNESS				
1	Whether suitably protected with Fire extinguishers and sand buckets?			
2	Whether records for emergency equipment are maintained?			
3	Whether first aid instructions in case of electric shock are displayed?			
* S - Satisfactory		NS - Not Satisfactory		NA - Not Applicable



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR HFO AREA

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc.No-IMS\TSPL\SAFETY\FORM\16 Rev. No-00 Rev. Dt. 24/12/2014

Area:		Date:		Done By:		
S.no	Check List	S	NS	NA	Remarks	STATUS
1.	No Smoking Board.					
2.	Sand Bucket.					
3.	Fire Extinguishers.					
4.	Dry Grass Growth.					
5.	Other Debris.					
6.	Oil Spillage.					
7.	Illumination.					
8.	Dyke Wall.					
9.	Fencing & Gate.					
10.	Bonding Provision.					
11.	Breather.					
12.	Safety Valve.					
13.	Roto Meter.					
14.	Level Indicator.					
15.	Water /Foam Monitor.					
16.	Water Spray System.					
17.	Sump Condition.					
18.	Water Drain.					
19.	Painting.					
20.	MSDS availability & condition of board.					

*** S - Satisfactory NS - Not Satisfactory NA - Not Applicable**



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR SAFETY SHOWER & EYE WASH

WILL BE DONE BY AREA INCHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\17 Rev. No-00 Rev. Dt. 24/12/2014

Area:		Date:	Done By:													
S.N.	Check List	S	NS	NA	S	NS	NA	S	NS	NA	S	NS	NA	S	NS	NA
EYE WASH																
1	Condition of the cushion flow atomiser															
2	Condition of the bowl															
3	Condition of the actuating valve															
4	Condition of the actuating valve closing spring															
5	Actuating valve foot pedal															
6	Chain link, connecting the actuating valve and foot pedal															
SAFETY SHOWER																
7	Condition of the actuating valve															
8	Condition of the actuating valve lever															
	I) Valve opening lever															
	ii) Valve closing lever															
9	Condition of the shower distributor disc															
STANDING PLATFORM & DRAIN																
10	Is the standing platform adequate?															
11	Whether proper draining facility is available?															
ACCESSIBILITY																
12	Whether the safety shower is free from obstruction?															
WATER AVAILABILITY & PRESSURE																
13	Is the availability of water for the shower & eyewash ensured round the clock?															

* S – Satisfactory NS – Not Satisfactory NA – Not Applicable

Talwandi SaboPower Limited



SAFETY INSPECTION CHECKLIST FOR STORES

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPPL\SAFETY\FORM\18 Rev. No-00 Rev. Dt. 24/12/2014

Area:	Date:	Done By:		
Sl. No.	Items			
ACCESS TO STOCKED MATERIAL				
1	Free and Clear access without obstructions to all storage racks.			
2	Provision of ladders to reach elevated storage racks.			
3	Condition and length of ladder			
ELECTRICAL				
1	Condition of Lights, Fans and Switches			
2	Maintenance of Panel Boards			
3	Proper Earthing			
4	Routing of power supply through ELCB.			
5	Provision of plug tops to temporary connections.			
6	Condition of extension cables			
7	Sufficient illumination levels			
HOUSE KEEPING				
1	Provision of waste bins			
2	Removal and disposing of Packing waste periodically			
3	Maintenance of surround areas clear (cutting grass and removing other combustible from nearby places)			
4	Segregation of Flamable liquild			
5	List of Items			
FIRE EXTINGUISHERS				
1	Provision of sufficient no. of fire extinguishers covering the entire storage area			
2	Maintenance of access clear of obstacles			
3	Maintenance Condition			
4	Water and sand buckets in place			
FIRST AID				
1	Provision of First Aid box in store			
2	Maintenance of first aid box contents			
* S - Satisfactory NS - Not Satisfactory NA - Not Applicable				



Talwandi Sabo Power Limited



SAFETY INSPECTION CHECKLIST FOR CANTEEN

WILL BE DONE BY AREA IN CHARGE ON MONTHLY BASIS

Doc. No- IMS\TSPL\SAFETY\FORM\19 Rev. No-00 Rev. Dt. 24/12/2014

Area:	Date:	Done By:
Sl. No.	Item	Remarks
1	Is the Grating Covered at all times on drainage inside the kitchen	
2	Are the safety valves for the steam producing boiler functioning promptly	
3	Are all the materials kept on the appropriate place	
4	Fire/Smoke detector condition inside kitchen*	
5	Is there any gas leakage on the LPG pipe line	
6	Can the fire extinguisher be easily approached in LPG storage area*	
7	Is there any damage on LPG storage shed*	
8	Are all the insulation are proper on steam pipeline	
9	Is the safety valve functions properly for electrical operated boiler*	
10	Is Guard provided at all times for machine used to knead the flour to prepare the chapatti batter	
11	Is the blockage of trench around canteen	
12	Does the flow meter for intake water for canteen function properly*	
13	Are all the pre cooked food items utilized in FIRST IN FIRST OUT basis	
14	Are all the canteen workers changing their clothes in daily basis	
15	Are all the utensils washed by sterilized water	
16	Are all the utensils maintained with out rust/Stains	
17	Are all the electrical DBs/wirings/Outlets/ELCB inspected by electrician in regular basis	
18	Are the water storage tank cleaned regularly	
19	Is the overflow water from storage tank being properly drained*	
20	Are the side dishes (Pickle/Salt/Sugar) being consistently changed to avoid prolong use	
21	Is guard/ Cover provided at all times to all grinder wheel	
22	Is guard provided at all times for coconut grinder attached at grinder	
23	Are pallets being regularly changed which is used to stand at queue	
24	Are the light covers at mess hall consistently checked by electrical dept.	
25	Is the liquid soap solution available at all times at hand wash location*	
26	Are the persons involve in boiler operation well trained	
27	Are the mess hall chair being regularly checked to ensure the good condition	
28	Are all the waste being properly segregated	
29	Medical	
30	Display	

RIGGING EQUIPMENT

DATE-----

Parameters of Inspection	Yes	No
Does the contractor have an inspection program for rigging equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is there documentation by contractors for all rigging equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is defective-rigging equipment tagged and removed from service?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is rigging equipment protected from mud, dirt and chemical exposures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are rigging and lifting devices properly designed and installed for the task?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are softeners used to protect from damage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are chain-falls and max pullers prevented from being used as slings?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are employees prevented from walking under loads?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are containers covered and spillage prevented?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is a competent person assigned to all rigging activities?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are lifting beams stamped with the capacity of the beam?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Wire Rope Slings		
Are SWL marked and Test Certificate available?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the sling stored properly?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is it free from rusting, abrasion, cut marks, pressing, denting, bird caging, twist, kinks or core protrusion?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the sling free from wires broken or number of broken wires less than acceptable standard (i.e. <6 wires in a layer or 3 wires in a strand)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the sling dia. uniform throughout the length? (Reject for >10% or more reduction).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the sling mechanically spliced? (hand spliced or wire rope clamps not allowed)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Belt Sling		
Is the belt sling tested and certified and SWL marked conspicuously?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is it free from exposure to corrosive, cuts, burn, and abrasion?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Free from any scratch, cut upto 1/10th of the belt width at any place?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
All sewn joints intact and nowhere it is separated?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Dee or Bow Shackle		
Is the tackle tested and certified and SWL marked on its body?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Free from any crack, dent, distortion or weld mark, wear/tear?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the pin in good shape and not distorted. Not replaced with any other materials like Nut Bolt etc?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are the eyes in a straight alignment and the threads in good condition?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

The checklist has been completed in respect of the work identified. Checked By [Contractor]

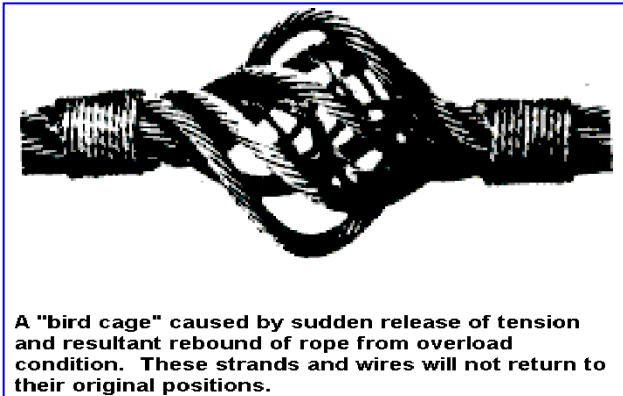
Name:

Designation:

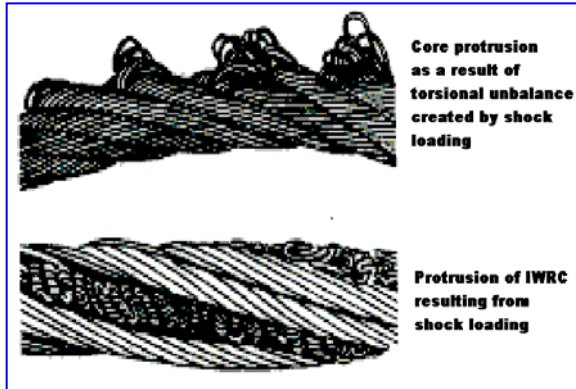
Sign:

Date:

FLAWS IN A WIRE ROPE SLING

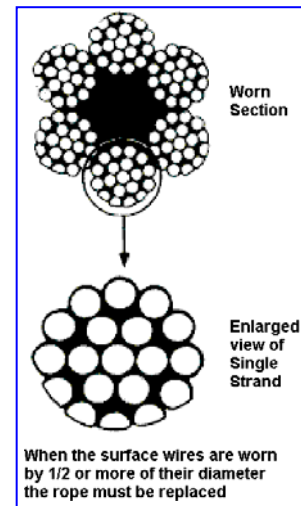
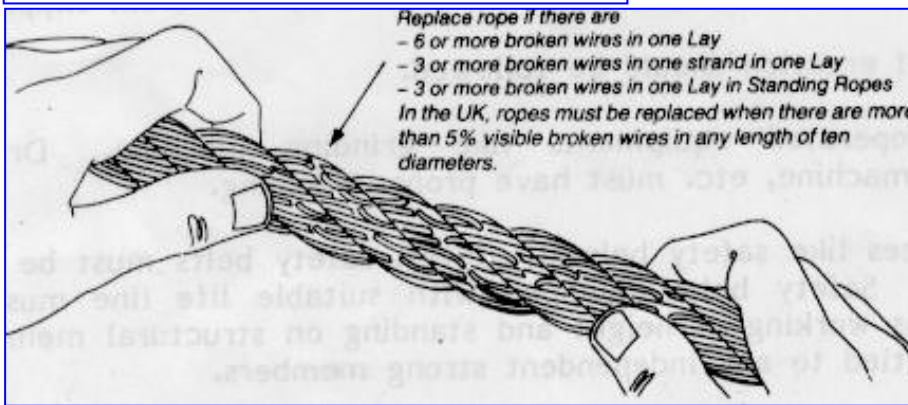


A "bird cage" caused by sudden release of tension and resultant rebound of rope from overload condition. These strands and wires will not return to their original positions.

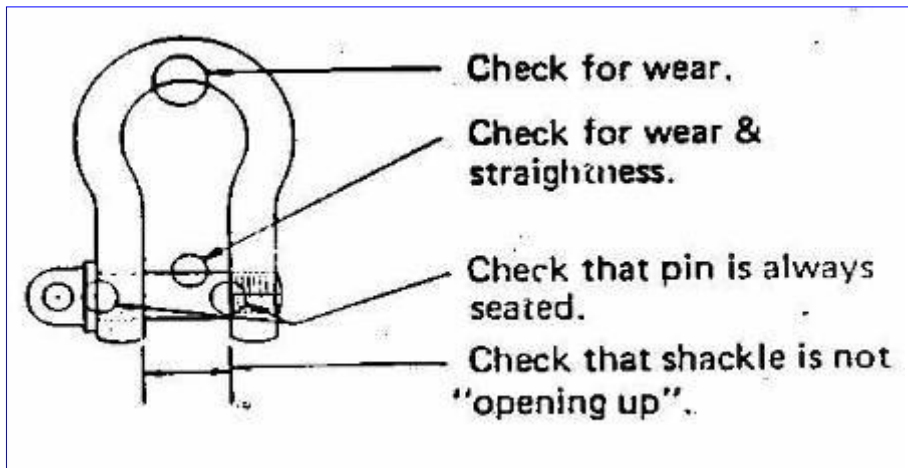


Core protrusion as a result of torsional unbalance created by shock loading

Protrusion of IWRC resulting from shock loading



FLAWS IN A DEE SHACKLE





Talwandi Sabo Power Limited



Attendance Sheet

Session:

Venue:

Time:

Date:

Sr.	Name	Company	Department	Emp.Id	Signature
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Trainer Signature

TSPL/FORM-EHS/SFT/07-00

UA/UC&IncidentReportingForm

Unsafe Condition

Unsafe Action

Dangerous

Occurrence

Name:	EmployeeNo. :	
Date:	Time :	Department:
Area:	LocationDetails:	Mob. No.:
IncidentDescription:		
PotentialCauses(Ifidentified):		
ImmediateActionTaken :		
Status:	Sign. Of HOD	



OBSERVERS CHECKLIST OF BEHAVIOURS TO GUIDE OBSERVATION TOUR

TSPL/FORM/EHS/SFT-08-00

OBSERVER Name: _____

DATE _____

DEPARTMENT / JOB _____

TIME _____

AREA OF AUDIT _____

No	BEHAVIOUR CATEGORIES	No. of Safe Behaviours	No. of At-Risk Behaviours/	No. of corrections of At-Risk Behaviours	Description of Observation / Remark
1	PPE Using PPE e.g. eye glasses, hearing protection, gloves, hard hat...				
2	Housekeeping Work area maintained appropriately, e.g. trash and scrap picked up, no spills, walkways unobstructed, materials and tools organized...				
3	Using tools and equipment Using correct tools for the job, using tools properly, and tool in good condition...				
4	Body positioning / protecting Positioning / protecting body parts, e.g. avoiding line of fire, avoiding pinch points...				
5	Material handling e.g. body mechanics while lifting, pushing and pulling, use of assist devices...				
6	Communication Verbal and non-verbal interactions that affects safety...				
7	Following procedures e.g. obtaining, complying with permits, following SOPs, lockout, tag-out procedures...				
8	Visual focusing (attentiveness)				
9	Using mobile while working				
10	Use of Pedestrian				
	Tota l				

	<p><i>Signature of Observer:</i></p>	<p><i>Signature of the HOD</i></p> 
--	--	---

INCIDENT REPORT

Preliminary Written Report on Incident/ Accident under TSPL
(To be sent within 24-hours of the accident)

To,

HSE Manager.

Name of person reporting the accident		
Project/Department		Issue Date:
Telephone No		Issue Time:

INCIDENT DETAILS					
Date		Time		Location	
Nature and brief account of incident/ accident :					
Action Taken:					
Probable cause of incident/ accident (if established) :					
Any sick, injured or killed?		Yes	No	If Yes,	
Name	N/A		Age/DOB	Gender	Male
Company			Trade		
Nature and seriousness of injury and part of the body or extent of damage:					
Hospital	N/A		Current status	OK	
Property Damage/Enviromental Damage: No damage noticed					

Any additional information should be attached to this document

First Aid Incident Investigation Report

Department :	Location:	Area Accident Enq. No.
Date & Time of incident :		
<u>Incident in brief:</u>		
Name of injured/Dept.(detail)	Designation/P. No.	Type of Injury
Body part injured:		Rest : No
Contractor :		
<u>Type of Incident</u>		
Lost Time Injury Occupational Illness	First Aid Injury Dangerous Occurrence/Near Miss	
No. of Days absent:	Resumed his duty on:	
<u>Classification of incident</u>		
Unsafe Act	Unsafe condition	
<u>Cause of Incident or Condition</u>		
Lack of Attention	Poor Documentation	
Failure to follow proper Procedure	Improperly Prepared	
Procedure Lack of Communication	Congested Area	
Unfamiliar with the equipment	Poor Design	
Unfamiliar with operating Procedure	Improper	
equipment Carelessness	Improper	
Installation		
Any other.		

Description of Incident



Initial Response & Reporting

Name		Statement
<u>Sequence of Incident</u>		
Observation/Findings at Site & Records:		
<ul style="list-style-type: none"> A. <u>Technical observation</u> B. <u>System Lapses</u> C. <u>SOPs & SMPs</u> D. <u>General Safety at Work Place</u> E. <u>Communication</u> F. <u>Purchasing & Material Specification</u> 		
Root causes in Brief (Attach sheet in details)		
Contributing Causes		
Physical Causes: People Causes: System Causes:		
Corrective & Preventive Action Taken		
Elimination: Containment: Administrative Controls:		

Recommendations				
Recommendations	Responsibility	Target date	Status	Review

Date: _____

Medical Checkup Record for Staff/Visitors for work at height

Name: _____

Sex: _____

Age: _____

Company: _____

Gate pass no. _____

Employee Code: _____

Medical check:

1) Physical fitness(General observations)

OK/Not Ok

2) B.P.

3) P.R

4) Past history of Vertigo and Epilepsy, Heart Disease

Yes/No

Signature of Visitor/Worker/Staff

Certified by C.M.O.

Housekeeping checklist - TSPL

Area :

Date :

Parameter s		STATU S		Remark s
		ok	NoT ok	
1.5 S methodology awarness among the Employees				10
a	awarness of 5 S among the employees in the area			
b	list of equipment in the area is available			
c	cleaning schedule is available of the area			
d	Is there any deposition of dust or other contamination on them?			
2. Drinking water and washrooms				10
a	Drinking water point condition / draining point available			
b	washroom condition and cleaning Schedule available			
3.Floor -				10
a	Are floors dirty and slippery?			
b	Are floors uneven and dirty?			
d	Are proper receptacles provided for the waste?			
e	Is cotton waste or oily material thrown on the way?			
f	Are aisles are free from obstructions?			
4 Red tag Area				10
a	Designated Red tag area available in location			
b	Are cabinets, racks so arranged as to facilitate good housekeeping?			
c	Are all doors and door frames in good condition			
d	Is colour washing or white washing in aesthetic and appealing condition?			
5.Structures -				5
a	Are items over hanging or protruding so as to cause personnel			
b	Are cobwebs fully removed?			
6.Daily cleaning Schedule available in Area / specific Zone and time				10
a	Area around Equipment cleaning schedule			
b	waste lifting plan in area			
c	Pesticides control and Room freshner available in the area			
7.Fire & Safety Equipment -				15
a	Is detection system , Manual Fire alarm, Detector, working properly			
b	Are all extinguishers in their proper place, and readily accessible?			
c	Exit and Entry properly marked in the area			
e	Are safety, hazards posters and charts properly displayed?			
8.Illumination -				10
a	Are all areas sufficiently lighted to reveal obstructions and hazardous conditions?			
b	Are all electrical and instrumentation properly dressed and free from dust?			
9.Dustbins/Garbage Drums				10
a	Are all dustbins/ waste collection drums not full			
10.Electrical Installation				10
a	Is Electrical sub station / panel room from coal and other dust			
b	Is warning / Signage and marking available and cleaned			
c	Is panel locked and access control is being followed			
Audit Team				100



SAFE WORK PROCEDURE

(Performance Criteria - Perfection in job with no injury to persons or damage to property)

DEPARTMENT/ Project Site		DOC. NO. :
SECTION/LOCATION		NAME OF WORKING AGENCY :
JOB TITLE		Work order / requisition No. :
JOB DURATION	Start Date	End Date

Sl. No	Activities (Sequence of Work)	Hazard	Safety Precautions	Persons Responsible : Name & P.No.	Reference to document / criteria and remarks	Condition of Tools/tackles required OK/Not OK

Any specific hazard from six directions- North, South, East, West, Above & Below and their management :

Departmental Representative

Representative from Safety

Working Agency/Contractor's Representative.

Note:

- This Safe Work Procedure shall be prepared by owner department countersigned by working agency / contractor's representative and safety department.
- Sequence of work shall involve step-by-step jobs.
- All possible hazard including proximity hazard shall be identified.
- With the change of working conditions, the procedure shall be amended and persons shall be trained accordingly.
- Review on status of implementation shall be done through task observation(Ref.Form# EHSMSM/WORKS/446/4008) and /or site severity audit

6. Before start of the job, induction shall be given to persons engaged at site by departmental representative and subsequent daily induction shall be given by Working agency / Contractor's Representative.

MEDICAL EMERGENCY (Please Contact following no)	FIRE EMERGENCY (Please Contact following no)
1. TSPL Control Room- 01659248204(IP No: 8204)	1. TSPL Control Room- 01659248204(IP No: 8204)
2. TSPL First Aid Center- 01659248600(IP No: 8600)	2. TSPL Fire Control Room- 01659248700(IP No: 8700)
3. CHP Control Room- 01659248222(IP No: 8222)	3. TSPL Security- 01659248080(IP No: 8080)
4. ESP Control Room- 01659248223(IP No: 8223)	4. CHP Control Room- 01659248222(IP No: 8222)
5. DM Plant Control Room-01659248211(IP No: 8211)	5. ESP Control Room- 01659248223(IP No: 8223)

TOOLBOX TALK

Contractor/Dept. Name: _____/_____ Date & Time :- _____/_____	
Toolbox Topic: _____	
PTW No: _____	Talk Location: _____
HIRADeC No. _____	SWP/SMP/WI No. _____
Discussion Points:	

Hazards identified Please fill the Hazards according to the

categories. **System-Based Hazards** (Hazards which are already defined) (Please Tick (√) as applicable)

Work At Height Activities

Isolations

Vehicles

Activities

Electrical Activities

Confined Space

Activities **Machine**

Guarding

Lifting & Rigging Activities

Chemical

Handling **Hot**

Work

Others (please mention)

Task-Based Hazards (Hazards other than defined)

Control measures taken

Persons Attended: (Every Details Should be filled properly)

NO.	NAME	DESIGNATION	WAH/CSE no. if applicable	SIGNATURE	REMARK
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Full Name and Signature of Site Engineer / Supervisor

Annexure 2 – CODE OF CONDUCT

This code of conduct is applicable to all suppliers "(suppliers' herein refers to suppliers/Contractors/ vendors/ gents/ consultants/ contractors/joint venture partners/third parties) who have business relationship with Vedanta" (Vedanta herein refers to the company and any its subsidiaries).

- ☒ Compliance with Laws: The suppliers shall ensure compliance to all governmental norms - local & international such as Environment Protection, Minimum wages, Child Labour, US Foreign Corrupt Practices Act, UK Bribery Act, Anti Bribery, Corruption, Health & Safety etc.
- ☒ Compliance with company policies: Shall follow all Environment, Health & Safety and other operational policies of the company while executing the work under this Agreement/contract at company site.
- ☒ Conduct with company employees: forbid using inappropriate language in the workplace, including profanity, swearing, vulgarity or verbal abuse.
- ☒ Child Labour: oppose and do not permit the use of, forced or child labour.
- ☒ Unethical Behavior: Shall not take any recourse to any unethical behavior (implicit or explicit) with any employee of Vedanta for the purpose of obtaining an order or any information that may result in a favourable financial impact more specifically.
- ☒ Bribery & Corruption: Shall not offer or accept bribe or use other means of obtaining undue or improper advantage. No supplier or its representatives or employee, shall offer to any employee of Vedanta a kickback, favour, gratuity, or anything of value to obtain favourable treatment or for the advancement of business. Shall not take any advantage of any family/social/political connection in obtaining favour with regard to any order merit shall be the sole attribute for association with Vedanta.
- ☒ Undue Favour: Shall not offer any gift or entertainment for the purpose of obtaining an order or any undue favour (also refer the Gift policy of Vedanta which is uploaded on company website).
- ☒ Reporting violations of code: Shall forthwith report any unethical activity or discrimination if practiced by any Vedanta employee/other suppliers as per Vedanta whistle blower policy (uploaded on the company website).
- ☒ Competition and fair dealing: Shall desist from unfair trade practices with your competitors who are also associated with Vedanta.
- ☒ Confidential Information: Shall protect and not in-fringe with any Vedanta intellectual Property /information /technology which comes to your knowledge during the course of your business relationship
- ☒ /dealings with Vedanta.
- ☒ The financial and sales results of the Company, or any member of the Company, before they are in the public domain.
- ☒ Trade secrets, including any business or technical information, such as formulae, recipes, process, research programs or information that is valuable because it is not generally known.
- ☒ Any invention or process developed by an employee using the Company's facilities or trade secret information resulting from any work for the Company, or relating to the Company's business.
- ☒ Proprietary information such as customer sales lists and customer's confidential information
- ☒ Any transaction that the Company or any member of the Company is or may be considering which has not been publicly disclosed Vedanta expects its suppliers to comply with the conditions of the supplier code in letter and spirit. It is the supplier's responsibility to read and understand the contents of Vedanta's supplier code and code of conduct & business Ethics policy and agree to uphold its values during your business association with Vedanta. Please contact the concerned Head Commercial/Company Secretary if you any questions about the supplier code.

ANNEXURE 3 – HSE

1. Introduction

In TSPL we are committed to the protection of Health and Safety of our employee, contractors and stake holders as well as the protecting of our assets and environment. Zero harm and Zero waste needs active involvement of contractors and their employee who carry out a large percentage of work and are exposed to the associated to HSE Risk.

To inculcate safe practices, TSPL follows Vedanta Sustainability frame work and ensure its 100% compliance. Entire framework of Vedanta Sustainability Framework has been captured into 9 Policies, 18 Nos Technical standards, 14 Management standards and various guidelines notes. To ensure Zero Harm Various Safety and Environment Performance standard are in place. List embedded in the document.

The works should be undertaken in accordance with the applicable international guidelines, standards and specifications on HSE (ICMM / IFC/ OCED etc.)

Bidders shall be evaluated for their HSE performance as per Annexure 2 Business partner safety evaluation.

2. Contractor HSE Obligations

2.1 Compliance of Acts/Rules/Gazette notifications/office memorandums/Supreme court guidelines/orders. Few important Acts and / Rules are as under:

Compliance to all statutory requirements but not limiting to Factories Act, 1948, Punjab factory rules 1952, Punjab Major Accident Hazard control Rule, Punjab Fire prevention Act, Motor Vehicles Act as amended in 1994, The Central Motor Vehicles Rules, 1989, Indian Road Congress Code IRC: SP: 55-2001_Guidelines on Safety In Road Construction Zones, The Petroleum Act, 1934 and Rules 1976, PESO Requirements, Gas Cylinder Rules, 2003, The (Indian) Boilers Act, 1923, Indian Electricity Act 2003 and Rules 1956, National Building Code, 2005, Indian Explosives Act, 1884 along with the Explosives substance Act, 1908 and the Explosives Rules, 1983, Environmental (Protection) Act, 1986, Environmental (Protection) Rules, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, E-Waste (Management) Rules, 2016, Air (Prevention and Control of Pollution) Act, 1981 & Air (Prevention and Control of Pollution) Rules 1982, The Environment Impact Assessment Notification, 2006, The Noise Pollution (Regulation and Control) Rules, 2000, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Water (Prevention And Control Of Pollution) Cess Act, 1977 and Water (Prevention And Control Of Pollution) Cess Rules, 1978, The Water (Prevention and Control of Pollution) Act, 1974& The Water (Prevention and Control of Pollution) Rules, 1975, Guidelines for Abstraction of Ground Water for Industrial/Infrastructure project proposals in Non-Notified Areas , The Batteries (Management and Handling) Rules, 2001 & Amendment Rules, 2010, Bio Medical Waste (Management and Handling) Rules, 2016, Forest conservation act, 1980, The Plastic Waste Management Rules, 2016, The Solid Waste Management Rules, 2016, The Construction and Demolition Waste Management Rules, 2016, The Ozone Depleting Substances (regulation and Control) Rules, 2000, The Public Liability

Insurance Act, 1991 & amended there on and other acts / rules / notifications / memorandum / guidelines issued by Central/State Govt. from time to time.

- 2.2 Contractor has to ensure proper housekeeping by periodic housekeeping, disposing in designated area the scraps/ wastes generated during construction/ project jobs and from package materials; Contractor has to ensure periodic segregation of all scraps like wooden, MS heavy, MS light, GI, Aluminium, SS, plastic & etc., weighing at TSPL inside Weigh bridge & disposing at TSPL scrap yard as per TSPL scrap policy.
- 2.3 Contractor has to ensure to meet all construction site- fugitive emission control norms, noise and other standards stipulated by statutory bodies
- 2.4 Contractor has to coordinate in obtaining of all statutory compliances & clearances such as CTE from PPCB, Usage & storage of Explosives from CCOE, Plot plan & Pre & Post stability certificate from Factory Directorate, Electrical Inspectorate approvals as per Indian Electricity Rules, Approvals from Indian Boiler Regulations, BOCW & CESS compliances, fire clearances renewals/ building drawing approvals, Workman compensation Insurance policy & Complying other all applicable Acts & safety norms from Central/State Govt.
- 2.5 Contractor has to submit monthly/quarterly/half yearly/annual reports to statutory bodies under various Acts/rules/notification/clearances/authorizations. Submission of reply/clarifications to letters from statutory bodies.
- 2.6 Contractor has to conduct Risk Assessment/JSA for all works to decide on priorities and to set control measures for eliminating hazards and risks identified.
- 2.7 Contractor has to strictly follow Vedanta Sustainability Safety and Environmental Standards apart from General National and International best Safety practices viz.
 - (a) Working at height
 - (b) Confined space entry
 - (c) Electrical Safety
 - (d) Isolation & LOTO includes Personal LOTO
 - (e) Vehicle & Driving
 - (f) Ground control
 - (g) Crane and Lifting
 - (h) Waste management

- (i) Water management
- (j) ESIA (Environmental and Social Impact Assessment)

- 2.8 Contractor shall facilitate smooth functioning of Occupational Health Centre (OHC) along with adequate equipment (including ambulance) and dedicated & qualified staff and qualified Occupational Health doctor round the clock by providing in compliance with statutory authority. Tie-up with reputed hospitals for PME of employees or for further better treatment. First Aid Centre & Ambulance to be provided by Contractor.
- 2.9 Contractor shall conduct Industrial Hygiene Audit at periodic intervals at workplace and labour colonies and will have to ensure workplace monitoring such as Noise, illumination, Heat Stress, Vibration & Ergonomics.
- 2.10 Contractor shall facilitate First aid boxes at all required locations and maintain at regular intervals.
- 2.11 Contractor has to ensure provision of canteen, Rest sheds, cool drinking water facilities & toilets for their workmen and ensure regular maintenance of these facilities at different locations.
- 2.12 Contractor shall ensure 100% firefighting & fire extinguishers system for all hot works & applicable areas and periodic checklist based inspection of fire extinguishers.
- 2.13 Contractor to ensure 100 % compliance to work permit system as per Safety manual.
- 2.14 Contractor has to conduct HSE induction training and other job specific trainings by arranging their expert HSE team & external trainers, awareness and celebration of National Safety week, Fire safety, World Environment Day etc.
- 2.15 Contractor shall appoint the required HSE personnel based upon the statutory requirement and establish the HSE organization.
- 2.16 Contractor has to implement HSE score card system and conduct meeting & reviews as per the statutory requirements.

- 2.17 Contractor has to conduct safety inspections, safety investigations etc., issue of required PPE's and maintain of stock of the same.
- 2.18 Contractor has to implement all safety standards & to conduct regular internal audits, trainings, coordinating with external auditor, preparation of CAPA and closure of observations.
- 2.19 Contractor has to ensure awareness / training related HSE and safe construction practices.
- 2.20 Contractor has to follow the latest amendments in statutory Act / Rule / Notifications / Guidelines.
- 2.21 Maintenance of all HSE Records & Reporting: The Contractor should maintain applicable legal registers. Apart from the same, they should maintain register of PPEs Issue, Reported unsafe conditions & acts, near miss reports and their compliances to mitigate, Training of employees, Accident/Injury register, & Health checkup details etc. Following information to be submitted at the end of the every month (before 3rd of next month) to TSPL Safety HOD & Project Manager directly with copy to site in charge.
- a. Record of Nos. of employees :
- Working hrs / days
 - Duration of working (in days/ hours)
- b. STATUS OF SAFETY - GADGETS
- Nos. of helmets
 - Nos. of safety belt
 - Nos. of goggles
 - Welding Goggles
 - Grinding Goggles
 - General Goggles
 - No. of hand gloves
 - No. of safety shoe / gum boot
 - Length of barricading tapes
 - Status of warning tags (like =radiography, road blocking, no entry etc. use)

c. INCIDENT STATUS

- No. of Fire incidents
- No. of Environmental incidents
- Nos of first Aid injuries
- Nos. of minor injuries
- Nos. of three days injuries
- Nos. of major injuries
- Nos. of fatalities (if any)

Any accident, injury, near misses, fire , explosion, spill of chemicals, environment degradation etc. involving Owner or Contractor's personnel, property or any third party property shall be reported immediately to Owner, irrespective of whether injury to a person or damage to property or equipment resulted.

d. INSPECTION & OTHER SAFETY RECORDS TO BE ENSURED BY CONTRACTOR

- i. Gas cutting set & welding machine inspected on & by
- ii. List of hand tools updated on
- iii. Hand tools inspected on & by
- iv. Lifting tools & Tackles register (Cranes , Hydra, hoisting blocks/tackle, slings, chains, wire ropes, shackles, pad-eyes, containers, tuggers, winches, man- riding winches, jacks, work-belts, harnesses and transfer baskets for equipment and personnel.)
- v. Lifting tools- Load test & TPI record & inspected on & by, Due date
- vi. Cranes, Hydra & lifting equipment record & inspected on & by
- vii. Vehicle inspection record- Hydra, JCB, Hywa, trailer, office vehicles etc.
- viii. List of first aiders - Contract Partners (Notice boards / Enrolments in Shifts)
- ix. PTW record
- x. Store audit record (Scrap of all waste materials, Lanyards, Full body harness & PPEs) - All records of discarded items kept ready
- xi. List of Workforce certified for Work at Height & Confined Space works.
- xii. Records of PME / Six monthly examination
- xiii. Inspection records of Electrical panels / Ground continuity & Electrical safety devices
- xiv. PPE Distribution and records to workers

- xv. Scaffold register with compliances record
- xvi. Leadership Visibility round, Audits and compliances

e. TRAINING & AWARENESS PROGRAM RECORD:

- i. No of Training Conducted & Topics Covered
- ii. No of People Trained with Details of Trainer
- iii. Record of Tool box talks in prescribed format
- iv. Record of safety Induction
- v. Incident communication (Fatal at group level / FAC at TSPL Site / Contractor & their group level incidents)
- vi. Communication of HIRA / JSA, Job methodology availability in tool box talk - Understood by Worker at Ground level (Random Inspection)
- vii. Job specific Training Records and compliance –Work At Height/ Electrical safety/ Excavation/ Confined Space works/ Heavy lifting etc.

Any additional reports to be submitted will be decided by TSPL safety Head & Project Manager at the site.

3. Violation & Penalties:

In case of any violation of Health, safety & environmental measures and/or poor safety performance and/or HSE incidents by the contractor or his employees, the same will be taken seriously and in such situation, Owner reserves it's right to suspend or terminate the concerned/ responsible contractor employee(s) / supervisor(s)/ workmen and /or suitably penalize the contractor as under:

- a. Violation of life saving rules shall be taken seriously and in case of violation of any rules, warning shall be issued for first time violation; Suspension shall be done on second time violation; Termination from entering TSPL site shall be issued in case of any severe violation or third time violation by any of Contractor/ Sub-Contractor's employee or supervisor or workman or workmen gang. And suitable penalty action shall be taken against the contractor as per management decision.
- b. For any accident due to the negligence of the contractor/ contractor's deployed agencies/ workers or sub-contractors following penalties shall be levied.
 - i. For Fatal Accidents- Rs 10Lac/-
 - ii. For Major/reportable accident (Permanent Disability) - Rs 5.Lacs

- iii. For reportable LTI accident (Non-Permanent Disability) - Rs 1,50,000/-
- iv. Damages: Charges towards any damage of equipment/material at our site caused due to miss handling by contractor's workers/vehicle shall be deducted from contractor's bill after assessment by Owner's Engineer in charge .The assessment of Owner's Engineer In charge shall be final and binding on the contractor. All of the contractor's vehicle entering into factory premises must be comprehensively insured.
- v. No worker/ employee of contractor/sub-contractors himself shall be allowed to consume alcoholic drinks or any narcotics within the plant premises. If found under the influence of the above, the contractor /contracting firm shall have to change /replace him, failing which we may terminate the contract.
- vi. Contractor's Personnel shall not smoke at the work site except within designated smoking areas. Smoking within the battery area, tank farm, flammable material storage area & other such high-risk areas is strictly prohibited. Violators of the no smoking rules shall be suspended or terminated from entering TSPL on immediate basis.
- vii. Reporting of Accidents & Dangerous Occurrences: The contractor shall immediately upon knowing of any accident, damage or losses in which he is involved on the site should inform the Owner.
- viii. Monthly safety score of Contractor , as per Schedule-II shall be above 80% at all times; In case of observing score less than 65% in any of month, then Owner shall issue the letter to Contractor site & HO officials to take necessary steps to improve the conditions. In case of failure of Contractor to achieve safety scorecard above minimum limit of 65% on 3 consecutive months, then Owner may terminate this Contract by giving notice in writing to the Contractor. Monthly safety score of all Sub-Contractors shall be monitored and reported by Contractor to Owner, along with all corrective actions, penal actions taken to improve safety score on monthly basis.

4. Contractor HSE Scorecard

Contractor HSE Scorecard			
S.No	Parameter	Score	Criteria
1	No Positive marks for lagging indicators (Only Negative marking in case of First Aid, MTI, LTI, Fatal, HIPO & Fire) - weightage has been give 5 % and scoring criteria is (if LTI+MTI+FAI = 0, then 5, else if <3, 3, else 1, else if LTI >1, then HSE score = 0)		In case of Safety or Fire Incident, marks deduction criteria shall be as under: (a) Fatal - 100% (b) LTI - 10 Marks (c) MTC - 8 marks (d)First Aid Injury - 5 Marks (e) HIPO Incident - 10 Marks (f) Fire Incident - 5 marks. (This is part of score card)
2	PME Compliance	5	More than 90% Compliance
3	Training & Tool Box Talk	5	8% coverage of Contractor Employees per month - Full Marks and less than 8% - Marks as per pro-rata Basis. Daily Tool Box talk record
4	PPE Compliance	8	Number of Non Compliances as per PPE Matrix. For each non-compliance 0.5 mark shall be deducted. Audit shall be carried out by HSE or Cross Functional team.
5	House Keeping & Waste Management including storage and Handling of dangerous goods	10	Compliance of Vedanta Sustainability Waste management Performance standards and House-keeping at workplace in Plant and Contractor facilities. Score shall be awarded by Cross Functional Audit
6	Scaffolding / Ladder	5	In Case of non-standard and untagged scaffolding or Ladder at Work place 50% marks shall be deducted.
7	Machine up keepment (welding / Gas Cutting / Grinding & other Hand Tools)	5	Each non-compliance shall carry One mark deduction.
8	Compliances to Permit to Work	10	Non-compliance and Non adherence of permit shall attract 1 marks deduction per incident.
9	Statutory compliance such as Gas Cylinder storage facilities, Non availability of License and certificates eg. Vehicles, Lifting Tools and tackles, Pressure vessel.	8	Each non-compliance will carry one marks deduction.

	Emergency planning and preparedness		
10	Unsafe act/ condition, Near Miss and environment incident reporting	8	Target 5 per each 100 manpower Nos. Unsafe Act & Unsafe conditions and Reporting of Near miss incidents. Reporting and its closure shall carry 50% weightage each.
11	Fire Protection and readiness (based on applicability)	8	<ol style="list-style-type: none"> 1. (%) availability of Fire extinguisher 2. (%) availability of trained fire fighter
12	Road Safety Compliance	8	Vehicle safety compliance as per VSAP guidelines. Each violation shall carry One mark deduction
13	<p>Safety compliances as per VSAP standards:</p> <ol style="list-style-type: none"> a. Excavation safety b. Lifting & Tools & tackles c. Confined space compliance d. Electrical safety in construction supply & project jobs 	20	-
		100	

ANNEXURE 4 – Vedanta Sustainability Clauses

1. Health, Safety and Environment (HSE) Systems Designation of Supervisor: The Contractor shall specify one of its employee as the Site HSE Supervisor who shall be responsible for attending HSE matters at all levels at the site of work, including emergency response.

Attendance of contractor: The contractor shall ensure that its site HSE supervisor is present at the place of work and performs supervisory functions at all times whenever four or more workers of the contractor or its sub-contractors are present at the place of work. Statutory Compliance: Contractor shall identify, document and comply with all pertinent Health, Safety and Environment (HSE) laws and regulations, approvals, licenses and permits which are applicable to the services and conduct of activities.

Contractor shall conduct internal inspections and record to ensure full implementation of requirements and compliance with the system at the site. Contractor shall provide documentary evidence that it has complied with the system, on Owner's demand.

Contractor Site management plan: The contractor should comply to his submitted plan in his bid document on how to manage and improve the work site.

2. Hazard and Risk Assessment

Pre and post Job Safety assessments: Contractor is responsible and accountable for ensuring effective procedures and assessment systems are in place to meet all HSE conditions.

Prior to the commencement of any operation/activity, Contractor must undertake a hazard and risk assessment, such as a job safety analysis or job risk analysis including control and mitigation process. The risk assessment should cover the following aspects of workplace

1. General Safety and Environmental Management Procedures
2. Waste Disposal
3. Equipment Decommissioning
4. Water Discharges
5. Material Storage/Spills
6. Storm Water Management
7. Use of Asbestos, Lead, CFCs and other objectionable chemicals.
8. Hot working, gas welding, etc.
9. All electrical works
10. Work at heights including scaffolding
11. Demolition
12. Construction work of any kind

13. Transport management
14. Tank cleaning or testing
15. Confined space, etc.

3. Awareness, Competency and Behaviour

Awareness: Before commencement of any Services, Contractor shall at its own expense ensure that Contractor's Personnel have been given the necessary HSE training including training in hazard identification, risk analysis, safe working behaviour etc. The HSE training shall include a briefing explaining the nature of the part of the Services they will be performing, a job safety analysis and description of the hazards, which may be encountered during the performance of the particular tasks, which they are required to perform. During such training, Contractor shall emphasize the fact that each person has an obligation to stop an act or task if it is unsafe. Contractor shall ensure that Contractor's Personnel attend refresher courses to maintain familiarity with current procedures. Contractor shall provide evidence of completion of all training and competency assessments upon request by Owner.

All Contractors' Personnel arriving on the site shall attend the Contractor's or Owner's HSE inductions including a review of the site's safety procedures including Permit to Work and evacuation.

Contractor shall ensure safety meeting schedule, including but not limited to pre shift safety meetings, safety toolbox meeting, safety committee meetings and management review meetings.

Competency: The contractor shall ensure that all of its supervisory personnel performing work possess any specific competencies or qualifications, experience, responsibility and authorities required by applicable occupational health and safety laws, and shall provide proof of same satisfactory to Owner upon request.

Behaviour: The contractor should provide adequate guidance so that contractor's personnel works to reduce workplace incidents and improve safe performance at all times. The contractor shall ensure that his staff conducts in a fit and proper manner whilst on site. Failure to do this may result in the removal or exclusion of such persons from the site.

4. Change Management: If there is a change in site supervisor and contractor management personnel, it shall be notified to designated contractor manager as a part of Management of Change (MOC) process. This also includes reassess hazards and risk where the changes occur to the work scope, plant and equipment and the working environments.

5. Incident Reporting

Reporting: Any accident, injury, near misses, fire, explosion, spill of chemicals, environment degradation etc. involving Owner or Contractor's personnel, property or any third party property shall be reported immediately to Owner, irrespective of whether injury to a person or damage to property or equipment resulted.

Access to site: If Owner exercises its right to conduct its own investigation; Contractor shall provide Owner with all reasonable assistance to allow & to complete its investigation.

Learnings: Contractor shall implement the learnings from incident to prevent a recurrence. Contractor must share lessons learned with Contractor's Personnel.

6. Safety Interaction

The contractor must conduct regular safety interactions of its Personnel in accordance with the Owner's safety interaction process. The number and frequency of safety interactions to be performed will be at the discretion of the Owner's Representative. Quality assessments of the safety interactions will be undertaken by the Owner's HSE Personnel.

The Contractor must conduct investigations into incidents, accidents and injuries by its Personnel or involving its equipment and property in accordance with the Owner's incident investigation process. Action items must be created to prevent recurrence and be closed out before due dates.

7. Emergency Drills

Contractor shall participate in emergency response drills to test the effectiveness of its emergency procedures and equipments and the knowledge and proficiency of Contractor's Personnel. Contractor will provide with their emergency response plan (ERP) which must be adoptable to suit the site.

8. Cardinal Rule*

Contractor shall ensure that all Contractors' Personnel follow the five safety cardinal rules. The rules are:

" Do not override or interfere with any Safety Provision nor let anyone else override or interfere regardless of seniority.

" Personal Protective Equipments (PPEs) applicable to the given task must be adhered to. " Always follow isolation and lock out procedure

" No person will be allowed to work if under the influence of alcohol or drugs

" Report all injuries and illness On violation of cardinal rules, yellow card will be issued to the concerned personnel and disciplinary action will be taken which may result in suspension of personnel also.

9. Personal Protective Equipment Contractor shall, at its own expense, supply Contractor's Personnel, where required, in connection with the safe performance of the Services, with adequate protective clothing and other protective equipment including first aid which shall be maintained in good condition or replaced, and shall be worn at all times where required to manage potential injury hazards associated with a work activity under this Contract. Contractor shall ensure that his personnel have been trained in the correct use and application of PPE. All such training shall be documented and available to Owner on request.

10. Equipment, Tools, Tackles and Resources

Contractor shall ensure that all plant, tools and equipment used by Contractor's Personnel in the performance of the Services are suitable for use for the particular task or tasks for which they are to be used, are maintained in safe and operable condition and that users of the plant, tools and equipment are trained, experienced and where necessary, licensed and certified to operate them.

Contractor shall maintain a register of all lifting equipment and tackle. Contractor shall, upon request, provide certification of inspection within the previous twelve months for all cranes and lifting slings and tackle before the equipment is used for the Work, and/or shall carry out such tests and inspections as are requested by applicable regulatory authorities. Safe Working Load (SWL) and radius charts shall be available for all lifting equipment and shall be marked on the equipment. Contractor shall ensure pre-inspection of lifting tools tackles including wire rope slings, clamps, shackles, hooks etc. before taking up the job. Owner reserves the right to require, Contractor to inspect any lifting gear that does not meet the requirements stated above. All equipment shall be stored and operated in accordance with the manufacturer's specification and guidelines.

Contractor shall maintain up to date copies of all tests and maintenance certificates relating to cranes, lifting beams pulley blocks and lifting gear, and shall make them available to the Owner upon demand.

All tools & tackles required for the execution of the job shall be arranged by contractor. Also a periodic audit would be undertaken to assess the condition of such tools and tackles.

While using their equipment and carrying out any job, if any equipment / installation belonging to Owner or any other agency at site is damaged by contractor, it will be made good at the risk and cost of contractor.

Detailed risk assessments shall be conducted for all equipment to identify all foreseeable hazards and determine the most appropriate controls to mitigate the risks associated in using in accordance with HSE laws and regulation.

Vehicles operating in Owner's premises shall observe all parking and speed restrictions, road signs and traffic rules as per Owner's policy.

11. Material Safety Data Sheets

The contractor shall maintain, at the job site, Material Safety Data Sheets for all hazardous materials and products taken onto the job site.

Products are stored in appropriate containers clearly labelled prior to sending to site, all hazard substances are risk assessed to determine their safety requirements and suitability for use.

12. Work Permits

Contractor shall follow the site Permit to Work (PTW) system for carrying out hazardous activities that includes following (but not limited to) activities. The contractor shall not perform any of such activities without first obtaining and displaying the applicable work permit at the project site.

- a. Hot work
- b. Confined space entry
- c. Working at height
- d. Breaking into piping
- e. Lockout / Tagout / isolation etc.

- f. excavation or drilling into the ground or a concrete building slab using powered equipment
- g. Hazardous substance handling, etc.
- h. Excavation / trenching
- i. Chemical management MSDS's
- j. Any government related permit

13. Health and Fitness

Each contract employee shall undergo a pre-employment medical check and periodical medical examination (PME) as per the Owner's guidelines by a Owner approved doctor/ medical personnel and cleared for the type of work he/ she will undertake, prior to the commencement of work. Contractor shall ensure that all Contractors' Personnel are able to perform the essential functions of their respective assignments and shall certify the same to Owner if so requested by Owner or if required by law. Contractor's medical assessment process shall equal or exceed the requirements of Owner's medical assessment procedure.

Contractor shall ensure health assessment, monitoring and management of contract personnel exposure to noise, dust and other physical hazards that have the potential to be harmful to health.

14. Disease

Contractor shall ensure that any of Contractor's Personnel who exhibit any symptoms of any severe infectious disease that is communicable by air or surface contact immediately make appropriate arrangements to be medically assessed and removed from the Site until they have received medical clearance and can provide proof of such clearance.

15. Hygiene and Housekeeping

Contractor shall ensure that Contractor's Personnel maintain high standards of hygiene and housekeeping on the Site. Contractor shall conduct routine hygiene and housekeeping inspections on the site to ensure that standards are maintained.

Contractor shall collect and segregate scraps generated by their activities or services by creating separate bins and finally deposit or utilize as per the directions of Owner.

16. Environment Protection

Contractor shall ensure proper collection and storage of used oil and waste oil generated at site. The used oil and waste oil collected so shall be disposed-off in compliance to law. Any oil/grease soaked cotton waste would be collected from site of work and suitably disposed as per the guidelines.

Contractor shall use appropriate Personnel protective equipments and follow requisite procedure for handling, transportation and storage of Hazardous wastes inside the plant including disposal sites owned by Owner.

Contractor shall be solely responsible for damage caused to the surrounding/ environment during transit.

Contractor shall ensure optimum use of water, energy and other resources while providing services and also work for loss prevention in the form of leakages, spills, overflows, wastages etc.

Contractor shall be solely responsible for the legal actions that may be initiated consequent to environmental hazards as aforesaid. Contractor would ensure that spillages, leakages and overflows etc. are attended immediately on notice or on intimation.

17. Smoking

Contractor's Personnel shall not smoke at the work site except within designated smoking areas.

18. Contractor Accommodation

Where the Contractor's Personnel provides accommodation for contract workers, the accommodation shall be appropriate for its location and be clean, safe and, at a minimum, meet the basic needs of workers. In particular, the provision of accommodation shall meet national legislation and shall have the minimum following:

" Provision of sanitary, laundry and cooking facilities and potable water "

Safe location w.r.t health, hygiene and fire risks.

" Provision of first aid, medical facilities and proper ventilation.

" Building material shall be suitably inflammable, have smoke and fire alarms fitted and include other safety checks to prevent fire.

19. Clearance of Site

On a continuous basis consistent with Good Industry Practice during the progress of the Works the Contractor shall clear away and remove pursuant to the directions of the Owner from the Site all scrap, debris, other waste materials. The Contractor shall, leave on the Site for the Owner such temporary works as instructed by the Owner, free of charge. The Contractor shall at all times and particularly after completion of the Works, keep the Site and the Facility in a clean, safe and workman like condition and shall dispose of all rubbish (other than hazardous materials or other materials which may contaminate ground-water, for which other arrangements shall be made by the Contractor) in accordance with Good Industry Practice.

20. Removal of unsafe Workers

The contractor shall document any identified instances of noncompliance with safety requirements by its workers and subcontractors. Where any worker or subcontractor breaches safety requirements and thereby presents a threat of serious injury or death to any person, the contractor shall remove that worker or subcontractor from the project site for the duration of the project.

21. Subcontracting

The Contractor shall be able to demonstrate that he has applied selection procedures that ensure that his sub-contractors are demonstrably competent to perform the works safely. The Contractor shall provide to the Location Manager the names of sub-contractors he intends to appoint in advance of entering into a contract with any such sub-contractor. The requirements of this booklet, the contract

specification, the contract health and safety plan, the risk assessments and method statements shall be imposed upon sub-contractors by the Contractor.

22. Monitoring

Compliance check by contractor: The Contractor shall monitor his safety performance and that of his sub-contractors to ensure compliance with standards set in the contract. The frequency of monitoring will be dependent upon the risk profile and number of persons employed.

Root Cause of incidents: All accidents shall be investigated to establish the basic causes and to recommend appropriate improvements in control. Details of all accidents, together with the associated investigation and recommendations, shall be passed to the Owner as soon as deemed reasonable.

Audit by Owner: The Owner reserves the right to audit all aspects of the management of health and safety on site at any time. Deficiency identified during any inspection / audit shall be entered into an appropriate action register that summarize the deficiency, the required actions, the person to whom that action have been assigned and date by which the action shall be completed.

The contractor shall be responsible to ensure all actions are completed, verified and closed within stipulated timeframes.

Monitoring by Owner: The Owner reserves the right to allocate weight age and set safety KPIs in the contractor's scorecard. The scorecard performance shall be reviewed periodically.

23. Contractor Queries

The queries should be normally directed to Owner's designate as specified in contract. The site specific "contractor safety management manual" can also be referred for any clarifications when in doubt. The details on specific processes, plants and machineries and related hazards are detailed in this manual.

Annexure 5 Format of Performance Bank Guarantee -

Date :

Guarantee No. :

To

Talwandi Sabo Power

Limited Village Banwala,

Mansa-Talwandi Sabo

Road, Distt. Mansa, Punjab-

151302 India

Dear Sir,

WHEREAS, _____, a company incorporated under the laws of _____ and having its registered / principal office at _____ (hereinafter referred to as the "Party" which expressions shall include its successors and assigns) has in terms of LOI No/ Contract No. _____ dated _____ (hereinafter referred as the "Contract") entered between you and the said Party, contracted to supply the good or perform the works and services as stated in the Contract.

AND WHEREAS, as per provision of the said Contract, the Party is required to furnish to you a Bank Guarantee for _____ (Rupees _____ only) towards due and faithful performance of the Party's obligations under the Contract.

Now, we _____ (name of the bank, branch) at _____ (address) (which include our successors and assigns) hereby irrevocably and unconditionally agree and undertake as follows :

1. We hereby irrevocably and unconditionally guarantee to pay to you the sum in aggregate not exceeding _____ (Rupees _____ only), without demur, merely on the first written demand signed by your representative stating that the amount claimed is due by reasons of breach by the said Party of any of the terms or conditions contained in the said Contract or by reasons of the Party's failure in performance of the Contract and / or any other agreement, if any. Any such demand made on us shall be conclusive as regards the amount due and payable to you by us under this guarantee.

2. Notwithstanding anything to the contrary, your decision as to whether the Party has made any such default or defaults under the aforesaid Contract and / or any other agreement, if any and the amount or amounts to which you are entitled by reason thereof, will be binding on us and we shall not be entitled to ask you to establish your claim or claims under this guarantee and / or be concerned with any dispute, if any between you and the Party and / or refer to the Party and / or rely upon any communication of the Party, but will pay forthwith the sum demanded by you on first written demand without any protest or demur.

3. This guarantee shall come into force from the date of issue of this guarantee and shall remain in full force and effect up to and including___. Should it be necessary to extend the validity of this guarantee beyond the said date, we undertake to extend the period of the guarantee on your request till such time as may be mutually agreed between you and the Party.

4. We further agree that you shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract and all other written agreement, if any relating to the Contract and/or to extend the time for performance by the Party from time to time.

5. Notwithstanding anything contained hereinabove our liability under this guarantee is restricted to _____
_____(Rupees _____ only). Unless a claim in writing is lodged with us within a period of 6 (six) months from the date of expiry of the guarantee i.e. up to and including _____ or up to an extended date as per clause 3 hereinabove, unless otherwise extended, all your rights under this guarantee shall stand forfeited and we shall be released and discharged from all liabilities under this guarantee whether or not this document shall have been returned to us.

THIS GUARANTEE SHALL BE SUBJECT TO THE LAWS OF INDIA AND THE JURISDICTION OF THE COURTS IN MANSAL, PUNJAB, INDIA

SIGNED AND DELIVERED this _____ day of _____, 20__.

For and on behalf

of Bank :

(Authorized Signatory Of Bank)

Address :

SUPPLIERS DECLARATION FOR PREVENTION OF MODERN SLAVERY

By signing this document, you confirm that you fulfill the requirements as set out in this Supplier Declaration.

As a supplier to Vedanta Ltd,

- we will comply with all applicable laws and regulations;
- we shall not employ under age employee or contract workmen as defined under the applicable local laws;
- we will not engage or employ people against their own free will, nor will personnel be required to lodge 'deposits' or identity papers upon commencing employment;
- we will comply with local law regarding working hours and adequate compensation for overtime;
- we will ensure that minimum wages are paid to employees/ labourers in terms of the applicable local laws;
- we will treat our employees equally and fairly. We will not tolerate any form of harassment or discrimination;
- we will promote that potential business partners, agents, suppliers and intermediaries adopt the principles set forth in this Supplier Declaration;
- we will ensure that there are no instances of human trafficking, sexual exploitation, slavery and bonded / forced labour on our employees/ contract labour.

Declaration signed by

Supplier: Supplier name:

Designation:

Address:

Date & Time:

Signature:

Name of supplier						
Products manufactured						
Products supplied to Vedanta						
Total no. of employees						
Turnover (in crore)						
Do you have any specific certification (such as Social Audit 8000 certificate) for working/ socially acceptable practices at work place?	ISO 9001	OHSAS 18001	SA8000	Any other		

A	Management practice	Response	Comments
1	Do you have a designated personnel who is responsible for labour welfare and labour law compliances?	Yes/No	
2	Do you currently have a program to assure that human trafficking and slavery do not exist in your operations and supply chain?	Yes/No	
3	Do you have a system in place to ensure compliances with Vedanta Supplier's Code of Conduct requirements?	Yes/No	
4	Do you have written policies for your facility covering the following aspects:		
	Child labour	Yes/No/Partial	
	Forced labour	Yes/No/Partial	
	Sexual exploitation	Yes/No/Partial	
	Slavery and human trafficking	Yes/No/Partial	
5	Do you impart training on labour laws, child labour, forced labour, sexual exploitation, human trafficking and slavery to your workers including contract workers?	Yes/No/Partial	
6	Do you conduct a self-assessment / risk assessment to identify the overall risks of slavery and human trafficking in your supply chain?	Yes/No	
7	Does the employer restrict workers' freedom of movement or communication with others inside or outside the workplace?	Yes/No	
8	Do you conduct independent audits in relation to compliances under labour laws of your own facility?	Yes/No	
9	Do you conduct independent, unannounced audits of your suppliers?	Yes/No	
10	If non-compliances are detected at your end, do you have a program to rectify such violations?	Yes/No/Partial	
11	Do you currently work with a third party to identify the overall risks of slavery and human trafficking in your supply chain? This may include mapping your actual supply chain and looking into what countries you source from and what products or services you buy and the risks related with sourcing from those countries or sourcing a specific product.	Yes/No	
12	Do you have internal accountability standards and procedures in place to hold your employees and contractors accountable for non-compliance with your standards on slavery and human trafficking?	Yes/No/Partial	
13	Do you require your direct suppliers to certify that all materials incorporated into your final product were sourced, processed and manufactured in compliance with the human trafficking and slavery laws of the country or countries in which they operate?	Yes/No	
B	Forced Labour	Response	Comments
1	Do you ensure that all contracted/migrant/foreign workers are provided with understandable appointment/ employment letters?	Yes/No	
2	Whether the terms of the employment agreement provide for termination clause exercisable by the employee?	Yes/No	
3	Whether the workers are allowed to leave company premises at the end of their shifts?	Yes/No	
4	Does your recruitment agent/ contractor keep original documents of workers (like identity documents, passport etc. in their custody?). If yes, reasons for the same	Yes/No/Partial	

5	Does your recruitment agent/ contractor keep financial deposits or charge recruitment fee from workers? If yes, reasons for the same	Yes/No/Partial	
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6	Do you withhold any portion of the wages of the workers working at your or at client's premises?	Yes/No	
C	Child Labour	Response	Comments
1	Do you employ child labour in your premises or adolescent workers (less than 18 years)? If yes, rational for the same.	Yes/No	
2	Do you require all workers (including contract workers) to provide copies of birth certificates or other official forms of identification to verify their age before being hired?	Yes/No	
D	Sexual Exploitation	Response	Comments
1	Does the company have mechanisms/ practices/policies in place for recording, investigation, processing, and settling the grievances of employees in relation to sexual exploitation?	Yes/No	
E	Wages and working hours	Response	Comments
1	Are any workers working excessive overtime beyond legal limits?	Yes/No	
2	Whether the records are kept for all permanent/temporary/contract workers (payroll, timecards, social benefits records, employee contract)?	Yes/No	
3	Do the workers working over time get paid for the over time wages as per the applicable laws?	Yes/No	
4	Do you ensure that all workers including contracted workers are paid wages on time	Yes/No	
5	Whether the mandated social benefits provided to all workers including contract workers (as applicable as per local laws)?	Yes/No	
6	Do you keep records of wages paid to workers including contract workers?	Yes/No	
F	Suppliers	Response	Comments
1	Do you require your direct suppliers to self-certify that all materials incorporated into your final product were sourced, processed and manufactured in compliance with the human trafficking and slavery laws of the country or countries in which they operate	Yes/No/Partial	
2	Do you monitor the labour laws (including child labour, forced labour, sexual exploitation, human trafficking and slavery) standards of your suppliers and business partners through regular questionnaires and spot checks in the form of on-site visits/audits.	Yes/No/Partial	

What is Modern Slavery?



Domestic Servitude

Employees working in private homes are forced or coerced into serving and/or fraudulently convinced that they have no option to leave.



Sex Trafficking

Women, men or children that are forced into the commercial sex industry and held against their will by force, fraud or coercion.



Forced Labor

Human beings are forced to work under the threat of violence and for no pay. These slaves are treated as property and exploited to create a product for commercial sale.



Bonded Labor

Individuals that are compelled to work in order to repay a debt and unable to leave until the debt is repaid. It is the most common form of enslavement in the world.



Child Labor

Employment of children in an industry or business, especially when illegal or considered exploitative

Global slavery: An overview



Slavery in India: An overview

Global slavery index survey suggests that there are **more than 18 million people or 1.4 percent of the total population**, who are living in conditions of modern slavery in India. This puts India at rank no. 4 globally based on percentage and at no.1 based on absolute number of people.

1,311,051,000

POPULATION

India has highest number of people living in some form of modern slavery

- *The India*

India: Prominent child labour, unsafe working conditions found in Jharkhand's mica mines

Economic times, 07 May 2018

India: Report alleges widespread child labour in Karnataka iron ore & granite mines

is home to 40% of the world's estimated 45.8 million slaves,

18
ESTI
SLAVERY

Report: Dalit girls in modern slavery in India's textile industry

There are 270 million people in India living on less than USD\$ 1.90 per day

Major industries in India where Modern slavery exists Domestic work, Construction, Sex industries, Agriculture, Fishing, Manufacturing, Manual labour and Forced begging.

Source: Global Slavery Index



Section 2

What is Modern Slavery Act, 2015

Background

1

The Modern Slavery Act 2015 (MSA) is an act of the parliament of the United Kingdom. It is designed to tackle slavery and human trafficking in the UK and consolidates previous offences relating to trafficking and slavery



What it means

2

Modern slavery is a broad term used to encompass the offences of 'slavery, servitude, forced or compulsory labour and human trafficking (includes sexual exploitation, removal organs, securing services by force, threat and deception, securing services from children and vulnerable person)



Organizational responsibility

3

Section 54 of the MSA mandates that commercial organizations to disclose what activities they have undertaken to eliminate slavery and human trafficking from their supply chain and their own businesses



Slavery "Statement"

4

Affected businesses are required to produce a "Slavery and Human Trafficking Statement" every financial year that sets out the steps taken

