

ITP NO: 2635

FOR FIELD LOOP CHECKING AND 'SYSTEM ACCEPTANCE TEST' -  
CONTROL ROOM

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Coordination with field contractor for loop checking.	WC	S
2.	Availability of record as per loop checking sheet duly signed	WC	HP
3.	Availability of record as per loop checking sheet duly signed	WC	W
4.	Operation of sub systems and peripheral systems	WC	W
5.	'Back-up' system operations	WC	W
6.	Ensure feedback/commands from/to electrical system	WC	W
7.	System acceptance	WC	HP
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

FORMAT NO: I -01  
(Sheet 1 of 4)

CHECKLIST FOR MECHANICAL CLEARANCE - IMPULSE PIPING

Project : _____		Report No : _____			
Plant/Unit : _____		Date : _____			
Contractor : _____		Area : _____			
Instrument Tag No.: _____		Installation Standard No. : _____			
Line No (Isometric No.)	Rev.	GAD No.	Rev.	P&ID No.	Rev.
	Items to be checked			Accept Contractor	Remarks
1.	Installation checked as per Installation Standard				
2.	Installation checked as per P&ID				
3.	Installation completed for ( enclosed )				
	a. Joint Numbering (Shop & Field Welds)				
4.	Valves (Check Rating, Gaskets, Flow Direction, Sheet No., Tag No., Damage, etc.)		Nos.		
5.					

## GENERAL NOTE

*The enclosed ITPs are indicative and shall be followed for developing the job specific ITP's for the works to be performed by the contractor. The provisions indicated for stage wise inspection by EIL/Owner (For specific activities) are the minimum and the Engineer-In-Charge may decide to increase Hold Points/ Witness Points while approving the job specific ITP's. Activities for which ITP's are not provided in this specification contractor to develop and get the same approved by EIL/Owner before start of the work. In general role of EIL has been specified in the document. The role of owner to be specified during preparation of site specific ITPs*

*Contractor to submit job specific reporting formats with the aid of enclosed sample reporting formats and job procedures for the jobs for which ITP's are attached and submit to EIL/Owner for approval, before commencement of the activity. If the contractor has to deviate from the given ITP for a valid reason, he shall obtain prior written approval of EIL/Owner. Contractor to carry out 100% examination of all activities.*

## LEGEND

**HP** : **Hold Point;**

A point which requires witnessing/inspection/verification and acceptance by Owner/EIL before any further processing is permitted.

The Contractor shall not process the activity/item beyond a Hold Point without written approval by Owner/EIL except where prior written permission for further processing is available.

**W** : **Witness Point ;**

An activity which requires witnessing/inspection/verification by Owner/EIL when the activity is performed.

After proper notification has been provided (notification modalities and period shall be finalized before hand), the Contractor is not obliged to hold further processing if Owner/EIL is not available to witness the activity or does not provide comments before the date notified. In such cases, basis of acceptance shall be review of Contractor generated report/document as per relevant technical specification.

**Rw** : **Review of Contractor's documentation.**

**S** : **Surveillance** Inspection by Owner/ EIL.

Monitoring or making observations to verify whether or not material/items or services conform to specified requirements. Surveillance activities may include audit, inspections, witness of testing, Review of quality documentation & records, personnel qualifications, etc.

**WC** : **100% Supervision and Examination by Contractor.**

Responsibility for execution of the inspection/testing is with the Contractor; Owner/EIL only verifies examination or testing done by the Contractor at important stages



ITP NO. : 2701

LAND & TOPOGRAPHICAL SURVEY

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Boundary markings and submission of drgs./sketches	WC	S
2.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP
	b) Field calibration, if any	WC	W
3.	Block levels, contour plans, establishing permanent bench marks with ref. to Survey of India B.Ms. by check levels and submission of relevant drgs. & records	WC	S
4.	Protection of control points, permanent bench marks and regular rechecking	WC	S
5.	Submission of Master plan showing monuments, structures exposed rocks, weirs, water works, ponds, underground services if crossing that area, etc.	WC	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>		
	Review Test and Inspection Documents	WC	Rw



IITP NO. : 2702

SOIL INVESTIGATION

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Positioning of test location	WC	S
2.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP
	b) Field calibration, if any	WC	W
3.	Boring & sampling	WC	S
4.	In-situ testing (SPT, CPT, Plate load test, Soil Resistivity, Block vibration test, etc.)	WC	S
5.	Lab testing (as applicable)	WC	W/ Rw
6.	Monitoring of water level	WC	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>		
	Review Test and Inspection Documents	WC	Rw

ITP NO. : 2703

SITE GRADING

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Clearing and stripping of soil including disposal of unsuitable material	WC	S	-
2.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	HP
	b) Field calibration, if any	WC	S	-
3.	Taking and plotting of initial levels at specified intervals for cutting as well as filling areas	WC	S*	S*
4.	Classification (Levels of strata) and testing of filling soil for suitability including preparation of Lead Charts to filling/disposal areas.	WC	S	-
5.	Proper warning of explosions, misfires and storage of explosive materials (As applicable).	WC	-	S
6.	Breaking up of clods, lumps, etc. at the time of filling and compaction.	WC	S	-
7.	Identification and suitability of borrow areas for filling soil/murram including verification of payments for royalty, etc.	WC	Rw	-
8.	Compaction test for earth filling in specified layers including finished areas.	WC	Rw	-
9.	Verification of final finished grade levels.	WC	S*	S*
10.	Computation of Earth works.	WC	Rw*	Rw*
11.	Record of tree cuttings, stacking of blasted rocks and other quarry materials including handing over to Owner	WC	S	S
12.	Preparation of "As built drawings	WC	Rw	Rw
13.	Removal of Surplus earth/excavated material and leveling in disposal areas.	WC	S	-
	<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw	Rw

CAT B: All fillings

CAT C: All cuttings.

\* In case quantum of earthwork is required to be certified by EIL then HP.



ITP NO. : 2704

EXCAVATION

SL. NO.	ACTIVITY	CONTRACTOR	EIL		
			CAT A	CAT B	CAT C
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	HP	RW
	b) Field calibration, if any	WC	W	S	-
2.	Layout checking	WC	S	-	-
3.	Taking initial levels	WC	S	-	-
4.	Slopes of excavation, benching, overburden, shoring & strutting (in case of deep excavation)	WC	S	S	-
5.	Check for sub-soil water, dewatering requirements as per specifications.	WC	S	S	S
6.	Bottom level of excavation and compaction	WC	S	S	S
7.	Stacking of different type of soils separately	WC	S	-	-
8.	List of obstacles encountered (cables, pipes, conduits, etc)	WC	S	S	-
9.	Barricading of excavated pits for safety & protection from rain	WC	S	S	S
	<b>FOR HARD ROCK</b>				
1	Obtaining license from district authorities for undertaking blasting operations	WC	Rw	Rw	Rw
2	Storing of explosive materials as per explosive rules	WC	S	S	S
3	Prominent display of red flags around the area to be blasted	WC	S	S	S
4	Check the dimensions of bore holes	WC	S	S	S
5	Stacking of hard rock for useable/non useable including handing over to owner	WC	S	S	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

CAT A : Equipment foundations, Plant buildings, Technological structure, etc.

CAT B : Non Plant buildings, pipe racks, pipe culverts, bridges, etc.

CAT C : Boundary walls, wing walls, manholes, drains, etc



ITP NO. : 2705

**BACK FILLING**

SL. NO.	ACTIVITY	CONTRACTOR	EIL		
			CAT A	CAT B	CAT C
1.	Selection of materials/selected earth	WC	W	S	S
2.	Check for treatment of soil, if any	WC	S	S	-
3.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	HP	HP
	b) Field calibration, if any	WC	W	S	-
4.	Filling in specified layers, consolidating, watering.	WC	S	-	-
5.	Compaction tests for layers	WC	W	S	Rw
6.	Filling to required levels	WC	S	-	-
	<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

**CAT A:** Equipment foundations, Plant buildings, Technological structure, etc.  
**CAT B:** Non Plant buildings, pipe racks, pipe culverts, bridges, etc.  
**CAT C:** Boundary walls, wing walls, manholes, drains, etc

ITP NO. : 2706

UNDERGROUND PIPING (RCC/ CI)

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Checking of material	WC	NOTE 1	NOTE 1
2.	Adequate slope, benching in excavation for safety purposes (if required)	WC	S	
3.	Layout, line & level	WC	S	-
4.	Laying & jointing, grouting at manholes/chambers	WC	S	-
5.	Check for supports/ firm bed/ sub soil water level	WC	S	-
6.	Testing for leakages by blocking pipe ends	WC	W	W
7.	Hydro-testing and other tests, Removal of blockages, Cleaning & flushing of system	WC	W	W
8.	Backfilling in layers	WC	Rw	Rw
9.	Check for MS rungs in proper position, inlet/outlet pipe levels in manholes	WC	S	S
10.	Preparation of "As-built drawings"	WC	Rw	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT B: Main Plant Buildings, Utilities, Offsites etc.

CAT C: Non Plant Buildings, Technological Buildings, Admn. Buildings, Gate House, Security Rooms, etc.

ITP NO. : 2707

**WBM ROADS**

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	RW
	b) Field calibration, if any	WC	S	-
2.	Layout checking including Road crossings and taking initial levels	WC	S	S
3.	Approval of source & checking/testing of materials (wherever required)	WC	NOTE 1	NOTE 1
4.	Filling (if any), compaction, providing cambers in sub-base including levels	WC	S	S
5.	Spreading metal to required thickness, line & levels, dry rolling including spreading of screening material	WC	-	-
6.	Check for camber and levels over metalling	WC	S	S
7.	Spreading murrum/ sand, watering and rolling	WC	S	-
8.	Checking thickness after each layer and rectification thereof (if any)	WC	S	S
9.	Checking quantity of aggregate by excavation of trial pits as per IRC Code	WC	W	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

**CAT B:** Roads subjected to heavy loading, connected to main highway, main plant roads

**CAT C:** Balance Roads



ITP NO. : 2708

**BLACK TOPPING (PREMIX CARPETING) &  
BITUMINOUS MACADAM (BM)**

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Approval of source of materials	WC	Note 1
2.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP
	b) Field calibration, if any	WC	S
3.	Surface preparation & check for camber/level	WC	S
4.	Checking/ testing of material wherever required	WC	W
5.	Tack coat application	WC	-
6.	Laying of Premix carpeting/ BM including rolling	WC	S
7.	Application of Seal coat	WC	-
8.	Check for camber and levels	WC	S
9.	Check for bitumen temperature and consumption	WC	S
10.	Thickness check of Premix carpet/ BM	WC	S
11.	Removal of surplus earth	WC	-
12.	Berm preparation	WC	-
13.	Final Inspection	WC	W
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

ITP NO. : 2709

TANK PADS

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT A	CAT B
1.	Approval of source of materials	WC	NOTE 1	NOTE 1
2.	Stripping the area	WC	-	-
3.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	RW
	b) Field calibration, if any	WC	W	S
4.	Layout and marking of ground level	WC	S	-
5.	Excavation to required level, compaction of sub-base	WC	W	S
6.	Checking/ testing of materials	WC	W	S
7.	Filling selected materials in specified layers, rolling, watering	WC	S	-
8.	Compaction tests	WC	W	Rw
9.	Gravel filling under annular ring with compaction and adding graded filler material (As applicable)	WC	W	S
10.	Anti-corrosive layer, consolidation	WC	S	-
11.	Premix carpeting on side slopes	WC	S	S
12.	Preparation of "As-built drawing" for erection	WC	Rw	Rw
13.	Check for settlement of pads during hydro testing of tanks	WC	W	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

**CAT A:** All Site fabricated steel storage tanks for process fluid/ Hydrocarbon, floating roof, tanks having capacity 600cum or 10m dia. and 8 m height.

**CAT B:** Site fabricated steel storage tanks for Raw water, Fire water, waste water, DM water, etc. and all tanks not covered under "CAT A".

ITP NO. : 2710

**MICRO GRADING**

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	RW
	b) Field calibration, if any	WC	-
2.	Taking initial levels	WC	S
3.	Clearing/ Removal of extra soil, debris, etc. from site by transportation	WC	-
4.	Taking final levels	WC	S
5.	Verification of gradient of ground	WC	-
6.	Finishing of ground surface by hand compactor/ Roller (As applicable)	WC	S
7.	Final inspection	WC	W
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw



ITP NO : 2741

PLAIN CEMENT CONCRETE

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	RW	RW
	b) Field calibration, if any	WC	S	Rw
2.	Checking of layout and materials, compaction of sub-grade	WC	S	-
3.	Mix proportion	WC	S	-
4.	Check for shuttering, dewatering if any.	WC	-	-
5.	Concreting with proper compaction	WC	-	-
6.	Checking of top level of PCC	WC	Rw	-
7.	Curing	WC	-	-
	<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw	Rw

CAT B : for filled-up area

CAT C : for cutting area

ITP NO : 2742

REINFORCED CEMENT CONCRETE (SUBSTRUCTURE)

SL. NO.	ACTIVITY	CONTRACTOR	EIL		
			CAT A	CAT B	CAT C
1	Approval of source of materials	WC	HP	HP	Rw
2	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	HP	HP
	b) Field calibration, if any	WC	Rw	Rw	Rw
3	Checking of layout & condition of PCC/ leveling course	WC	S	S	-
4	Incoming material checking	WC	NOTE 1	NOTE 1	NOTE 1
5	Design of mix & establishment of strength at site by trial mix	WC	HP	HP	HP
6	Check for line & level of shuttering including its condition, quality and rigidity.	WC	S	S	-
7	Check for sub-soil water & dewatering arrangement, if any	WC	S	S	-
8	Reinforcement & covers to reinforcement	WC	S	S	S
9	Inserts, Anchor bolts and pipe sleeves, pockets, dowels, etc.	WC	S	S	S
10	Pour Card	WC	W	W	Rw
11	Check for obstacles encountered (Electrical conduits, pipe lines, etc.)	WC	S	S	-
12	Concreting, testing, compaction & finishing	WC	W	S	Rw
13	Casting of cubes	WC	S	S	S
14	Curing	WC	S	S	-
15	Testing of cubes	WC	W	W	W
16	Removal of shuttering	WC	S	-	-
17	Check for water tightness, rendering, if any	WC	S	S	S
18	Preparation of As-built drawings	WC	Rw	Rw	Rw
	<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT A: Critical foundations of equipments i.e. compressors, reactors, columns, stacks, foundations subjected to dynamic loading and any other foundation with RCC Quantity > 250 Cum in single pour, etc.

CAT B: Unit Pipe racks, plant buildings and other equipment foundations not covered in category A, etc

CAT C: Non critical pipe racks (branch pipe, offsite pipe rack, etc.) non-plant buildings, pipe sleepers, manhole, catch pit and balance works.



ITP NO : 2743

REINFORCED CEMENT CONCRETE (SUPER STRUCTURE)

SL. NO.	ACTIVITY	CONTRACTOR	EIL		
			CATA	CATB	CAT C
1	Approval of source of materials	WC	HP	HP	Rw
2.	a) Availability of valid calibration certificates of instruments/ testing equipment	WC	HP	HP	HP
	b) Field calibration, if any	WC	Rw	Rw	Rw
3.	Checking of layout	WC	S	S	-
4.	Incoming material inspection	WC	Note 1	Note 1	Note 1
5.	Design of mix & establishment of strength at site by trial mix	WC	HP	HP	HP
6.	Check for line & level of shuttering and scaffolding/ vertical bracing including hoisting arrangements.	WC	S	S	-
7.	Reinforcement & covers to reinforcement	WC	S	S	S
8.	Inserts, bolts, pipe sleeves, MS rungs, concealed electrical conduits, fan hooks, dowels, etc. including welding if any	WC	S	S	-
9.	Pockets/ openings	WC	S	S	-
10.	Expansion joints, if any	WC	S	S	-
11.	Check for water stops, slopes, stoppers, if any	WC	S	S	-
12.	Pour Card	WC	W	W	Rw
13.	Concreting, testing, compaction & finishing	WC	W	S	S
14.	Casting of cubes	WC	S	S	S
15.	Curing	WC	S	S	-
16.	Testing of cubes	WC	W	W	W
17.	Removal of formwork/ staging	WC	S	-	-
18.	Verification of dimensions viz AFC drawings and tolerances	WC	S	S	S
19.	Check for water tightness, rendering, if any	WC	S	S	-
20.	Preparation of As built drawings.	WC	Rw	Rw	Rw
	<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT A: Super structure of foundations for Critical equipments i.e. compressors, reactors, columns, stacks, foundations subjected to dynamic loading and super structure of any other foundation with RCC Quantity > 250 Cum. in single pour, Slabs of plant and non-plant buildings, etc.

CAT B: Unit Pipe racks, plant buildings and super structure of other equipment not covered in category A, etc

CAT C: Non critical pipe racks (branch pipe, offsite pipe rack, etc.) non-plant buildings, pipe sleepers, manhole, catch pit and balance works.



ITP NO : 2745

RCC PAVEMENT/FLOORING

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Approval of source of materials	WC	Rw
2.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP
	b) Field calibration, if any	WC	S
3.	Layout checking/ excavation of all new foundations	WC	-
4.	Incoming material inspection	WC	NOTE 1
5.	Design of mix & establishment of strength at site by trial mix	WC	HP
6.	Check for proper back filling/compaction/ completion of sub - Structure works	WC	S
7.	Check for edges of shuttering, alternate panels	WC	-
8.	Check for slopes, thickness of flooring	WC	S
9.	Shuttering, reinforcement (as applicable)	WC	-
10.	Check for expansion joints/ Construction joints	WC	S
11.	Check for concealed pipe embedment, earthing, if any	WC	-
12.	Check for dividing strips, as applicable	WC	S
13.	Concreting, finishing, etc	WC	S
14.	Checking for line, levels, slopes, joints, thickness of flooring viz. AFC drawings	WC	S
15.	Curing	WC	S
16.	Grinding & polishing, as applicable	WC	S
17.	Testing of concrete cubes (as applicable)	WC	W
18.	Preparation of "As Built Drawings"	WC	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

ITP NO : 2746

**BRICK MASONARY**

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	RW	RW
	b) Field calibration, if any	WC	Rw	Rw
2.	Incoming material inspection	WC	Note 1	Note 1
3.	Cleaning of surface	WC	-	-
4.	Wetting/soaking of bricks	WC	S	S
5.	Cement mortar proportion	WC	S	S
6.	Staging & scaffolding	WC	-	-
7.	Hacking of adjacent concrete surface	WC	S	S
8.	Check for bond/closers, thickness of joints	WC	S	-
9.	Line, level & plumb	WC	S	S
10.	Raking out joints, keys in brick work, if any	WC	S	S
11.	Check for placement of Reinforcement bars in case of partition brick work	WC	S	S
12.	Embedment of fixtures	WC	S	S
13.	Curing	WC	-	-
14.	Preparation of 'As Built' Drawings	WC	Rw	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT B : Load bearing walls

CAT C : Balance works



ITP NO : 2747

STRUCTURAL STEEL WORKS

S. NO	ACTIVITY	CONTRACTOR	EIL		
			CAT A	CAT B	CAT C
<b>A</b>	<b>PRE – FABRICATION ACTIVITIES</b>				
1.	a) Availability of valid calibration certificates of instruments/ testing equipments	WC	HP	HP	Rw
	b) Field calibration, if any	WC	S	S	Rw
2.	Incoming material inspection	WC	Note 1	Note 1	Note 1
3.	Welding Filler material approval/ qualification				
	a) Manufacturing test certificates/ documents	WC	Rw	Rw	Rw
	b) Testing, if any	WC	W	W	W
4.	Approval of WPS/ PQR	WC	HP	HP	HP
5.	Welders performance qualification	WC	W	W	Rw
6.	Layout checking	WC	S	-	-
7.	Welding equipment and accessories	WC	S	-	-
8.	Preparation and approval of Fabrication drawings	WC	Rw	Rw	-
<b>B</b>	<b>FABRICATION ACTIVITIES</b>				
1.	Materials as per design drawing	WC	Rw	Rw	Rw
2.	Check straightness and non-warping of members	WC	S	S	-
3.	Dimensional and fit-up checks including provision of slopes for deflection wherever required	WC	S	S	-
4.	Visual check for welding	WC	S	S	-
5.	Grinding including surface preparation for painting and application of primer	WC	S	S	Rw
6.	Checking paint as per specs, shelf-life, etc.	WC	S	S	-
7.	Application of specified paint, painting thickness, etc.	WC	S	S	-
<b>C</b>	<b>FIELD ERECTION ACTIVITIES</b>				
1.	Lifting arrangements including test certificates of lifting tackles	WC	S	S	Rw
2.	Correctness of location	WC	S	-	-
3.	Orientation of bracing, lugs	WC	S	-	-
4.	Alignment & levels	WC	S	-	-
5.	Field welding (if any)	WC	S	S	-
6.	Grouting	WC	S	S	-
7.	Finishing coat of paint, thickness of paint etc.	WC	S	S	S
8.	Preparation of As-built drawings	WC	Rw	Rw	Rw
	<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT A: Steel structures pertaining to equipments i.e. compressors, reactors, columns, stacks, Technological structures.

CAT B: Steel structures pertaining to Unit Pipe racks, and other equipments not covered in category A, etc.

CAT C: Steel structures of Non critical pipe racks (branch pipe, offsite pipe rack, etc) plant buildings and non-plant buildings, pipe sleepers, manhole, catch pit, walkways, platforms at grade levels, etc.



ITP NO : 2771

ANTI-TERMITE TREATMENT

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Incoming material inspection & spraying devices including personal protective equipments like facemask, gloves, shoes, etc.	WC	HP & Note 1
2.	Preparation of surface for taking dosage of emulsion by ramming of each layer of soil by roding the earth at specified intervals	WC	-
3.	Backfilling and compaction in specified layers along with application of emulsifier along the sides of masonry & RCC structures	WC	S
4.	Compaction of top surface for taking dosage of emulsifier by roding the earth at specified intervals for the entire floor area before concreting	WC	-
5.	Check for consumption of emulsifier utilized	WC	S
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

ITP NO : 2772

**PLASTERING**

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Check for completeness of all hidden jobs like piping, conduiting, etc.	WC	-	-
2..	Check for grading of sand, Mix proportion	WC	S	S
3.	Sample preparation for finish and its approval	WC	W	S
4.	Neeru application on plaster (as applicable)	WC	S	-
5.	Hacking and cleaning the surface, removing loose particles, wetting the surface	WC	-	-
6.	Checking of plaster thickness, plumb & even surface	WC	S	-
7.	Check for grooves, openings, rounding off the corners, hollowness in plaster	WC	-	-
8.	Curing	WC	S	-
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	

**CAT B:** Area requiring special finish (e.g. pebble dash finish etc.)

**CAT C:** Balance works.

ITP NO. : 2773

DOORS, WINDOWS AND VENTILATORS

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Incoming material inspection	WC	Note 1	Note 1
2.	Check for sections & dimensions	WC	S	-
3.	Line, level & plumb	WC	-	-
4.	Section joinery details	WC	Rw	-
5.	Grouting with lugs/ dash fasteners	WC	-	-
6.	Check for fixtures & fittings	WC	S	S
7.	Check for thickness & type of glazing	WC	-	-
8.	Check for rubber gasket, anodizing (as applicable)	WC	-	-
9.	Brand/ shade of paints, no. of coats including surface preparation	WC	S	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT B: Main plant buildings  
CAT C: Balance works



ITP NO. : 2774

**PAINTING (BUILDING WORKS)**

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Completion of surface preparation	WC	-	-
2.	Incoming material inspection	WC	Note 1	Note 1
3.	Confirmation of colour, shade & brand	HP	-	-
4.	Check for number of coats and thickness	WC	S	-
5.	Curing, if any	WC	S	-
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

**CAT B:** Main plant buildings

**CAT C:** Balance works

ITP NO. : 2775

**SANITARY FITTINGS**

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Incoming material inspection	WC	Note 1	Note 1
2.	Checking of sample (as applicable)	WC	S	-
3.	Check completeness of finishing works w.r.t. line, level & position	WC	S	-
4.	Check proper fixing of the sanitary fittings to give aesthetic appeal	WC	S	-
5.	Check for leakage	WC	S	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

**CAT B:** Main plant buildings  
**CAT C:** Balance works

ITP NO. : 2776

**WATER PROOFING (ROOF)**

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Surface preparation for screeding/ water proof plastering	WC	W
2.	Mix proportion, thickness of screeding/ plastering & slope towards rain water pipes	WC	S
3.	Formation of groove at specified height on parapet wall	WC	-
4.	Incoming material inspection, no. of coats, application procedure and consumption.	WC	S/Note 1
5.	Termination of material in groove on vertical plane	WC	S
6.	Check for hollowness, bubbles in water proofing, if any	WC	S
7.	Conducting a sample of water proofing test by flooding the area for specified interval (as applicable)	WC	S
8.	Cleaning of surface	WC	-
9.	Submission of Guarantee in the requisite Performa	WC	Rw
	<b>INSPECTION &amp; TEST DOCUMENTS</b>		
	Review Test and Inspection Documents	WC	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.



ITP NO : 2777

**FALSE FLOORING AND FALSE CEILING**

SL. NO.	ACTIVITY	CONTRACTOR	EIL
	<b>FALSE FLOORING</b>		
1.	Manufacturers Test Certificate	WC	Rw
2.	Incoming material inspection	WC	Note 1
3.	Cleaning base floor	WC	-
4.	Painting base floor with Polyurethane based paint (as specified)	WC	S
5.	Proper line, level & layout	WC	S
	<b>FALSE CEILING</b>		
1.	Manufacturers Test Certificate	WC	Rw
2.	Incoming material inspection	WC	Note 1
3.	Surface preparation of panel boards	WC	-
4.	Proper line, level & cut-outs	WC	S
5.	Painting of panel boards	WC	S
	<b>INSPECTION &amp; TEST DOCUMENTS</b>		
	Review Test and Inspection Documents	WC	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

ITP NO. : 2778

**UNDER DECK INSULATION**

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Incoming material checking including density	WC	Note 1
2.	Checking of adhesive, fasteners for anchorage	WC	S
3.	Fixing of scaffolding, ladders, platforms	WC	S
4.	Fixing of under-deck insulation with adhesive	WC	-
5.	Fixing of dash fasteners at defined spacing	WC	-
6.	Finishing	WC	S
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

ITP NO. : 2779

ROOFING ACCESSORIES

SL. NO.	ACTIVITY	CONTRACTOR	EIL	
			CAT B	CAT C
1.	Incoming material inspection	WC	HP/Note 1	HP/Note 1
2.	Check for mitring, overhang, laps, etc.	WC	S	-
3.	Slopes line, level of sheets, barge boards, ridges & gutters, overhang of sheets	WC	S	-
4.	Bolting by drilling only, length of bolts, nos., anodizing and type of washers	WC	S	-
5.	Check for slopes of rain gutters, down take pipes, north lighting curves/ supports for gutters	WC	S	-
6.	Check for leakage/ passing of light	WC	S	-
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

2) Fixing arrangement need to be reviewed with respect to contract specifications.

CAT B: Important structures (e.g. Compressor House, Warehouse and Pump House etc.)  
CAT C: Balance works.



ITP NO. : 2799

LIGHTING WORKS (NON PLANT BUILDINGS)

SL. NO.	ACTIVITY	CONTRACTOR	EIL
1.	Prepare detailed conduit layout diagram as per the approved electrical drawing	WC	W
2.	Provide /PVC/GI sleeves in columns/beams at identified locations to facilitate laying of conduit on later date.	WC	S
3.	Ensure conduit & accessories material is inspected at site before using	WC	W
4.	Ensure that the conduit is laid in line with execution drawings & provide pull-wires as per requirement.	WC	S
5.	Check correctness of drop/JB locations	WC	S
6.	Check threaded joints are proper	WC	S
7.	Ensure all JB/Fan box are properly stuffed with jute	WC	S
8.	Ensure conduits are properly tied to reinforcement bars to prevent floating during concrete	WC	S
9.	Ensure proper supporting of conduit lengths wherever required	WC	S
10.	Ensure adequate chasing depth for conduit portion coming inside brick walls	WC	S
11.	Check workmanship towards joints and presence of any foreign material inside the conduits	WC	S
12.	Ensure wiring material is inspected at site before use	WC	W
13.	Ensure correctness of lighting-wire size and no. of wires as per the drawing in each conduit portion	WC	S
14.	Preparation of "As Built" drgs.	WC	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

ITP NO.: 2801

INSTALLATION/ ERECTION & TESTING OF TRANSFORMER

Sl. No.	Activity	Contractor	EIL		
			CAT A	CAT B	CAT C
1.	Incoming Material inspection at site	WC	Note-1	Note-1	Note-1
2.	Check foundation, its cleanliness, level and centre lines, Anchor bolts/insert plates, their position & straightness, flatness of contacting surface for transformer skid. In case of Rail mounted type, check centre line and levels of rails.	WC	S	S	S
3.	Check the Transformer no. and rating as per drawings and purged gas/ air pressure & oil leakage, physical damage etc.	WC	S	--	--
4.	Check availability of all accessories and Transformer oil	WC	S	--	--
5.	Check sequence of installation e.g. main tank first + radiators + accessories + internal check as per installation flow chart.	WC	S	--	--
6.	Ensure the cleanliness of connecting part e.g. flange parts and maintenance of duly tight blank flanges until commencement of assembly	WC	S	--	--
7.	Check bushing cracks, chips or presence of paint or dirt. Bushing should be cleaned as per vendor's instruction. Check explosion vent assembly & healthiness of diaphragm	WC	S	--	--
8.	Ensure the internal check by vendors' Engineer/supervisor and submission of report to Owner/ EIL duly signed by him and by the contractor	WC	Rw	--	--
9.	After completing assembly of all parts, filling of tank and OLTC with transformer oil, operation of OLTC ( prior to filling the Transformer oil, each drum must be tested against di-electric strength for minimum as per specifications )	WC	S	--	--



ITP NO.: 2801

INSTALLATION/ ERECTION & TESTING OF TRANSFORMER (contd.)

Sl. No.	Activity	Contractor	EIL		
			CAT A	CAT B	CAT C
10.	Check & ensure bus duct connection at both ends including torque checking of bolt.	WC	S	S	S
11.	Ensure cable connection at the cable & box, their colour coding & tightness. Use of spring and flat washers on the appropriate faces to be confirmed) and cleanliness of lapping surfaces. For multiple cable connection, check for correctness of RR, YY, BB grouping	WC	S	--	--
12.	If specified, fill the cable end box with tested transformer oil and ensure oil levels	WC	S	--	--
13.	Check the use of proper size conductors/ cables for HV/LV, neutral connection and their connection to NGR or earth grid/ earth point	WC	S	--	--
14.	Check equipment earthing, connections, tightness and earth resistance value on each earth pit	WC	S	--	--
15.	Ensure earthing of tertiary winding if applicable	WC	S	--	--
16.	Check leakage and oil level	WC	S	--	--
17.	Check oil filtration before energisation on & check BDV of oil(as applicable)	WC	S	--	--
18.	Check proper installation of Dessicants (reactivate the silica gel to blue; oil traps to be filled up)	WC	S	--	--
19.	Measure winding resistance at each tap	WC	S	--	--
20.	a) Test insulation resistance & PI	WC	S	--	--
	b) Ensure heat run/ dehydration of transformer	WC	W	S	--
	c) Check final IR value after dehydration and temp. Vs IR curve to ensure drying	WC	S	S	--
21.	Test vector group polarity, magnetizing current, magnetic balancing	WC	W	--	--



ITP NO.: 2801

INSTALLATION/ ERECTION & TESTING OF TRANSFORMER (contd.)

Sl. No.	Activity	Contractor	EIL		
			CAT A	CAT B	CAT C
22.	Test transformation ratio at each tap points (injecting 3 phase, 415 V at primary)	WC	W	S	--
23.	Ensure laying, termination & connection of all control & Signal cables as per cable schedule	WC	S	--	--
24.	Check Bucholtz's relay operation by air injection for both transformer & OLTC, MOG for alarm and trip contacts' function	WC	W	S	--
25.	Check setting of Fan control (auto & manual), OTI, WTI - alarm and trip	WC	W	S	--
26.	Check tap changer control/ operation- both auto & manual – without energizing the transformer. Ensure master/ followers' correct functioning	WC	W	--	--
27.	Final residual check to confirm removal of all temporary supports/ spacers, tags, accumulation of air in Buchhelz relay, oil, if any, etc., which might have been used as protection/ and identification during transportation and erection	WC	S	--	--
28.	Check operation of cooling system	WC	S	--	--
29.	Stability check, (Restricted (64R)/ standby Earth fault (51G)/ Transformer differential(87T), (as applicable)	WC	W	--	--
30.	Check CT Ratio & Polarity	WC	W	S	--
31.	Check Transformer protection relay settings as per Relay Setting chart	WC	W	S	--
32.	Mechanical Acceptance Test/ Energisation protocol of transformer	WC	HP	HP	Rw
33.	Size/ type of gravel for filling in yard as per specification / drawing	WC	S	S	--
<b>INSPECTION &amp; TEST DOCUMENTS</b>					
	Review Test and Inspection Documents	WC	Rw	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010

CAT A: Power & Distribution Transformers,  
CAT B: Lighting transformers  
CAT C: Miscellaneous transformers like isolation transformers, etc.

ITP NO.: 2815

INSTALLATION/ ERECTION & TESTING OF SWITCH GEARS/ PCC/  
MCC/ EMCC/ VFD's/ ASB/ LIGHTING PANELS

Sl. No.	Activity	Contractor	EIL	
			CAT A	CAT B
17.	Test and witness IR value of the power and control bus	WC	HP	HP
18.	Test and witness high pot tests, as specified	WC	HP	HP
19.	Ensure tightness of connection of control wiring	WC	S	-
20.	Check phasing & phase sequence between bus section and incomer.	WC	W	S
21.	Inspect secondary injection test and ensure tripping of C.B. through protection relays	WC	W	S
22.	Inspect primary injection & check the breaker tripping through protective relays, check ammeter, voltmeter, power factor indications etc. for proper functioning	WC	W	S
23.	Switch on AC & DC control supply. Check the sequence of operation of breakers electrically, local and remote interlock; ensure proper alarm and annunciation and indications in SW/ GR/ MCC/ Control Panel. Auto/ Independent/ manual mode of operation of incomer & bus coupler shall be checked as per schematics. Under voltage tripping of breakers shall be verified.	WC	HP	HP
24.	Measure contact resistance and ensure simultaneous closing & making of breaker contacts.	WC	W	S
25.	Check for relay parameters and settings	WC	W	S
26.	Differential stability (as applicable) shall be verified.	WC	S	-
27.	Checking of Man machine communication and verification of graphics	WC	S	S
28.	Mechanical Acceptance Test/Energisation protocol	WC	HP	HP
	<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT A: HT Switch Gears / PCC Control Panels/ VFD's

CAT B: MCC / EMCC/ASB/ lighting panels.



ITP NO.: 2820

**INSTALLATION/ ERECTION & TESTING OF EHT/ HT MAIN BUS AND  
ALLIED EQUIPMENTS**

Sl. No.	Activity	Contractor	EIL
1.	Incoming Material Inspections	WC	Note-1
2.	Check the insulators wall bushing for any damage like chips or cracks. Ensure proper installation of the insulators & bushing	WC	S
3.	Check the clearance between conductor to ground & conductor to floor level. Ensure minimum clearance between two conductor Bus	WC	S
4.	Check the anchoring of the conductor bus and terminal/Tap Off connections	WC	S
5.	Ensure correctness of phase sequence	WC	W
6.	Check earth connections and measure earth resistance of the supporting structures of insulators	WC	S
7.	Check IR value of the conductor bus phase to phase and each phase to earth.	WC	W
8.	Check operation of isolators, CB, earth switch and interlocks, check ratio & polarity of CTs, PTs	WC	S
9.	Check high voltage tests keeping all the CB's and isolators closed but PT's should be disconnected	WC	W
10.	Check hot line insulator washing equipment and system- Nozzle position & resistivity of water	WC	S
11.	Check type & class of lightning arrestor, its earth connection and earth resistance	WC	W
12.	Mechanical Acceptance Test/ Energisation protocol	WC	HP
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.



ITP NO.: 2825

CABLE LAYING

Sl. No.	Activity	Contractor	EIL	
			CAT B	CAT C
1.	Incoming material Inspection	WC	Note-1	Note-1
2.	Survey the cable route as per AFC drawings, identify any possible obstruction like road/pipe rack crossing, heat sources etc. and finalize the cable route	WC	S	S
3.	Complete all road/pipe crossings etc. as per drawing/requirement	WC	S	S
4.	Prepare cable drum schedule to avoid wastage and minimize cable joints	WC	Rw	Rw
5.	Ensure entire route is available for cable trench	WC	S	S
6.	Ensure availability of cables of required size and length	WC	S	S
7.	Verify the dimensions of buried trench as per AFC drawings (in case of buried cables)	WC	S	S
8.	Ensure readiness of cable trays and installation of GI pipes (for cable protection) wherever required	WC	S	S
9.	Ensure the initial bed of sand is provided as per standard and of required thickness	WC	S	S
10.	Lay cables as per the cable schedule, minimizing criss-crossing of cables within the trench (1 <sup>st</sup> layer). Check IR Values in drum before laying.	WC	S	S
11.	Provide cable tags at specified locations	WC	Rw	Rw
12.	Record IR value of cables of first layer after sand filling	WC	W	S
13.	Provide second layer of sand, and ensure proper clearance between HT/LT cables (wherever applicable)	WC	S	--
14.	Complete layer wise laying of cables and sand filling	WC	S	--
15.	Record IR value of cables of each layer after sand filling	WC	S	--
16.	Provide final layer of sand	WC	S	--
17.	Ensure cable trenches in hazardous areas are filled with sand	WC	S	--

ITP NO.: 2825

**CABLE LAYING**

Sl. No.	Activity	Contractor	EIL	
			CAT B	CAT C
18.	Provide bricks/slabs for cable protection in buried trenches	WC	S	--
19.	Back fill the trenches with earth and compact properly after ensuring the completion of earthing works, if any as per earthing layout drawings.	WC	S	--
20.	Install cover slabs and seal the trenches in plant/offsite areas after ensuring the completion of earthing works, if any.	WC	S	--
21.	Remove surplus earth generated as per provisions in the contract.	WC	S	--
22.	Hi pot test of cables as required.(as applicable)	WC	W	W
23.	Provide cable markers as per the specifications at identified locations	WC	Rw	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

**CAT B :** All HT/HV cable works.

**CAT C :** All LT/MV cable works and control cable laying works.

ITP NO.: 2830  
LIGHTING SYSTEM

Sl. No.	Activity	Contractor	EIL	
			CAT A	CAT B
1.	Incoming material inspection	WC	Note-1	Note-1
2.	Check lighting fittings for damage/ lack of accompanying documents for specialized items like lighting fixtures, control gear box, glands, flameproof/ non-flameproof equipment/ fittings, lighting poles/ accessories, lighting mast, fans, receptacles; certificates from recognized authorities for Class IIA, IIB, IIC explosion proof/ flameproof fixtures/ plugs/ sockets.	WC	HP	HP
3.	Ensure lighting fixtures during installation do not interfere with any other plant equipment. In case of fouling, suggest a change of location & take approval of Owner/ EIL before proceeding	WC	W	S
4.	Mounting of receptacles/mast/poles as per drawings & standards.	WC	S	S
5.	On walkways, platforms & outdoor areas, lighting fixtures are located nearer to landing of stairs/ ladders, gauges, flow meters etc.	WC	-	-
6.	Provision of plugs for spare entry/ sockets (especially in hazardous areas). Erection of lighting poles/ fixtures manually on concrete foundations as per drawings.	WC	W	S
7.	Check earth continuity for individual sockets/ outlets as well as for the complete lighting system	WC	S	Rw
8.	Ensure lighting circuit are marked as per AS Built drawing.	WC	S	S
9.	Ensure luminaries for emergency purpose carry identification marks.	WC	S	S
10.	Illumination level checking after completion of all indoor & outdoor lighting activities.	WC	S	S
11.	Load balancing of LDB	WC	S	S
12.	Welding/ bolting of poles to base/ foundation. Check for verticality of poles, alignment adjustments as required	WC	W	S
13.	Ensure cable termination, earth continuity, etc. and sealing of spare entries of JB's	WC	S	S
14.	Ensure touch-up painting or galvoseal application done at affected areas to arrest corrosion.	WC	S	S
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.

CAT A : All lighting works in Hazardous area, escape routes.

CAT B : All lighting works in Non-hazardous areas and general office areas.



ITP NO: 2835

EARTHING SYSTEM

Sl. No.	Activity	Contractor	EIL	
			CAT A	CAT B
1.	Incoming material Inspection	WC	Note1	Note1
2.	Ensure materials to be used for earthing are in accordance with the contract specifications and inspected & cleared by Owner/ EIL before putting in use	WC	W	S
3.	Ensure the earthing layouts are surveyed & confirmed before commencement of excavation to avoid re-works/ interference/ fouling with other underground installations.	WC	S	--
4.	Ensure the electrodes have a clean surface, free from non-conducting materials like paint, grease etc.	WC	S	--
5.	Check the earth pit is backfilled by using alternate layers of charcoal & common salt and individually numbered for identification.	WC	S	--
6.	Measure earth resistance of each earth pit/electrode installed.	WC	S	S
7.	Check top level of the earth pit is matched with the finished grade level.	WC	S	S
8.	Ensure earthing grids are installed as per the pre-determined layout & earthing conductors are at a depth specified in the specifications from the grade level.	WC	S	S
9.	Ensure weld joints are made by overlapping the strip equivalent to double the width of the strip and three sides continuously weld.	WC	S	S
10.	Check all joints of the conductors below the grade level are welded & suitably protected by application of two coats of bitumen & wrapping with the Jute. Earthing strips laid above ground are welded and protected by applying two coats of bitumen.	WC	S	--
11.	Ensure the joints are inspected before the coat application & backfilling.	WC	S	S
12.	Ensure all the risers are protected against mechanical damage & are clamped to the walls, columns, etc.	WC	S	S

ITP NO: 2835

**EARTHING SYSTEM**

Sl. No.	Activity	Contractor	EIL	
			CAT A	CAT B
13.	Ensure all the risers are protected against mechanical damage & are clamped to the walls, columns, etc.	WC	S	S
14.	Ensure all the MV & HV electrical equipments are doubly earthed by connecting two points on the equipment to the earth grid. Rest of the structural, mechanical, piping is connected to the earth grid as per the contract specifications & drawings.	WC	S	-
15.	Ensure all process pipelines are bonded & earthed at entry & exit points of battery limit of hazardous area.	WC	S	-
16.	Ensure lightening protection grid is connected to the individual electrode and bonded to the main earth grid at two or more points as per the drawings.	WC	W	S
17.	Ensure each lighting fixture & receptacle is earthed through extra core provided in the lighting cable (normally, the third core of a 3 core cable)	WC	S/Rw	Rw
18.	Removal of surplus earth generated as per provisions of the contract.	WC	S	Rw
<b>INSPECTION &amp; TEST DOCUMENTS</b>				
	Review Test and Inspection Documents	WC	Rw	Rw

**NOTE : 1)** For incoming material inspection please refer ITP no: 6-82-1010.

**CAT A :** All earthing in hazardous areas/ communication/ control systems.

**CAT B :** Earthing in non hazardous area.



ITP NO.: 2840

INSTALLATION OF BUS DUCT

Sl. No.	Activity	Contractor	EIL
1.	Incoming Material inspection at site	WC	Note 1
2.	Ensure that the switch board terminal box & the transformer terminal boxes are inspected & cleared before proceeding to the bus duct installation.	WC	S
3.	Check the equipment no. and rating as per drawings, no physical damage, etc.	WC	S
4.	Check availability of all accessories	WC	S
5.	Inspect the bus duct insulators for any physical damage occurred during the transit.	WC	S
6.	Check bushing cracks, chips or presence of paint or dirt. Bushing cleaned as per vendor's instruction.		S
7.	Ensure various sections of the bus duct enclosures are coupled together by using proper gaskets & bellows as specified.	WC	S
8.	Ensure the bus bars are properly fixed & coupled on the insulator and correct phases are connected at both ends.	WC	W
9.	Ensure bus bar bolts are tightened to the required torque values) using calibrated torque wrench.	WC	S
10.	Ensure bus bar joints are insulated using manufacturers recommended materials, wherever required.	WC	-
11.	Prior to closing of the bus duct cover, ensure that the bus duct enclosures are cleared of tools/ loose materials and debris.	WC	W
12.	Ensure enclosure of bus duct & support structures earthed (to the earthing grid) as per drawing.	WC	S
13.	Check touch up painting wherever required on completion of installation.		S
14.	Ensure wall sealing is done & sun shields provided as per drawings.	WC	S
15.	Ensure bus bar joints are cleaned/ polished & not oxidised before bolt-up connection.	WC	W
16.	Ensure provisions of breathers/silica gel	WC	S
17.	Ensure provision of heaters and recording of its IR value	WC	S
<b>INSPECTION &amp; TEST DOCUMENTS</b>			
	Review Test and Inspection Documents	WC	Rw

NOTE : 1) For incoming material inspection please refer ITP no: 6-82-1010.