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Corrigendum - V dated 26/09/2025 to CPC Tender No. BHEL/CPC/SPT/E&C_MECH/26/042 for the work of –

a). Package A – Erection, Testing, Commissioning, Trial Operation & Handing Over of Boiler and auxiliaries, Power Cycle piping, ESP & auxiliaries, CW, ACW, LP & Yard piping and Fire Detection & Protection system (FDPS), piping, pumps, etc including Handling of materials at BHEL / Client's Stores / Storage Yard and transportation to site, NDT, fixing of hangers & supports, application of lining, Insulation, supply & touch-up painting, Stencilling & Labelling etc. at 1x800 MW NTPC SIPAT TPP STAGE-III, Chattisgarh.

b). Package-B- Erection, Testing, Commissioning, Trial Operation & Handing Over of Steam Turbine & Generator and Auxiliaries, Misc. Pumps, TG hall EOT cranes, DG sets, etc including Handling of materials at BHEL / Client's Stores / Storage Yard and transportation to site, NDT, fixing of hangers & supports, Stencilling & Labelling etc. at 1x800 MW NTPC SIPAT TPP STAGE-III, Chattisgarh.

A) Time Extension: Clause No. 1.0 Salient Features of NIT in NOTICE INVITING TENDER is revised as below**:**

Sl. No.	Clause No.	Existing in Tender	As per Corrigendum-I	As per Corrigendum-II	As per Corrigendum-IV	Revised As
1	Sl. No. v) DUE DATE & TIME OF OFFER SUBMISSION.	Date: 09/09/2025, Time: 10:00 Hrs	Date: 15/09/2025, Time: 10:00 Hrs	Date: 20/09/2025, Time: 10:00 Hrs	Date: 26/09/2025, Time: 10:00 Hrs	**Date: 03/10/2025, Time: 10:00 Hrs**
2	Sl. No. vi) OPENING OF TENDER	Date: 09/09/2025, Time: 16:30 Hrs	Date: 15/09/2025, Time: 16:30 Hrs	Date: 20/09/2025, Time: 16:30 Hrs	Date: 26/09/2025, Time: 16:30 Hrs	**Date: 03/10/2025, Time: 16:30 Hrs**

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B) Modification in NIT and PRE QUALIFYING REQUIREMENTS (PQR): Following clauses of existing PRE QUALIFYING REQUIREMENTS (PQR) (Annexure – 1) of NIT are **revised** as mentioned below:

Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender	Revised Clause	
1	**B.2**	**Technical:** Bidder who wish to participate should have experience as below. Bidder shall meet (B.2.1) OR (B.2.2.1 and B.2.2.2):	**B.2**	**Technical:** Bidder who wish to participate should have experience as below. Bidder shall meet (B.2.1) OR (B.2.2.1 and B.2.2.2) **OR (B.2.3.1 and B.2.3.2 and B.2.3.3 and B.2.3.4):**
	B.2.1	Bidder should have Executed One Boiler* of unit rating ≥ 190 MW. **Note:** *Bidder should have executed as standalone **(i.e. without any consortium)** Boiler consisting of "Pressure Parts", "Structure" and "Power Cycle Piping of same/different unit of **same/higher rating".**	**B.2.1**	Bidder should have Executed One Boiler* of unit rating ≥ 190 MW. **Note:** *Bidder should have executed as standalone bidder Boiler consisting of "Pressure Parts", "Structure" and "Power Cycle Piping of same/different unit".
	OR		**OR**	
	B.2.2.1	**Bidder should have Executed {(a.1) OR (a.2)} AND {(b.1) OR (b.2)}: -**	**B.2.2.1**	**Bidder should have Executed {(a.1) OR (a.2)} AND {(b.1) OR (b.2)}: -**
		a.1. Complete 'Pressure Part work'/ 'Power Cycle Piping work' of One Boiler of unit rating ≥190 MW.		**a.1.** Complete 'Pressure Part work'/ 'Power Cycle Piping work' of One Boiler of unit rating ≥190 MW.
		OR		**OR**
		a.2. 'Boiler Retrofitting work' which include minimum 10,000 no. of pressure part Joints (including P-91 pipe/tube welding Joint) of One unit of rating ≥500 MW in single work order.		**a.2.** '**#**Boiler Retrofitting work' which include minimum 10,000 no. of pressure part Joints (including P-91

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Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender		Revised Clause	
					pipe/tube welding Joint) of One unit of rating ≥500 MW in single work order.
		AND			**AND**
		b.1. Structure Erection work of 10,000 MT in power Plant as a standalone Bidder in single work order.			**b.1.** Structure Erection work of 10,000 MT in Power Plant as a standalone Bidder in single work order.
		OR			**OR**
		b.2. 'ESP work' / 'FGD work including **Auxiliaries**' of one unit of rating ≥190 MW.			**b.2.** 'ESP work' / 'FGD work including **Absorber**' of one unit of rating ≥190 MW.
	AND			**AND**	
	B.2.2.2	Bidder to meet **(Consortium allowed):**		**B.2.2.2**	Bidder to meet **(Consortium allowed):**
		Bidder should have Executed One STG or One Boiler (Boiler **Necessarily** consisting of Rotating Machines) of one unit of rating ≥190 MW.			Bidder should have Executed One STG or One Boiler (Boiler consisting of **Rotating Machines**) of one unit of rating ≥190 MW.
	OR			**OR**	
	B.2.3.1	**New Clause**		**B.2.3.1**	**Bidder should have Executed [(a) OR (b) OR (c)]:** **Civil/Structural/Mechanical Work/in any combination thereof in Power Plant/Industrial Projects Project in: -**
					a. In single work order of Rs. 141.60 Crore.
					OR
					b. In Two (02) work orders of Rs. 88.50 Crore.
					OR

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Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender	Revised Clause	
				c. In Three (03) work orders of Rs. 70.80 Crore.
			AND	
	B.2.3.2	**New Clause**	**B.2.3.2**	**Bidder should have** Executed Structure Erection work of 10,000 MT as a standalone Bidder in single work order in Power Plant Project.
			AND	
	B.2.3.3		**B.2.3.3**	Bidder to meet **(Consortium allowed):**
				Bidder should have Executed One Boiler "Consisting of complete Pressure Parts" of Unit rating ≥190 MW.
			AND	
	B.2.3.4		**B.2.3.4**	Bidder to meet **(Consortium allowed):**
				Bidder should have Executed One STG of one unit of rating ≥190 MW.
2	**Explanatory Notes for the PQR: Sl. no. 9**	**9. Consortium bidding is allowed for Criteria B.2.2.2. In case of consortium bidding, following shall be applicable:** **i.** Prime bidder should satisfy PQR (B.2.2.1) above. **ii.** In case a bidder is able to meet the PQ Criteria at B.2.2.1 but he is not able to meet balance PQ Criteria at B.2.2.2 mentioned as above, the bidders may submit the bid along with consortium partner/partners for meeting the PQ criteria at B.2.2.2 above	**9. Consortium bidding is allowed for Criteria B.2.2.2, B.2.3.3 and B.2.3.4. In case of consortium bidding, following shall be applicable:** i. Prime bidder should satisfy PQR (B.2.2.1) **OR [(B.2.3.1) AND (B.2.3.2)] above.** ii. In case a: a. Bidder is able to meet the PQ Criteria at B.2.2.1 but he is not able to meet balance PQ Criteria at B.2.2.2 mentioned as above, the bidders may submit the bid along with	

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Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender	Revised Clause
			consortium partner/partners for meeting the PQ criteria at B.2.2.2 above. b. Bidder is able to meet the PQ Criteria at B.2.3.1 AND B.2.3.2 but he is not able to meet balance PQ Criteria at B.2.3.3 AND B.2.3.4 mentioned as above, the bidders may submit the bid along with consortium partner/partners for meeting the PQ criteria at B.2.3.3 AND B.2.3.4 above.
		iii. Number of partners including prime bidder shall NOT be more than **02 (two).**	iii. Number of partners including prime bidder shall NOT be more than **03 (THREE).**
		iv. Prime bidder shall be responsible for satisfying the financial PQR.	iv. Prime bidder shall be responsible for satisfying the financial PQR.
		v. Prime bidder shall submit the entire tender along with the credentials, all statutory documents and the documents in support of PQR condition of the Consortium Partner.	v. Prime bidder shall submit the entire tender along with the credentials, all statutory documents and the documents in support of PQR condition of the Consortium Partner.
		vi. All conditions as in Clause 23 of NIT shall also be applicable for consortium bidding.	vi. All conditions as in Clause 23 of NIT shall also be applicable for consortium bidding.
3	**Explanatory Notes for the PQR: Sl. no. 10. L**	**l.** "ERECTION" shall mean completion **of Preassembly, Placement, Alignment, Welding/Bolt Tightening and NDT** (as applicable).	**l.** In case of the erection work is under progress, "ERECTION" shall mean completion upto Welding/Bolt Tightening etc. (as applicable).
4	**Explanatory Notes for the PQR: Sl. no. 12**	Power Cycle piping **means Main Steam, Hot Reheat, Cold Reheat,** HP Bypass.	Power Cycle Piping work necessarily consisting of MS, CRH, HRH & **HP Bypass** inside Main Power House.

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Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender	Revised Clause
5	**Explanatory Notes for the PQR: Sl. no. 14**	**For B.2.2.1 – a.1 & b.2, Balance/R&M/Retrofitting/Overhauling type of works shall NOT be considered.**	Works of Renovation & Modernization (R&M)/ Retrofitting/ Overhauling/ Balance work shall only be considered in following cases:- a. Specific physical or financial quantity is defined in PQ criteria. b. Categorically specified in PQ criteria.
6	**Explanatory Notes for the PQR: Sl. no. 15**	Maximum number of consortium partners allowed is **02** numbers i.e. **Main** Bidder + **One (01)** Consortium Partners.	Maximum number of consortium partners allowed is 03 numbers i.e. Prime Bidder + Two (02) Consortium Partners.
7	**Explanatory Notes for the PQR: Sl. no. 17**	**New Clause**	**#** - Boiler Retrofitting work includes Retrofitting / Overhauling/ R&M/ Balance work of Boiler.
8	**Explanatory Notes for the PQR: Sl. no. 18**	**New Clause**	**Note for Criteria B.2.3.1:** a. Exclusive order for supply shall not be considered b. Value of work is to be updated as per procedure defined in Sl. no. 19 of Explanatory Notes for the PQR as below.
9	**Explanatory Notes for the PQR: Sl. no. 19**	**New Clause**	• For QR 'B.2.3.1' above, actual executed value shall be considered. • The evaluation currency for this tender shall be INR. • For QR 'B.2.3.1' above, Value of work is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission as per following formula-

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Sl. No.	PQR Clause No. / Annexures No.	Existing Clause in Tender	Revised Clause
			$P = R + 0.425 \times R \times \frac{(X_N - X_0)}{X_0} + 0.425 \times R \times \frac{(Y_N - Y_0)}{Y_0}$ Where P = Updated value of work R = Value of executed work X_N = All India Avg. Consumer Price index for industrial workers for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered). X_0 = All India Avg. Consumer Price index for industrial workers for last month of work execution. Y_N = Monthly Whole Sale Price Index for All Commodities for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered). Y_0 = Monthly Whole Sale Price Index for All Commodities for last month of work execution.
10	**NIT Sl. no. 23.3**	Number of partners for a Consortium Bidding (or Technical Tie up) including Prime Bidder shall be NOT more than **02 (two).**	Number of partners for a Consortium Bidding (or Technical Tie up) including Prime Bidder shall be NOT more than **03 (three).**

C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC): Some clauses of existing TCC are **revised** as mentioned below;

Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
1	Chapter-II: Scope of Work, Clause no. 2.13.11.	Contractor has to deploy following manpower at site/BHEL PSER office, in addition to requirement mention elsewhere in this contract, within 15 days from the date on which the requirement is mentioned in Contractor performance review (F-14) format. a).04 nos. Engineer/Supervisor* (Minimum Qualification Engineering/Diploma) b). 02 nos. Computer Operator (Experience in computer as mention in clause 2.7) c). 04 nos. Service staffs. **d). 06 nos. Safety Engineer. The qualification is as per HSE plan.** The deployed manpower shall report to BHEL and may be deployed at any location. BHEL shall make payment on pro rata monthly basis on actual deployment as per BOQ (considering 26 working days in a month). Payment shall be made as per BOQ item no "Section B". ……..	Contractor has to deploy following manpower at site/BHEL PSER office, in addition to requirement mention elsewhere in this contract, within 15 days from the date on which the requirement is mentioned in Contractor performance review (F-14) format. a).04 nos. Engineer/Supervisor* (Minimum Qualification Engineering/Diploma) b). 02 nos. Computer Operator (Experience in computer as mention in clause 2.7) c). 04 nos. Service staffs. The deployed manpower shall report to BHEL and may be deployed at any location. BHEL shall make payment on pro rata monthly basis on actual deployment as per BOQ (considering 26 working days in a month). Payment shall be made as per BOQ item no "Section B". ……..
2	Chapter-III: Facilities in the scope of Contractor/BHEL (Scope Matrix), Clause no. 3.10.1.	Construction power (three phase, 415 V/ 440 V) shall be provided by BHEL free of cost at Two points near the site at a distance of approx. 500M **within 06 months from the date of start of work**. Further, distribution shall be arranged by the contractor at his own cost and services. However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind	Construction power (three phase, 415 V/ 440 V) shall be provided by BHEL free of cost at Two points near the site at a distance of approx. 500M. Further, distribution shall be arranged by the contractor at his own cost and services. However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project at no extra cost to BHEL.

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<table>
<tr><th>Sl. No.</th><th>TCC Clause No.</th><th>Existing clause in Tender</th><th>Revised clause</th></tr>
<tr><td></td><td></td><td>of power interruptions during the course of the project at no extra cost to BHEL.

If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor shall be responsible for fulfilment of all requirements including statutory requirements in this regard.</td><td>If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor shall be responsible for fulfilment of all requirements including statutory requirements in this regard.</td></tr>
<tr><td>3</td><td>Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no. 4.2</td><td>Other T&Ps: The following Other Tools & Plants (T&P) shall be arranged by the Contractor for execution of work under Package A & B as per Technical Conditions of Contract of this tender within the quoted rate. Below given Quantities are tentative for planning purposes by the bidder.

For Package A and Package B:<table><tr><th>SN</th><th>DESCRIPTION OF OTHER T&Ps</th><th>CAPACITY (MINIMUM)</th><th>MINIMUM QUANTITY</th><th>REMARKS</th></tr></table></td><td>Other T&Ps: The following Other Tools & Plants (T&P) shall be arranged by the Contractor for execution of work under Package A & B as per Technical Conditions of Contract of this tender within the quoted rate. Below given Quantities are tentative for planning purposes by the bidder.

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<tr><td>4</td><td>Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no. 4.2., SN. 86</td><td>For Package A and Package B:
……<table><tr><th>SN</th><th>DESCRIPTION OF OTHER T&Ps</th><th>CAPACITY (MINIMUM)</th><th>MINIMUM QUANTITY</th><th>REMARKS</th></tr></table></td><td>For Package A and Package B:
……<table><tr><th>SN</th><th>DESCRIPTION OF OTHER T&Ps</th><th>CAPACITY (MINIMUM)</th><th>QUANTITY</th><th>REMARKS</th></tr><tr><td>86</td><td colspan="4">-Stands deleted-</td></tr></table></td></tr>
</table>

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<table>
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<tr><td></td><td></td><td>
<table>
<tr><td>86</td><td>Vacuum M/c with Accessories</td><td></td><td>01 No</td><td>For inspection of welding leakage inspection of bottom plates of absorber and tanks.</td></tr>
</table>
</td><td></td></tr>
<tr><td>5</td><td>Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no. 4.1.</td><td>
Major T&P: The following Major Tools & Plants (T&P) shall be arranged by the Contractor with certified operator for execution of work as per Technical Conditions of Contract of this tender within the quoted rate.

For Package A and Package B:
…….
<table>
<tr><th>S.N.</th><th>DESCRIPTION OF MAJOR T&Ps</th><th>CAPACITY</th><th>QUANTITY</th><th>REMARKS</th></tr>
<tr><td>8</td><td>Induction heating M/c with accessories. (Annealing cable)</td><td>125 KW Minimum 10 KHz frequency and Heating upto Temp. 770 Degree Celsius, along with all accessories. IIOT enabled.</td><td>02 Nos.</td><td>To be made available as per instruction from BHEL Site in-charge. For welding of P-91, P-92, P-22, P-23, & pipes as applicable.</td></tr>
</table>
</td><td>
Major T&P: The following Major Tools & Plants (T&P) shall be arranged by the Contractor with certified operator for execution of work as per Technical Conditions of Contract of this tender within the quoted rate.

For Package A and Package B:
…….
<table>
<tr><th>S.N.</th><th>DESCRIPTION OF MAJOR T&Ps</th><th>CAPACITY</th><th>QUANTITY</th><th>REMARKS</th></tr>
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<tr><td>9</td><td>Induction Heating M/c with</td><td>With all accessories</td><td>08 Nos.</td><td>To be made available as per</td></tr>
</table>
</td></tr>
</table>

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Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
		9 | Induction Heating M/c with accessories. (Annealing cable) | **75 KW** | 08 Nos. | To be made available as per instruction from BHEL Site in-charge. For welding of P-91, P-92, P-22, P-23, & pipes as applicable	accessories. (Annealing cable) | instruction from BHEL Site in-charge. For welding of P-91, P-92, P-22, P-23, & pipes as applicable
6	Chapter-VII: Terms of Payment, Clause no. 7.6	Interest Free Secured Mobilization Advance ..... in specifically mentioned stages of major respective resource mobilization as specified hereunder: **For Package-A:** 1. **On** Mobilization of **01 no. of Crane of 150 MT capacity, 1 no. of Crane of 100 MT capacity - 2.0%** of Contract value. 2. **On** Mobilization of **balance required T&Ps and resources at site to start the work of Boiler & ESP in Package A as finalized with BHEL Engineer In-Charge - 1%** of Contract value 3. **On** Installation and Erection of **Site Infrastructure by contractor i.e. site office stores, etc. - 01%** of Contract value. 4. **On** Mobilization of **04 nos. of Induction Heating Machine - 1.0%** of Contract value. **For Package-B:** 1. **On** Mobilization of **01 no. of Crane of 75 MT capacity - 2.0%** of Contract value. 2. **On** Mobilization of balance **required T&Ps and resources at site to start the work of STG & Auxiliaries finalised with BHEL Engineer In-Charge - 02%** of Contract value.	Interest Free Secured Mobilization Advance ..... in specifically mentioned stages of major respective resource mobilization as specified hereunder: **For Package-A:** 1. **For** Mobilization of 01 no. of Crane of 150 MT capacity, 1 no. of Crane of 100 MT capacity – 2% of Contract value. 2. **For** Mobilization of balance required T&Ps and resources at site to start the work of Boiler & ESP in Package A as finalized with BHEL Engineer In-Charge - 1% of Contract value 3. **For** Installation and Erection of Site Infrastructure by contractor i.e. site office stores, etc. – 1% of Contract value. 4. **For** Mobilization of 04 nos. of Induction Heating Machine - 1.0% of Contract value **For Package-B:** 1. **For** Mobilization of 01 no. of Crane of 75 MT capacity - 2.0% of Contract value. 2. **For** Mobilization of balance required T&Ps and resources at site to start the work of STG & Auxiliaries finalised with BHEL Engineer In-Charge - 02% of Contract value

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Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
		3. **On** Installation and Erection of **Site Infrastructure by contractor i.e. site office stores, etc. - 01%** of Contract value.	3. **For** Installation and Erection of Site Infrastructure by contractor i.e. site office stores, etc. – 01% of Contract value.
7	Chapter-XXV: Technical Annexure, S.N. Annexure-4	Addendum to existing Annexure -4	Addendum to Annexure-4: Following Annexures are added to existing Annexure-4 (Painting Schedule) of Chapter-XXV: Technical Annexure of TCC. • Addendum to Annexure-4: Painting schedule LP Piping. • Addendum to Annexure-4: Painting Schedule pulverizer. **(attached along with this corrigendum)**
8	Chapter-XXV: Technical Annexure, S.N. Annexure-10	Addendum to existing Annexure -10	Addendum to Annexure-10: Following Annexures are added to existing Annexure-10 (Welding Schedule) of Chapter-XXV: Technical Annexure of TCC. • Addendum to Annexure-10: EWS TG cycle piping. • Addendum to Annexure-10: EWS Critical piping. **(attached along with this corrigendum)**
9	Chapter-XXV: Technical Annexure	New Annexure	**Annexure-18:** Insulation guidelines **(attached along with this corrigendum).**
10	Chapter-XXV: Technical Annexure	New Annexure	**Annexure-19:** Plot Plan for Sipat 1x800 MW project **(attached along with this corrigendum).**

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Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
11	Chapter-XIV:Erection, Clause no. 14.35.1	New Sub-Clause no. 14.35.1.1	**14.35.1.1. Following FDPS systems are include in scope of this contract** **1. Fire Water Booster Pump House Equipment.** **2. High Velocity Water Spray System** (For ST, UAT & UT Transformers, Boiler Burner, Lube Oil Console, BFP Lube Oil, Turbine Lube Oil and other plant equipments.) **3. Hydrant System and Spray System** (Upto DV): Main Header and Branch Lines - Piping & Equipment. **4. Medium Velocity Water Spray System** (For Cable Galleries, DG Sets, FOPH and other plant equipments) **Terminal Points for CHP, BMHP, AHP:** 1. For CHP-BMHP- laying pipeline up-to Terminal Point with isolation valve for Hydrant and Spray Lines at 2 locations for CHP and BMHP. 2. For AHP -laying pipeline up-to Terminal Point with isolation valve for Hydrant and Spray Lines at 2 locations for AHP. Drawings shall be provided during execution.

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Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
12	Chapter-XIV:Erection, Clause no. 14.35.1	New Sub-Clause no. 14.35.1.2	**Terminal Points for following LP piping system in CHP, BMHP, AHP area:** 1. AHP- Service water line with isolation valve shall be terminated by contractor at AHP buildings/MCCs. 2. AHP- Potable water line with isolation valve shall be terminated by contractor at terminal points at AHP buildings/MCCs. 3. AHP-Clarified water line (For Seal water, Ash conditioners, dust suppression at silos, wash water etc) with isolation valve shall be terminated by contractor at terminal points at AHP buildings. 4. AHP- DMCW water line (For TAC, Fluid couplings) with isolation valve shall be terminated by contractor at terminal points at AHP buildings. 5. AHP- Raw/CTBD Water (For Wet ASH Handling System) with isolation valve shall be terminated by contractor at terminal points at AHP buildings. 6. AHP- Tapping point from existing AWRS pipe (located inside plant) shall be terminated by contractor. 7. AHP-Service Air and instrument air terminal point with isolation valve near ESP. 8. AHP-Service Air and instrument air terminal point with isolation valve near Silo utility building. 9. CHP-BMHP- Laying pipelines and terminating with isolation valve for Clarified water, DMCW, Portable water for CHP-BMHP building/ MCCs. Drawings shall be provided during execution.

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D) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are as below;

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
1	Technical Conditions of Contract (TCC), Chapter-VII: Terms of Payment, Clause no 7.6	**SECURED RECOVERABLE ADVANCES:** ….. **For Package-A:** 1. On Mobilization of **01 no. of Crane of 150 MT capacity, 1 no. of Crane of 100 MT capacity - 2.0%** of Contract value. 2. On Mobilization of **balance required T&Ps and resources at site to start the work of Boiler & ESP in Package A as finalized with BHEL Engineer In-Charge - 1%** of Contract value 3. On Installation and Erection of **Site Infrastructure by contractor i.e. site office stores, etc. - 01%** of Contract value. 4. On Mobilization of **04 nos. of Induct0069on Heating Machine - 1.0%** of Contract value. **For Package-B:** 1. On Mobilization of **01 no. of Crane of 75 MT capacity - 2.0%** of Contract value. 2. On Mobilization of balance **required T&Ps and resources at site to start the work of STG & Auxiliaries finalised with BHEL Engineer In-Charge - 02%** of Contract value. 3. On Installation and Erection of **Site Infrastructure by contractor i.e. site office stores, etc. - 01%** of Contract value. ……	**SECURED RECOVERABLE ADVANCES:** ….. **For Package-A:** 1. 01 no. of Crane of 150 MT capacity, 1 no. of Crane of 100 MT capacity - **2.5% of Contract value**. 2. On Mobilization of balance required T&Ps and resources On Installation and Erection of Site Infrastructure by contractor i.e. site office, stores - **2.5% of Contract value**.	Refer **Sl. no. 6 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**
2	Technical Conditions of Contract (TCC),	**Painting:** **Structure:** All structures shall be supplied from BHEL units/ workshops with finish coats of paint. Therefore, final painting is not	About painting works to be carried out for components /equipment asper the	Refer clause 18.25 of TCC for tentative requirement in FDPS system.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Chapter-II: Scope of Work, Clause no 2.13.9. & Chapter-XVIII: Painting, Clause no. 18.2	applicable in the scope of contractor for Unit supplied items (until specifically mentioned in the tender). However, touch up painting (wherever required), incidental to the work, shall be in the scope of the contactor, including supply of the required paints and primers and associated consumables. **For other components/equipments:** The painting works including supply of the required paints and primers and associated consumables shall be carried out as mention in the painting schedule of the respective units. **TCC. All the painting work (Refer Chapter-XVIII) required for handing-over of the equipment to customer has to be carried out in this scope.**	Painting schedule, we request BHEL to provide the quantity to be considered for our estimation purpose.	Please refer to painting schedule for different areas for scope of painting and refer the painting schedules already attached with tender documents in Chapter – XXV as mentioned below: - **a) Boiler & Aux –** TCC - Annexure-4 **b) STG & Aux –** TCC - Annexure-4 **c) FDPS system –** TCC - Annexure-4 Further following additional painting schedules are attached herewith : - **i) Painting Schedule pulverizer –** Ref. Sl.no. 7 above of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC): **ii) Painting schedule LP Piping -** Ref. Sl.no. 7 above of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):
			We shall arrange such consumables for the damages	For any inherent defects in Unit supplied items, contractor shall

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			that occur in the process of on-site activities. Any inherent defect of shop-floor painting or reasons not attributable to us shall not be in our scope.	inform BHEL Engineer in advance while issuing material from storage yard.
3	Technical Conditions of Contract (TCC), Chapter-XIII: Material Handling, Transportation and Site Storage, Clause no 13.1.	**Material Handling, Transportation and Site Storage:** Loading at BHEL / Customer stores and storage yard, transport to site, unloading at site / working area of equipment, placement on respective foundation / location, pre-assembly bay or at working area are in the scope of work. ……	Please Specify the distance between storage yards to Boiler area.	**Bidders are requested to visit site to gather precise information wrt their queries.** Laydown areas already marked in the **Plot Plan for Sipat 1x800 MW project (Annexure-19)**. Please refer. **Sl.no. 10 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**
4	General	**Fire Fighting System**	Please Provide the Layout drawing with terminal points for fire Fighting system	**Refer. Sl.no. 12 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC) for terminal points for fire Fighting system**
5	Technical Conditions of Contract (TCC), Chapter-XVII: Testing, Pre-Commissioning & Commissioning and	**…..** Required manpower including electricians is to be arranged by the contractor for carrying out commissioning of electrical hoist and load testing of electrical hoist. Required loads will be provided by BHEL free of cost. **….**	Whether electrical testing, including third-party inspection, falls under the scope of contractor or BHEL will engage separate agency for the same.	Third party inspection is not in scope of contractor. Contractor shall arrange for load testing certification and stamping at their own.

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Post Commissioning, Clause no 17.52.		Pls clarify.	
6	Technical Conditions of Contract (TCC), Chapter-II: Scope of Work, Clause no 2.4 Note-i	**Generator Stator -** Unloading of Generator Stator from trailer, near 'A' row is in the scope of this contract. In case, it is not possible to unload generator stator near 'A' row, the generator stator shall be unloaded within 100 meters from lifting location near 'A' row, further transportation/dragging to the lifting position and placement at position with the help of tandem operation of EOTs shall be in the scope of this contract. Contractor shall provide all required assistance, manpower and T&Ps for unloading of the Stator, saddle shall be provided by the BHEL.	In case Generator stator unloaded within 100 meters from lifting location 'please specify the procedure to be considered by sub-contractor. In Case re-handling and shifting to under EOT crane hook is to be taken by sub-contractor, how the payment will be compensated by BHEL Please confirm about multi axle trailer also to be considered in contractor's scope or not? Pls clarify.	Shifting to position of lifting is included in the scope of work.
			Please clarify " the actual unloading location of Generator stator", whether it is " Service bay or Near A row column" and also clarify the scope of arrangement of special trailor for transportation of stator to lifting location.	

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			We understand that required special slings, bow shackles, spreader beam with swivel mechanism for tendem operation of EOT crane shall be provided by BHEL. Request for confirmation.	Only Lifting beam with slings shall be provided by BHEL.
7	Technical Conditions of Contract (TCC), Chapter-XII: Foundations & Grouting, Clause no 12.17	**Grouting cement**	Kindly provide the Tentative Quantity for cost estimation	Bidder may use past experience.
8	General	**Weld Joint**	Kindly provide the weld joint details for Pressure Parts and critical Piping	Bidder may refer to tentative EWS for different areas. Applicable EWS shall be provided during execution.
9	Technical Conditions of Contract (TCC), Chapter-III: Facilities in the scope of Contractor/BHEL (Scope Matrix),	Land for labour colony shall be arranged by Contractor at their own cost as per availability outside project area within 5Km, Necessary levelling/dressing of allotted land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.	It is requested that free space for the labour colony to be provided within a radius of 1 km to Project Site. Locating the Colony beyond this distance will result in substantially higher transportation expenses and	Tender Conditions prevails

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<table>
<tr><th>Sl. No.</th><th>Section/Clause No</th><th>Specification</th><th>Bidder's Query</th><th>BHEL Clarification</th></tr>
<tr><td></td><td>Clause no 3.9 and Sub clause 3.9.2</td><td></td><td>inconvenience of workers at any time.</td><td></td></tr>
<tr><td>10</td><td>Technical Conditions of Contract (TCC), Chapter-II: Scope of Work, Clause no 2.13.11</td><td>Contractor has to deploy following manpower at site/BHEL PSER …… during the absenteeism shall not be paid.</td><td>KINDLY CONFIM THE NO. OF MANPOWER DEPLOYED BY US.</td><td>Ref. Sl.no. 1 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):</td></tr>
<tr><td>11</td><td>Technical Conditions of Contract (TCC), Chapter-XXIV: Bill of Quantities and % Weightage of Individual Items, Package-A, Section-B</td><td>Section-B: Mobilisation of special resources (Part with Package-A Fixed Component)
<table>
<tr><th>S.N</th><th>Deployment of Requisite Manpower as mentioned below:</th><th>UOM</th><th>Qty. A</th><th>Weightage/ Factor "X"</th><th>UNIT RATE (Rs.) B</th><th>AMOUNT (Rs.) C = A x B</th></tr>
<tr><td>1.0</td><td>Engineer / Supervisor</td><td>Man-month</td><td>132</td><td>FIXED VALUE</td><td>50,000</td><td>66,00,000</td></tr>
<tr><td>2.0</td><td>Computer operator (Skilled)</td><td>Man-month</td><td>66</td><td></td><td>27,862</td><td>18,38,866</td></tr>
<tr><td>3.0</td><td>Service Staff (Semi Skilled)</td><td>Man-month</td><td>132</td><td></td><td>23,169</td><td>30,58,324</td></tr>
<tr><td></td><td>Execution/Mobilisation of special resources (PVC Shall Not be applicable on Section B)</td><td></td><td></td><td></td><td></td><td>1,14,97,189</td></tr>
</table></td><td>KINDLY CONFIM THE NO. OF MANPOWER DEPLOYED BY US.</td><td>Ref. Sl.no. 1 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):</td></tr>
</table>

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
12	Technical Conditions of Contract (TCC), Chapter-III: Facilities in the scope of Contractor/BHEL (Scope Matrix), Clause no 3.10.1.	Construction power (three phase, 415 V/ 440 V) shall be provided by BHEL free of cost at Two points near the site at a distance of approx. 500M within 06 months from the date of start of work. Further, distribution shall be arranged by the contractor at his own cost and services. However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project at no extra cost to BHEL. If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor shall be responsible for fulfilment of all requirements including statutory requirements in this regard.	Kindly confirm the scope of supply of construction power and statutory requirements in this regard It is not economically viable to arrange construction power for undefined duration because of substantial cost involvement. Please provide compensation in case of delay.	Bidder is advised to site for assessing the readiness of Construction Power. Please Ref. **Sl.no. 2 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**
13	Technical Conditions of Contract (TCC), Chapter-XVII: Testing, Pre-Commissioning & Commissioning and Post Commissioning, Clause no 17.7.	**17.7.1 Chemical cleaning** will be carried by a separate agency appointed by BHEL. While the work of installation of tanks, Pumps, Piping and operation of the system is in the scope of that agency, the Contractor has to extend all assistance (including providing of a welding power point) and complete interface requirements for the completion of the work. **17.7.2** Bidder scope includes piping supply & return from pumps outlet at chemical cleaning temporary station to drain pit. Laying of insulation of this temporary piping, are to be carried out by the contractor within quoted rate, and required insulation materials will be provided by BHEL. The welding joints in the temporary pipe lines for acid cleaning and steam blowing are to be welded by HP welders only. Required NDT tests are to be carried out for the above joints as part of work as per customer / BHEL requirement.	Kindly required pipes and valves provided by BHEL.	Required pipes and valves shall be provided by BHEL.
14	Technical Conditions of	**Helium Leakage Test-** The contractor shall carry out the Helium Leakage Test on assembled generator to the satisfaction of BHEL	Kindly confirm the scope of supply of Helium gas.	In the scope of contractor.

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Contract (TCC), Chapter-XVII: Testing, Pre-Commissioning & Commissioning and Post Commissioning, Clause no 17.10.	Engineer. The necessary arrangement/ test kit for carrying out the Helium Leakage test shall be made available by the contractor at his cost.		
15	Technical Conditions of Contract (TCC), Chapter-II: Scope of Work, Clause no 2.13.11 & Chapter-XXIV: Bill of Quantities and % Weightage of Individual Items (BOQ Package-A, Section-B)	**Section-B: Mobilisation of special resources (Part with Package-A Fixed Component)**	BOQ matches with items a, b & c of TCC clause 2.13.11 and corresponding amount is specified. But BOQ does not include item-d of the clause, namely "Safety Engineers". Please exclude the same from clause 2.13.11.	Ref. **Sl.no. 1 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**
16	Technical Conditions of Contract (TCC), Chapter-III: Facilities in the scope of Contractor/BHEL (Scope Matrix), Clause no 3.10.3.	Sufficient power factor compensation equipment like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.	There would be multiple feeders and multiple substations involved in construction power distribution network. Penalty for low PF if any, is imposed by the Discom for the main incomer station. We suggest to put the PF control measure	Tender Conditions prevails

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			(capacitor bank) at the incomer station instead of individual feeders (end user) level to simplify the matter.	
17	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.1, S.N. 1	Major T&P (150 MT Crawler Crane - 02 nos.) - included in Contractor's scope	We propose to deploy 16 MT capacity tower crane exclusively for ESP, for the other areas like boiler main structure (limited utility – up to tier-2), duct & it's support structure outside boiler and few lifts of ESP & CW piping, we propose to deploy one 150MT crawler crane. Request to incorporate the proposed alternative.	Tender Conditions prevails
18	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.1, S.N. 2 & 3	Contractor to deploy: a) 100 MT crawler crane - 01 no. b) 100 MT tyre-mounted crane - 01 no.	According to our own experience of 800 MW Boiler & ESP job, we didn't need such cranes. Also, they would not be required for STG, PCP/Critical Piping or CW piping. We request to exclude both the cranes.	Tender Conditions prevails
19	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by	Tyre-mounted mobile crane 35/40/50 MT capacity - 02 nos.	According to our experience and assessment, one such crane would be required for pre-assembly and loading/ unloading activities. Request to alter the quantity as 1.	Tender Conditions prevails

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Contractor, Clause no 4.2, S.N. 1			
20	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.2, S.N. 6	Man-Lifter minimum 40 m height capacity – 01 no.	Because of multi-elevation, closely-spaced, gridwork of horizontal & vertical plane structure in SG, ESP & STG area, free access is not available to deploy/operate man-lifter. So we request to exclude this from the scope.	Tender Conditions prevails
21	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.2, S.N. 23 and S.N. 85 Chapter-V: T&Ps and MME to be deployed by BHEL on sharing basis, Clause no 5.1.3	- **Air Leak Test equipment with all auxiliaries- 02 sets** - **Air Blower for ATT of ESP & Ducts – 01 No** - **Venturimeter as Required**	Please provide the list of equipment & auxiliaries, capacity, quantities and target areas of ALT. ATT of ducts with air blower is practicable for smaller volume ducts, so we request for use of regular fans (FD, PA) for ATT of ducts.	Tender Conditions prevails
22	Technical Conditions of Contract (TCC),	Vacuum M/c with Accessories – 01 No. for inspection of welding leakage inspection of bottom plates of absorber and tanks.	As FGD or Tanks are not part of the scope, we request to exclude it from the list.	Ref. **Sl.no. 4 of C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.2, S.N. 86			
23	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.31	Acid/Chemical Pump required for chemical cleaning process including supply, and installation of pumps - Chemical cleaning will be carried by a separate agency appointed by BHEL. While the work of installation of tanks, Pumps, Piping and operation of the system is in the scope of that agency, the Contractor has to extend all assistance (including providing of a welding power point) and complete interface requirements for the completion of the work. Bidder scope includes supply & return piping from pumps outlet at chemical cleaning temporary station to drain pit. Laying of insulation of this temporary piping and tank are to be carried out by the contractor within quoted rate, and required insulation materials will be provided by BHEL. The welding joints in the temporary pipe lines for acid cleaning and steam blowing are to be welded by HP welders only. Required NDT tests are to be carried out for the above joints as part of work as per customer / BHEL requirement.	Temporary piping for chemical cleaning from Pumping Station to the N-pit Please clarify the scope of supply of pipe and support materials.	Required Pipes and support material shall be provided by BHEL on returnable basis.
24	Technical Conditions of Contract (TCC), Chapter-IV: T&Ps and MMEs to be deployed by Contractor, Clause no 4.32	Filling pump, for hydro test shall be arranged by the contractor, if required. For testing of LP lines, necessary hydraulic test pumps/ hand pumps are to be arranged by the contractor.	We request it to be excluded from our scope. Regular fill pump can be used, else BHEL may please arrange suitable temporary pump.	Tender Conditions prevails

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<table>
<tr><th>Sl. No.</th><th>Section/Clause No</th><th>Specification</th><th>Bidder's Query</th><th>BHEL Clarification</th></tr>
<tr>
<td>25</td>
<td>Technical Conditions of Contract (TCC), Chapter-VI: Time Schedule, Clause no 6.3.1, SL No. 14 & 17 and Chapter-XVII: Testing, Pre-Commissioning & Commissioning and Post Commissioning, Clause no 17.44</td>
<td>6.3.1.
<table>
<tr><th>SL No.</th><th>Milestones</th><th>Tentative Schedule w.r.t date of start of work of Package-A</th></tr>
<tr><td>14</td><td>Synchronization on coal</td><td>31st Month</td></tr>
<tr><td>17</td><td>Completion of Facilities</td><td>33rd Month</td></tr>
</table>
And

17.44. After synchronization, the commissioning activities will continue. It shall be the responsibility of the contractor to provide manpower including necessary consumables, hand tools and supervision as part commissioning assistance for a period of six months after synchronization or till handing over of sets to customer, whichever is earlier.</td>
<td>According to clause 6.3, Synchro & COF are scheduled in 31st and 33rd months.
However, in clause 17.44 manpower assistance is mandated for 6 months after Synchro. We are considering such duration to be 3 months according to clause 6.3, any additional requirement may please be reimbursed based on mutually agreed price.</td>
<td>Tender Conditions prevails</td>
</tr>
<tr>
<td>26</td>
<td>Technical Conditions of Contract (TCC), Chapter-XII: Foundations & Grouting, Clause no 12.9</td>
<td>Civil work for Neutralisation pit for Chemical cleaning shall be in BHEL scope. However, any other work to be executed for completion of neutralising pit shall be in the scope of work. After completion of job, dismantling of pit shall be in scope of work. Pit Size shall be approx. 30x30x1.5m. (area levelling shall be in BHEL scope). No Extra payment shall be made to the contractor for the aforementioned work.</td>
<td>Please clarify the scope of supply and application/ installation of materials like HDPE lining, aerator system, compressed air, drainage arrangement to outfall etc.</td>
<td>Civil works is excluded from the scope of this contract.

1. HDPE Lining - Excluded from scope.
2. Aerator System - Excluded from scope.
3. Compressed air - System shall be made by third party however compressor has to be provided by the contractor to enable the process.
4. Drainage Arrangement - Excluded from scope.</td>
</tr>
</table>

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			Kindly define the works in contractor scope.	Refer Technical Conditions of Contract (TCC), Chapter-XVII: Testing, Pre-Commissioning & Commissioning and Post Commissioning, clause 17.7.
27	Technical Conditions of Contract (TCC), Chapter-XII: Foundations & Grouting, Clause no 12.11	Complete grouting of structures, equipments, including anchor/ foundation bolts, beneath base, base hollows etc, as may be applicable, is INCLUDED in the scope of Contractor. Arranging all labour, building materials including cement, ordinary portland as well as quick setting – free flow - non-shrink grout mix (e.g. conbextra GP-1/GP-2/GP-3), form work, shuttering, and any other requirements is in the Contractor's scope**. …….**	Consumption of grout material primarily depends on actual TOC elevation and evenness of RCC pedestals. We request BHEL to include the grout material supply in the BOQ and Rate Schedule to avoid unforeseen cost fluctuation.	Tender Conditions prevails. Bidder may use past experience.
28	Technical Conditions of Contract (TCC), Chapter-XIV: Erection, Clause no 14.35 & its sub-clauses	ERECTION OF CW PIPING, LP PIPING AND FIRE PROTECTION PIPING	Please confirm the scope of civil work of underground piping (trench excavation, levelling & compaction, bedding, sleepers, encasing, back-filling etc).	Civil works is excluded from the scope of this contract
29	General	General	Inclusion/Exclusion of PG 34, Bunker Shell & Hopper	Bunker shell/hopper is excluded from the scope this contract.
30	Technical Conditions of Contract (TCC), Clause 10.1, Annexure 10 &	NDT Percentage of all lines	In Clause 10.1 of TCC Percentage show in EWS & in Clause 11 are contradictory, please clarify if both are applicable.	EWS attached with this tender is tentative to indicate the Bidders about welding process.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	Chapter-XI: Welding Schedule, Clause no 11			Please refer Annexure 10 regarding tentative EWS for Boiler pressure parts wherein NDT percentages are mentioned for different areas. However, it is envisaged to carryout out 100% NDT in all pressure parts component of Boiler. Additional NDT percentage mentioned in Annexure-11 for different areas is furnished so as to fulfil 100 % NDT in pressure parts components of Boiler.
31	Technical Conditions of Contract (TCC), Chapter XIV - Erection - Page No.177,178 of 277 - Clause No.14.19	**Brief feature of Steam Generator & Auxiliaries**	PG 34 is included or not. - Please Clarify	Bunker Structure and Silos not included in scope of work
32	Technical Conditions of Contract (TCC), Chapter IX - BOQ - Page No.89 of 277	**In the BOQ mentioning Temp. Piping tonnage: 263 MT**	weightage factor is not mentioned in BOQ (Chapter XXIV)	Included in LP piping weight. LP Piping rates shall be applicable for Temporary piping as well.
33	Technical Conditions of Contract (TCC), Chapter II - Scope of	**Erection & Commissioning of EOTs (TG)** is in the scope of contractor, including associated electrical works.	Please clarify the Arrangement of Loads for load test of EOT Cranes and other cranes.	Refer Technical Conditions of Contract (TCC), Chapter-XVII: Testing, Pre-Commissioning & Commissioning and Post

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
	work, Clause no 2.10.2 - Page No.14 of 277	**Load test of EOTs (TG & TDBFP)** shall be carried out by OEM, however required assistance for commissioning & load test (includes preparing cradle for loads) with manpower and T&P are to be provided by Contractor. Operation of EOTs are in the scope of contractor till trial operation and handing over of Unit. During usage, there will be wear and tear of parts. For such incidents, materials/spares shall be provided by BHEL for replacement/maintenance. In some cases of urgency, the material may have to procured by Contractor. Cost of same shall be reimbursed with RA bill based on submission of relevant appropriate documents. However, for any damages occurred due to negligence of contractor replacement/repair/rectification shall be carried by contractor at its own cost. In case of non-compliance, BHEL shall arrange for replacement/repair/rectification and debit the same from contractor's RA bill with 5% overhead.		Commissioning, **clause 17.52 and 17.53.** Load for load test of EOTs shall be provided by BHEL.
34	Technical Conditions of Contract (TCC), Chapter IV - T&P and MME to be deployed by contractor - Page No.35 of 277 - Sl.No.8&9	Induction heating M/c with accessories. (Annealing cable) - 125 KW - 02 Nos and 75 KW - 08 Nos Minimum 10 KHz frequency and Heating upto Temp. 770 Degree Celsius, along with all accessories. IIOT enabled.	At present we are using Induction Heating machines of "MILLER" make of model "PROHEAT - 35" which is 35 KW capacity only and is sufficient for the present works. But in this tender M/s BHEL is mentioned the required capacity of the machines are 125 KW and 75 KW. We request M/s BHEL please	Refer Sl. no. 5 of C**) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC):**

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			relook in this matter and also share the Suppliers / Manufacturers details for supplying the above capacities of machines.	
35	NOTICE INVITING E-TENDER (NIT) - Annexure-1: Pre-Qualifying Requirements (PQR), B.2 Technical:	**B.2 Technical:** **Bidder who wish to participate should have experience as below. Bidder shall meet (B.2.1) OR (B.2.2.1 and B.2.2.2):** **B.2.1** Bidder should have Executed One Boiler* of unit rating ≥ 190 MW. **Note:** *Bidder should have executed as standalone (i.e. without any consortium) Boiler consisting of "Pressure Parts", "Structure" and "Power Cycle Piping of same/different unit of same/higher rating". **-OR-** **B.2.2.1** Bidder should have Executed {(a.1) OR (a.2)} **AND** {(b.1) OR (b.2)}: - **a.1** Complete 'Pressure Part work'/ 'Power Cycle Piping work' of One Boiler of unit rating ≥190 MW. **-OR-**	**Bidder who wish to participate should have experience as below. Bidder shall meet B.2.2.1 or B.2.2.2** **B.2.2.1** Bidder should have Executed {(a.1) OR (a.2)} **AND** {(b.1) OR (b.2)}: - **a.1** Complete 'Pressure Part work'/ 'Power Cycle Piping work' of One Boiler of unit rating ≥ 190 MW. **-OR-**	**Refer Sl.no.1 of B) Modification in PRE QUALIFYING REQUIREMENTS (PQR):**

Corrigendum - V dated 26/09/2025 to CPC Tender No. BHEL/CPC/SPT/E&C_MECH/26/042

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
		a.2 'Boiler Retrofitting work' which include minimum 10,000 no. of pressure part Joints (including P-91 pipe/tube welding Joint) of One unit of rating ≥500 MW in single work order. **-AND-** **b.1** Structure Erection work of 10,000 MT in power Plant as a standalone Bidder in single work order. **-OR-** **b.2** 'ESP work' / 'FGD work including Auxiliaries' of one unit of rating ≥190 MW. **-AND-** **B.2.2.2** Bidder to meet **(Consortium allowed):** Bidder should have Executed One STG or One Boiler (Boiler Necessarily consisting of Rotating Machines) of one unit of rating ≥190 MW.	**a.2** Structure Erection work of 10,000 MT in power Plant as a standalone Bidder in single work order. **-AND-** **b.1** 'Boiler Retrofitting work' which include minimum 10,000 no. of pressure part Joints (including P-91 pipe/tube welding Joint) of One unit of rating ≥500 MW in single work order. **-OR-** **b.2** 'ESP work' / 'FGD work including Auxiliaries' of one unit of rating ≥190 MW. **-AND-** **B.2.2.2** Bidder to meet **(Consortium allowed):** Bidder should have Executed One Boiler* of unit rating ≥ 190 MW. Note: *Bidder should have executed as standalone (i.e. without any consortium) Boiler consisting of "Pressure Parts", "Structure" and	

Corrigendum - V dated 26/09/2025 to CPC Tender No. BHEL/CPC/SPT/E&C_MECH/26/042

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			"Power Cycle Piping of same/different unit of same/higher rating".	

Enclosed:

Additional Annexures to Chapter-XXV: Technical Annexure of TCC:

1. **Addendum to Annexure-4: Painting schedule LP Piping.**
2. **Addendum to Annexure-4: Painting Schedule pulverizer.**
3. **Addendum to Annexure-10: EWS TG cycle piping.**
4. **Addendum to Annexure-10: EWS Critical piping.**
5. **Annexure-18: Insulation guidelines**
6. **Annexure-19: Plot Plan for Sipat 1x800 MW project**

Note:

1) **All other terms and conditions against this NIT shall remain unchanged.**
2) **This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).**

for BHARAT HEAVY ELECTRICALS LTD
Sr. DGM/ Purchase

Addendum to Annexure 4: Painting schedule LP Piping

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)
(Formerly National Thermal Power Corporation Ltd.)
(केंद्रीय कार्यालय नोएडा)
Corporate Center NOIDA

Reference : CC-ENGG-9587-001-102-PVM-B-001B **Date :** 27/07/2024

From : RAMESH CHANDRA SHIAL ENGINEER	**To :** BHARAT HEAVY ELECTRICALS LTD NEW DELHI 110049 IN **Cc :** sudipt@bhel.in dipakbag@bhel.in

Subject : EPC Package

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No.	:	HPBP-00-9587-315
Orgn. Drg. No.	:	9587-001-102-PVM-B-001B
Revision No.	:	01
Drg. Title	:	PAINTING SCHEME FOR LP PIPING
App. Category	:	CAT-I
Release Date	:	27/07/2024

Scan to verfiy

Comments : No comments

COMMENT RESOLUTION SHEET

Dt : 19-07-2024

PROJECT : NTPC LARA SUPER THERMAL POWER PLANT - STAGE II (2X800 MW)

BHEL Doc No : 1834:QPC:12 Rev 01

NTPC Doc No : 9587-001-102-PVM-B-001B

Document Description : PAINTING SCHEME FOR LP PIPING

Sl. No.	NTPC COMMENT	BHEL's REPLY
1	Pl. add Colour shade shall be as per NTPC colour coding scheme	Noted and updated in Note No: 4 of the Painting scheme for LP Piping.

Based on the above clarifications, NTPC is requested to approve the quality plan.

For BHEL

Ramesh

BHARAT HEAVY ELECTRICALS LIMITED
PIPING QUALITY ASSURANCE & CONTROL DEPT, TRICHY

PAINTING SCHEME FOR LP PIPING

(ACW / ECW / Plant water, Air Piping, etc...,)

PROJECT : NTPC LARA SUPER THERMAL POWER PLANT - STAGE II (2X800MW)
BHEL CUSTOMER Nos : 1834, 1835

QPNo: 1834:QPC:12
REV.NO: 01
Dt : 19.07.2024

Sl. NO	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat			Finish coat			Total DFT Microns (Min.)	REMARKS
			Primer	No of coats	Paint	No of coats	Shade	Paint	No of coats	Shade		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	(a) Internal Surface - ACW Pipe (for pipe - dia - 1000 mm and above)	Blast Cleaning SSPC SP-10 SA 2½ *(Refer Note 1)*	Epoxy based Zinc rich Primer *(Refer Note 2)*	1 (50 Microns Min. per coat)	-----	-----	-----	Coal tar epoxy *(Refer Note 2)*	2 (75 Microns Min. per coat)	-----	200 Microns *(Refer Note 3)*	(Refer Note 3)
	(b) Hoilday test (Refer Note 3)	Holiday testing by low voltage (75 Volts Min.) wet sponge Holiday detector or by High voltage (Votage per micron of DFT is as recommended by Paint Manufacturer subjected to minimum of 5V / Micron). Holiday test Equipment to be calibrated before testing.										
2	External Surface of ACW --Buried Piping / Encased in concrete (Temporary Protection for transportation from works to site). **Further protection to be done by BHEL Erection Group as per Contract requirement.	SSPC-SP3 / Power Tool Cleaning	Red Oxide Zinc Phosphate (Alkyd base to IS 12744)	1 (30 Microns per coat)	-----	-----	-----	-----	-----	-----	30 Microns	
3	External Surface a) Over ground piping of ACW.(For all diameters) b) External Surface of ECW, Plant water (For all diameters)	SSPC-SP3 / Power Tool Cleaning	Red Oxide - Zinc Phosphate (Alkyd base to IS: 12744)	2 (25 Microns per coat)	-----	-----	-----	Synthetic enamel Long oil Alkyd to IS: 2932	3 ** (35 microns per coat)	Smoke Grey (Shade No. 692 of IS: 5)	120 at shop + 35 at site	** (2 coat at shop + 1 coat at site)
4	Galvanised and Stainless steel Piping	No painting										

Notes:

1. Blast cleaning to near white metal to obtain roughness as per epoxy paint data sheet.
2. Application of Epoxy based Zinc rich Primer, Coal Tar Epoxy shall be done as per manufacturer's data sheet / recommendation, meeting the thickness requirements as per this document.
3. Testing requirements like DFT, holiday test shall be as per BHEL approved QP with Witness by BHEL / BHEL nominated inspection agency.
4. Colour shade shall be as per NTPC colour coding scheme.

PREPARED BY :	APPROVED BY:	For NTPC use MDL No : 9587-001-102-PVM-B-001B	Page 1/1
K. SARANYA MGR/QA	S JEGAN SR.MGR/Q		

Addendum to Annexure 4: Painting Schedule pulverizer

Addendum to Annexure 4 Painting Schedule pulverizer

COMPRENSIVE RESPONSE SHEET			
Project ID & Description		2X800 MW DVC KODERMA TPS PHASE-II	
Equipment Name & System Details		Coal Pulveriser	
Name of Document		PAINTING SCHEME FOR PULVERISERS	
NTPC Doc No		3112-102-055-PVM-W-185	Rev No :- 00
BHEL Doc No		HY-BM-KDRM-PS-00	Rev No :- 00
Sl . No.	**Page No. of Document**	**DVC Comments**	**BHEL Reply**
1	3 of 7	Source to be provided	only those surfaces inside the pulverizer exposed to the mill airflow and coal - Finish paint is not envisaged, this is standard practice.
2	3 of 7	DFT of Primer & Paint to be specified	Indicated.
3	3 of 7	NOTE: (1)* May pl. confirm whether same primer will be applied to surfaces for all temperatures? As per NIT, Heat resistant Aluminium paint IS-13183 Gr-III to be used for temperature upto 200 degree C, Gr-II for temperature 200-400 Degree C & Gr-I for temperature 400-600 Degree C. May kindly check.	Please refer table - sl no 2 &4 all surfaces(interior and exterior surfaces) above 95 is provided with Heat resistant Aluminium Paint to IS-13183 Gr.-I.
4	6 of 7	May include another column with description "Min. DFT/Coat" in micron & segregate the details from "No. of coats" column.	Indicated.
5	6 of 7	Shall be "40". May pls. check	Total DFT 40 microns.
6	7 of 7	(2)* As per NIT, the paint schedule given in the subject document is for insulated surfaces. May pls. clarify. 3) All surfaces to be painted shall be thoroughly cleaned of oil. Grease and other foreign material. Surfaces shall be free of moisture and contamination from chemicals and solvents. 4) The paint/primer manufacturer's instructions covering thinning, mixing, method of application, handling and drying time shall be strictly followed as per NIT. 5) Surfaces prepared as per the surface preparation scheme shall be applied with primer paint within 6 hours after preparation of surfaces. 6) Where primer coat has been applied in the shop, the primer coat shall be carefully examined, cleaned and spot primed with one coat of the primer before applying intermediate and finish coats. When the primer coat has not been applied in the shop, primer coat shall be applied by brushing, rolling or spraying on the same day as the surface is prepared. Primer coat shall be applied prior to intermediate and finish coats.	2. Only Sl No 3 of table - Mill Side Assembly & Bowl & Bowl Hub Assembly are only insulated. 3. Noted and confirmed. Please refer Pg 4/7 general note -A in this regard. 4. Noted and confirmed. 5. Noted and confirmed. 6. Noted and confirmed.

DRAWING TITLE: PAINTING SCHEME FOR PULVERISERS

OWNER/PROJECT:
DAMODAR VALLEY CORPORATION

PROJECT:
2X800 MW DVC KODERMA TPS PHASE-II

EPC CONTRACTOR:
BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

	NAME	DATE	
PREPARED BY	UDAY	29.05.2025	STATUS : *FOR APPROVAL*
CHECKED BY	MTT	29.05.2025	BHEL DRAWING No.: HY-BM-KDRM-PS-00
APPROVED BY	AMAN	29.05.2025	REV NO : 01

CUSTOMER DRG./DOC NO. : 3112-102-055-PVM-W-185 REV01

TABLE OF CONTENTS

SECTION 1: SCOPE

This specification applies to the **2X800 MW DVC KODERMA TPS PHASE-II** contract. Included are all parts and assemblies manufactured by BHEL, its sister units and its sub-vendors/subcontractors.

SECTION 2: ALL INTERIOR SURFACES OF THE MILL

Interior surfaces:

Those surfaces inside the pulverizer exposed to the mill airflow and coal. Also included are those surfaces inside the pulverizer and not exposed to mill airflow and coal, such as the inside of the Planetary Gearbox, Journal Housing, and the inside of the Spring Housing. ***No finish paint is envisaged on these surfaces***.

A) **Surface preparation**: Commercial Blast SSPC-SP 3/ SP 4 (Swedish Std - SA3 / SA21/2)

1 B) **Primer**: Red Oxide Zinc Phosphate primer (Alkyd base) to IS 12744 Minimum DFT 60 microns in two coats (for surfaces below 95 Deg C) and high temperature primer (for surfaces above 95 Deg C) Minimum DFT 60 microns in two coats. Primer to be applied after surface preparation to **SP3/SP4** (SSI- SA3 / SA21/2).

Note:

1 1) Primer (Red Oxide Zinc Phosphate) along with Oil resistant paint (Enamel Synthetic, Oil Resistant paint) application is envisaged inside Planetary Gear Box Housing.
2) No primer application is envisaged on the inside of the Journal Housing.

SECTION 3: EXTERIOR SURFACES OF THE MILL WITH SURFACE TEMPERATURE GREATER THAN 95°C AND INSULATED

Exterior surfaces:

Those surfaces visible by someone outside the fully assembled pulveriser.

Components with Surfaces Greater Than 95° C:

Mill Side Housing Assembly (Externally Insulated) and Bowl & Bowl Hub Assembly

A) **Surface preparation**: Commercial Blast SSPC-SP 3/ SP 4 (Swedish Std SA3 / SA21/2).

B) **Primer**: Heat resistant Aluminium paint to IS-13183 Gr.-1 (2 coats of Total DFT 40 microns).

SECTION 4: EXTERIOR SURFACES OF THE MILL WITH SURFACE TEMPERATURES LESS THAN 95 °C

Exterior surfaces:

Those surfaces visible by someone outside the fully assembled pulverizer.

Components with Surfaces Less Than 95^0 C:

All mill components, except the Mill Side Housing Assembly and Bowl and Bowl Hub Assembly.

A) **Primer**: Red Oxide Zinc Phosphate primer (Alkyd base) to IS 12744 Minimum DFT 60 microns in two coats. Primer to be applied after surface preparation to **SP3/SP4** (SSI- SA3 / SA21/2).

B) **Finish Coat (Shop)**: Synthetic Enamel (long oil alkyd) to IS 2932. Minimum DFT 20 microns.

C) **Finish –Finish Coat (After Erection)**: Synthetic Enamel (long oil alkyd) to IS 2932. Minimum DFT 20 microns.

SECTION 5: GENERAL NOTES:

A. Grease and Oil Removal: Special care shall be taken to remove grease and oil by means of suitable solvents as per SSPC-SP-01.

B. SP3 Power tool cleaning.

C. SP4 Shot blasting (shot blasting shall be used as surface preparation method for hot worked pipes prior to application of primer).

D. Machined surfaces are not painted.

E. Bought-out items shall be as per manufacturer painting standards. This painting scheme shall be applicable for Mills components as mentioned.

F. Touch-up paintings, making good any damaged shop painting and completing any unfinished portion of the shop coat shall be carried out as per clause applicable painting scheme.

SECTION 6: PAINT SCHEDULE

Sl. No.	Surface Location	Surface Preparation	Primer			Intermediate		Finish Coat				Total DFT
			Paint	DFT/ Coat	No. of Coats	Paint	No. of Coats	Paint	DFT/ Coat	No. of Coats	Shade	µm min
01	Interior Surfaces of Mill All Surfaces 95°C or less.	SP3/SP4	Red Oxide Zinc Phosphate primer (Alkyd base) to IS 12744	**30 µm min**	**2**	NA	-	-		-	-	60 µm min.
	Interior Surfaces of Mill All Surfaces temperature above 95°C	SP3/SP4	Heat resistant Aluminium Paint to IS-13183 Gr.-1	**20 µm min**	**2**	NA	-	-		-	-	40 µm min
02	Exterior Surfaces of Mill below 95 °C or less (All surfaces except the Mill Side Assembly and Bowl and bowl Hub assembly)	SP3/SP4	Red Oxide Zinc Phosphate primer (Alkyd base) to IS 12744	**30 µm min**	**2**	NA	-	Synthetic Enamel (long oil alkyd) to IS 2932 (HY5610026997)	**20 µm min (SHOP)** **-------** **20 µm min**	**1** **---------** **1**	Grey white RAL 9002	**80 µm** ------- 100 µm

Sl. No.	Surface Location	Surface Preparation	Primer			Intermediate		Finish Coat				Total DFT
			Paint	DFT/ Coat	No. of Coats	Paint	No. of Coats	Paint	DFT/ Coat	No. of Coats	Shade	µm min
	Includes: Separator Body Assembly, Journal Opening Cover, Spring Assembly, Separator Top, Dynamic Classifier Assembly, Discharge Valve Components, Outlet Pipes, Seal Air Piping, Planetary Gearbox, Pulveriser Top Platform, Lube Oil System)								**(SITE)**			(after erection)

Sl. No.	Surface Location	Surface Preparation	Primer			Intermediate		Finish Coat				Total DFT
			Paint	DFT/ Coat	No. of Coats	Paint	No. of Coats	Paint	DFT/ Coat	No. of Coats	Shade	µm min
03	Exterior Surfaces of Mill above 95 °C (Mill Side Assembly & Bowl& Bowl Hub Assembly) Exterior Surface of the Mill Side Assembly is insulated	SP3/SP4	Heat resistant Aluminium Paint to IS-13183 Gr.-1	**20 µm min**	**1**	NA	-	Heat resistant Aluminium Paint to IS-13183 Gr.-1	**20 µm min**	**1**	Aluminium	**40 µm.**

Addendum to Annexure-10: EWS TG cycle piping

Addendum to Annexure 10 EWS TG cycle piping

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-307
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HP BYPASS WARM UP LINE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-307-A0548	PIPE	SA335P92	OD	9.09	TIG & ARC	9.09 V	ER90S-B92	E9015-B92			1058
		PIPE	SA335P92	33.4			10	47.9	30	10	0	
2	1-80-307-A0548	PIPE	SA335P92	OD	4.55	TIG & ARC	4.55 V	ER90S-B92	E9015-B92			1058
		PIPE	SA335P92	33.4			10	113	10	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-307-A0847 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-322
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	CRH PIPING TO DEAERATING HEATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-322-A0674	**PIPE**	**SA106GRC**	OD	15.09	TIG & ARC	15.09	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRC SA234WPC**	355.6			15	1117.8	495	210	360	
2	1-80-322-A0674	**PIPE**	**SA672GRB60**	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA672GRB70 SA234WPB**	965			14	2721.04	1316	434	0	
3	1-80-322-A0674	**PIPE**	**SA106GRB**	OD	37	TIG & ARC	37	ER70S-A1	E7018-1			1004
		PIPE/FITTING	**SA106GRB SA234WPB**	965			5	359.45	445	185	3315	
4	1-80-322-A0674	**PIPE**	**SA672GRB70**	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA672GRB70 SA234WPB**	323.9			2	322	54	28	12	
5	1-80-322-A0674	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	219.1			3	321	54	27	12	
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR (2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS. (3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

\# - REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
REV NO	DATE	ALTERED	APPROVED
02			
REV NO	DATE	ALTERED	APPROVED
03			
REV NO	DATE	ALTERED	APPROVED
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-322-A0761 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PHASE-II),SINGRAULI,MP.	**CUST. NO:**	1832 & 1833
		PGMA:	80-323
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF EXTRACTION STEAM FROM CRH TO BFPDT "A" & "B"

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S NO.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-323-A0649	PIPE	SA106GRC	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	323.9			8	1176	224	32	0	
2	1-80-323-A0649	PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	323.9			2	322	54	28	12	
3	1-80-323-A0649	PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	219.1			23	2461	414	207	92	
4	1-80-323-A0649	PIPE	SA106GRC	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	114.3			2	90	8	0	0	

NOTES:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR (2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS. (3)

REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

\# - REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	08-08-2025	4-80-323-A0844 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PHASE-II),SINGRAULI,MP.	**CUST. NO:**	1832 & 1833
		PGMA:	80-324
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF MS & CRH STEAM PIPING TO APRDS & AUX. STEAM HEADER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-324-A0718	PIPE	SA106GRC	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	114.3			30	1350	120	0	0	
2	1-80-324-A0718	PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	114.3			2	90	12	12	0	
3	1-80-324-A0718	PIPE	SA106GRC	OD	5.54	TIG & ARC	5.54 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	60.3			1	22	1	0	0	
4	1-80-324-A0718	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		FITTING/PIPE	SA234WPB SA106GRB	219.1			25	2230	275	0	0	

NOTES:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR (2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS. (3)

REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

\# - REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	07-08-2025	4-80-324-A0849 01OF01 REV/00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PHASE-II),SINGRAULI,MP.	**CUST. NO:**	1832 & 1833
		PGMA:	80-329
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF EXTN STEAM PIPING TO TDBFP-'A' & 'B'

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-323-A0650	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	508			18	4145	792	234	0	
2	1-80-323-A0650	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		FITTING/PIPE	SA234WPB SA106GRB	406.4			35	6510	1225	245	0	
3	1-80-323-A0650	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		FITTING/PIPE	SA234WPB SA106GRB	273			32	3570	448	0	0	
4	1-80-323-A0650	PIPE	SA106GRC	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	323.9			6	882	168	24	0	
5	1-80-323-A0650	PIPE	SA106GRC	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	219.1			6	535	66	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	05-08-2025	4-80-329-A0852 01OF01 REV/00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PHASE-II),SINGRAULI,MP.	**CUST. NO:**	1832 & 1833
		PGMA:	80-334
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO LP HEATER 5

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S No.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-334-A0577	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	508			3	230.19	2.5	3.15	4	
2	1-80-334-A0577	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	508			22	5064.18	55	67.1	88	
3	1-80-334-A0577	FITTING	SA234WPB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	508			5	1150.95	12.5	15.25	20	
4	1-80-334-A0577 1-80-334-A0578	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	219.1			6	534.78	15	18.9	24	
5	1-80-334-A0578	PIPE	SA672GRB70	OD	10	TIG & ARC	10 V	ER70S-A1	E7018-1			1003
		PIPE	SA672GRB70	559			4	1025.68	192	80	0	
6	1-80-334-A0578	PIPE	SA672GRB70	OD	10	TIG & ARC	10 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	559			15	3846.3	720	300	0	
7	1-80-334-A0578	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	660			1	326.03	56	28	21	
8	1-80-334-A0578	FITTING	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	610			2	549.64	106	32	0	

NOTES:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

- REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	21-06-2025	4-80-334-A0792 01OF02 R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PHASE-II),SINGRAULI,MP.	**CUST. NO:**	1832 & 1833
		PGMA:	80-334
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO LP HEATER 5

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-334-A0579	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
	1-80-334-A0580	PIPE	SA106GRB	508			15	3452.85	37.5	45.75	60	
2	1-80-334-A0579	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
	1-80-334-A0580	FITTING	SA234WPB	508			27	6215.13	67.5	82.35	108	
3	1-80-334-A0579	FITTING	SA234WPB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	508			1	230.19	2.5	3.05	4	
4	1-80-334-A0580	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	219.1			4	356.52	10	12.6	16	
5	1-80-334-A0579	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	219.1			4	356.52	10	12.6	16	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	21-06-2025	4-80-334-A0792 02OF02 R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-335
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO DEAERATING HEATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-335-A0675	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457			5	1037.5	265	80	0	
2	1-80-335-A0675	PIPE	SA672GRB70	OD	10	TIG & ARC	10 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA672GRB70 SA234WPB	610			14	3920	728	196	0	
3	1-80-335-A0676	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457			29	6017.5	1537	464	0	
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	17.06.2025	4-80-335-A0701 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1,832
		PGMA:	80-336
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO HP HEATER NO.1

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-336-A0570	PIPE	SA335P22	OD	9.53	TIG & ARC	9.53	ER90S-B3	E9018-B3			1014
	1-80-336-A0571	PIPE/FITTING	SA335P22 SA234WP22	406.4			30	5580	1050	210	0	
2	1-80-336-A0570	PIPE	SA335P22	OD	9.53	TIG & ARC	9.53	ER90S-B3	E9018-B3			1014
		PIPE/FITTING	SA335P22 SA234WP22	335.6			2	325	60	18	0	
3	1-80-336-A0570	PIPE	SA335P22	OD	6.35	TIG & ARC	6.35	ER90S-B3	E9018-B3			1013
		PIPE/FITTING	SA335P22 SA234WP22	219.1			4	358	44	0	0	
4	1-80-336-A0570	PIPE	SA335P22	OD	9.53	TIG & ARC	9.53	ER80S-B2	E8018-B2			1012
		FITTING	SA234WP11	406.4			2	372	70	14	0	
5	1-80-336-A0571	PIPE	SA335P22	OD	9.27	TIG & ARC	9.27	ER90S-B3	E9018-B3			1014
		PIPE/FITTING	SA335P22 SA234WP22	273			23	2824	529	138	0	
6	1-80-336-A0571	FITTING	SA234WP11	OD	9.27	TIG & ARC	9.27	ER80S-B2	E8018-B2			1012
		FITTING	SA234WP22	273			2	246	46	12	0	
7	1-80-336-A0571	PIPE	SA335P11	OD	9.53	TIG & ARC	9.53	ER80S-B2	E8018-B2			1009
		PIPE/FITTING	SA234WP11	355.6			1	246	30	4	0	
8	1-80-336-A0572	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-336-A0573	PIPE/FITTING	SA106GRB SA234WPB	273			77	8582	1078	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18.06.2025	4-80-336-A0634 01OF02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-336
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO HP HEATER NO.1

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
9	1-80-336-A0572	**PIPE**	**SA106GRB**	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1017
	1-80-336-A0573	**FITTING**	**SA234WP11**	273			2	220	8	12	0	
10	1-80-336-A0572	**FITTING**	**SA234WP11**	OD	9.53	TIG & ARC	9.53	ER80S-B2	E8018-B2			1009
	1-80-336-A0573	**FITTING**	**SA234WP11**	323.9			2	246	56	8	0	
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18.06.2025	4-80-336-A0634 02OF02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-337
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO HP HEATER-2

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1		PIPE	SA106GRC	OD	15.09	TIG & ARC	15.09 V	ER70S-A1	E7018-1			1003
	1-80-337-A0581											
		PIPE	SA106GRC	355.6			4	506.64	120	196	0	
		FITTING	SA234WPC									
2		PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
	1-80-337-A0581											
	1-80-337-A0582	PIPE	SA106GRC	273			53	1871.96	1219	583	424	
		FITTING	SA234WPC									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18-06-2025	4-80-337-A0771 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-338
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	EXTRACTION STEAM TO HP HEATER-3

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1		PIPE	SA335P22	OD	18.26	TIG & ARC	18.26 V	ER90S-B3	E9018-B3			1014
	1-80-338-A0611											
	1-80-338-A0612	PIPE	SA335P22	273			29	2597.24	609	1073	812	
		FITTING	SA234WP22									
2		PIPE	SA335P22	OD	16	TIG & ARC	16 V	ER90S-B3	E9018-B3			1014
	1-80-338-A0611											
	1-80-338-A0612	PIPE	SA335P22	219.1			47	3505.26	846	1598	0	
		FITTING	SA234WP22									
3		PIPE	SA335P22	OD	8.6	TIG & ARC	8.60 V	ER90S-B3	E9018-B3			1014
	1-80-338-A0611											
		FITTING	SA234WP22	114.3			4	191	44	0	0	
	1-80-338-A0611	FITTING	SA234WP22	OD	14.27	TIG & ARC	14.27 V	ER90S-B3	E9018-B3			1014
		FITTING	SA234WP22	168.3			2	120	28	34	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-338-A0772 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-339
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM TO BFD TURBINE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S No.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-339-A0864	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	273			6	660	54	0	0	
2	1-80-339-A0864	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	219.1			24	2160	240	0	0	
3	1-80-339-A0864	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	114.3			2	90	8	0	0	
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	21-06-2025	4-80-339-A0794 01OF01 R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-340
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM HEADER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-340-A0719	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
	1-80-340-A0722	PIPE	SA106GRB	508			22	5064.18	968	286	0	
		FITTING	SA234WPB									
2	1-80-340-A0719	PIPE	SA106GRC	OD	9.27	TIG & ARC	9.27 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	273			20	2453	460	120	0	
		FITTING	SA234WPC									
3	1-80-340-A0722	PIPE	SA335P22	OD	9.53	TIG & ARC	9.53 V	ER80S-B2	E8018-B2			1012
		PIPE	SA335P12	508			3	690.57	132	39	0	
4	1-80-340-A0719	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
	1-80-340-A0722	PIPE	SA106GRB	219.1			6	534.78	66	0	0	
		FITTING	SA234WPB									
5	1-80-340-A0722	PIPE	SA106GRC	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	219.1			4	356.52	44	0	0	
		FITTING	SA234WPB									
6	1-80-340-A0719	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	355.6			1	161.67	30	9	0	
		FITTING	SA234WPB									
7	1-80-340-A0719	PIPE	SA106GRC	OD	7.11	TIG & ARC	7.11 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	168.3			1	70	9	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-340-A0767 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-340
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM HEADER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1		PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
	1-80-340-A0719											
	1-80-340-A0722	PIPE	SA106GRB	508			22	5064.18	968	286	0	
		FITTING	SA234WPB									
2		PIPE	SA106GRC	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1003
	1-80-340-A0719											
		PIPE	SA106GRC	273			20	2453	460	120	0	
		FITTING	SA234WPC									
3		PIPE	SA335P22	OD	9.53	TIG & ARC	9.53	ER80S-B2	E8018-B2			1003
	1-80-340-A0722											
		PIPE	SA335P12	508			3	690.57	132	39	0	
4		PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-340-A0719											
	1-80-340-A0722	PIPE	SA106GRB	219.1			6	534.78	66	0	0	
		FITTING	SA234WPB									
5		PIPE	SA106GRC	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-340-A0722											
		PIPE	SA106GRC	219.1			4	356.52	44	0	0	
		FITTING	SA234WPB									
6		PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
	1-80-340-A0719											
		PIPE	SA106GRB	355.6			1	161.67	30	9	0	
		FITTING	SA234WPB									
7		PIPE	SA106GRC	OD	7.11	TIG & ARC	7.11	ER70S-A1	E7018-1			1003
	1-80-340-A0719											
		PIPE	SA106GRC	168.3			1	70	9	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-340-A0767 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	1X120 MW REHEAT STG UNIT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-345
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM TO DEAERATING HEATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld		Electrode filler spec.				W.P.S no.
				ID/OD	Thick				TIG	Arc spec			
		Part-1	Part-1	Size					Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty		Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-345-A0731	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	V	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	SA106GRB SA234WPB	406.4			8		1488	280	56	0	
2	1-80-345-A0731	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11	V	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	SA106GRB SA234WPB	168.3			11		770	99	0	0	
3	1-80-345-A0731	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	V	ER70S-A1	E7018-1			1003
	1-80-345-A0636	PIPE/FITTINGS	SA106GRB SA234WPB	219.1			38		3113.34	570	0	0	
4	1-80-345-A0731	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	V	ER70S-A1	E7018-1			1003
	1-80-345-A0636	PIPE/FITTINGS	SA106GRB SA234WPB	508			18		3352.32	828	342	0	
5	1-80-345-A0731	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	V	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	SA106GRB SA234WPB	114.3			2		90	8	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
\# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C.MANIKANDAN	07-08-2025	4-80-345-A0858 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-349
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM TO GLAND SEALS - TG SCOPE

Sl.No.	**Drg. No. for weld location**	**Description of parts to be welded**	**Matl. Spec.**	**Dimensions**		**Process of Welding**	**Type of weld**	**Electrode filler spec.**				**W.P.S no.**
				ID/OD	**Thick**			**TIG**	**Arc spec**			
		Part-1	**Part-1**	**Size**				**Qty (gms)**	**Qty(nos)**			
		Part-2	**Part-2**	**mm**	**mm**		**Qty**	**Dia2.4**	**Dia2.5**	**Dia3.2**	**Dia4.0**	
1	1-80-349-A0635	**PIPE**	**SA106GRB**	OD	5.49	TIG & ARC	5.49 V	ER70S-A1	E7018-1			1003
		PIPE / **FITTING**	**SA106GRB** / **SA234WPB**	88.9			28	952	56	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	**DESIGN/CHD.**	**DESIGN/APPD.**	**WTC-CHD./APPRD.**	**DATE**	**DRAWING NO:**
DHARMENDRA	IDB RAJU	P SURESH	C.MANIKANDAN	18-06-2025	4-80-349-A0859 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-363
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	EXHAUST STEAM FROM PRIME MOVERS-TG SCOPE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-363-A0539	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	323.9			41	6027	1148	164	0	
		FITTING	SA234WPB									
2	1-80-363-A0726	PIPE	SA106GRC	OD	7.11	TIG & ARC	7.11 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	168.3			11	770	99	0	0	
		FITTING	SA234WPC									
3	1-80-363-A0726	PIPE	SA106GRC	OD	5.54	TIG & ARC	5.54 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	60.3			30	660	30	0	0	
		FITTING	SA234WPC									
4	1-80-363-A0726	FITTING	SA234WPC	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	114.3			4	178.84	20	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-363-A0776 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-371
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	DRAIN & VENT PIPING-NON IBR

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-371-A0620	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	406.4			10	1847.6	350	110	0	
		FITTING	SA234WPB									
2	1-80-371-A0621	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	219.1			10	891.3	110	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-371-A0777 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-373
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AUX STEAM HEADER SV EXHAUST

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-373-A0615	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	335.6			16	2440.32	464	144	0	
		FITTING	SA234WPB									
2	1-80-373-A0615	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	273			13	1487.72	182	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
REV NO	DATE	ALTERED	APPROVED
02			
REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKandan	18-06-2025	4-80-373-A0778 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-375
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HP/LPH SV DISCHARGES TO HP/LP FLASH PIPES

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-375-A0698	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11 V	ER70S-A1	E7018-1			1003
		PIPE FITTING	SA106GRB SA234WPB	168.3			64	4480	576	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C.MANIKANDAN	18-06-2025	4-80-375-A0861 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-379
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HPH SV EXHAUST TO FLASH TANK

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1		PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
	1-80-379-A0700											
	1-80-379-A0854	PIPE	SA106GRB	219.1			32	2852.16	352	0	0	
		FITTING	SA234WPB									
2		PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
	1-80-373-A0700											
	1-80-373-A0854	PIPE	SA106GRB	114.3			55	2424.95	220	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-379-A0779 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-381
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HP/LP FLASH TANK VENT & DRAIN

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-381-A0715	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	323.9			26	3831.88	728	234	0	
		FITTING	SA234WPB									
2	1-80-381-A0733	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	508			15	3452.85	660	195	0	
		FITTING	SA234WPB									
3	1-80-381-A0733	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	273			18	2005.92	252	0	0	
		FITTING	SA234WPB									
4	1-80-381-A0733	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	114.3			6	269.04	30	0	0	
		FITTING	SA234WPB									
5	1-80-381-A0715	PIPE	SA106GRB	OD	7.11		7.11	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	168.3			3	208.62	33	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-381-A0783 01 OF 01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-382
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	EXTRACTION FROM LPH-1 TO 5 CONDENSER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-382-A0727	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
	1-80-382-A0728											
		PIPE	SA106GRB	114.3			48	2152.32	240	0	0	
		FITTING	SA234WPB									
2	1-80-382-A0728	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	168.3			16	1112.64	176	0	0	
		FITTING	SA234WPB									
3	1-80-382-A0847	PIPE	SA106GRB	OD	5.49	TIG & ARC	5.49	ER70S-A1	E7018-1			1003
	1-80-382-A0848											
		PIPE	SA106GRB	89.9			61	2106.94	244	0	0	
		FITTING	SA234WPB									
4	1-80-382-A0847	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
	1-80-382-A0848											
		PIPE	SA106GRB	114.3			2	89.68	10	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-382-A0784 01 OF 01 R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-385
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	VENT FROM UNLISTED PPG/EQPT TO COND

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-385-A0613	PIPE	SA106GRB	OD	5.54	TIG & ARC	5.54	ER70S-A1	E7018-1			1003
	1-80-385-A0411											
		PIPE	SA106GRB	60.3			42	814	84	0	0	
		FITTING	SA234WPB									
2	1-80-385-A0613	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	114.3			18	879.12	90	0	0	
		FITTING	SA234WPB									
3	1-80-358-A0614	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	335.6			20	3182.4	620	120	0	
		FITTING	SA234WPB									
4	1-80-385-A0622	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	R70S-A1	E7018-1			1003
		PIPE	SA106GRB	273			8	891.52	224	72	0	
		FITTING	SA234WPB									
5	1-80-385-A0622	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	323.9			26	3828.24	728	208	0	
		FITTING	SA234WPB									
6	1-80-385-A0625	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	168.3			22	1494.68	176	0	0	
		FITTING	SA234WPB									
7	1-80-385-A0625	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
	1-80-385-A0411											
		PIPE	SA106GRB	114.3			54	2640	270	0	0	
		FITTING	SA234WPB									
8	1-80-385-A0613	FITTING	SA234WPB	OD	5.49		5.49	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	88.9			8	270.8	24	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-385-A0785 01 OF 02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-385
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	VENT FROM UNLISTED PPG/EQPT TO COND

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-385-A0614	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	168.3			2	135.88	16	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
03			
REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-385-A0785 02 OF 02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-388
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	AIR EVACUATION PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-388-A0626	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
	1-80-388-A0627											
		PIPE	SA106GRB	323.9			28	4130	784	252	0	
		FITTING	SA234WPB									
2	1-80-388-A0626	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-388-A0627											
		PIPE	SA106GRB	273			50	5500	530	0	0	
		FITTING	SA234WPB									
3	1-80-388-A0626	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-388-A0627											
		PIPE	SA106GRB	219.1			110	9900	1210	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	20.06.2025	4-80-388-A0790 01 OF 01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832 & 1833
		PGMA:	80-400
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	CONDENSATE SUCTION PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-400-A0584	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	508			20	4603.8	880	260	0	
		FITTING	SA234WPB									
2	1-80-400-A0584 1-80-400-A0585	PIPE	SA672GRB60	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE	SA672GRB60	660			20	6015	1140	460	0	
		FITTING	SA234WPB									
3	1-80-400-A0585	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	323.9			18	2646	504	72	0	
		FITTING	SA234WPB									
4	1-80-400-A0584	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	508			6	1520	258	126	96	
		FITTING	SA234WPB									
5	1-80-400-A0584	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	457			3	625	117	36	0	
		FITTING	SA234WPB									
6	1-80-400-A0584	FITTING	SA234WPB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		FITTING	SA234WPB	610			3	825	159	48	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	20-06-2025	4-80-400-A0791 01 OF 01 R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-401
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	CD FROM PUMP TO LPH1/DC INLET TEE&RECIR

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-401-A0670	PIPE	SA106GRB	OD	9.27	TIG & ARC	9.27 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	273			45	5519.25	1035	270	0	
2	1-80-401-A0678	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	114.3			4	180	16	0	0	
3	1-80-401-A0678	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	406.4			2	406.32	68	34	24	
4	1-80-401-A0678	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457.2			47	10735.74	1833	893	658	
5	1-80-401-A0690	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457.2			17	3883.14	663	323	238	
6	1-80-401-A0690	PIPE	SA106GRC	OD	23.83	TIG & ARC	23.83 V	ER70S-A1	E7018-1			1004
		PIPE/FITTING	SA106GRC SA234WPC	457.2			3	247.74	123	51	348	
7	1-80-401-A0690	PIPE	SA106GRC	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRC SA234WPC	273			27	3008.88	378	0	0	
8	1-80-401-A0691	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	508			3	322.32	147	60	45	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
\# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18.06.2025	4-80-401-A0866 01OF02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-401
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	ISOMETRIC OF GSC MINIMUM FLOW RECIRCULATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-401-A0691	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457.2			20	4568.4	780	380	280	
2	1-80-401-A0691	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	406.4			10	2031.6	340	170	120	
3	1-80-401-A0691	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	219.1			16	1712	288	144	64	
4	1-80-401-A0692	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	508			4	429.76	196	80	60	
5	1-80-401-A0692	PIPE	SA106GRB	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	457.2			25	5710.5	975	475	350	
							V					
							V					
							V					

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18.06.2025	4-80-401-A0866 02OF02 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-402
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	CD FROM LPH1/DC INLET TEE TO TG TP

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-402-A0681	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			15	3430	585	285	210	
2	1-80-402-A0702	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			35	7995	1365	665	490	
3	1-80-402-A0702	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	406.4			23	4675	782	391	276	
4	1-80-402-A0703	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			19	3440	741	361	266	
5	1-80-402-A0703	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	406.4			8	1630	272	136	96	
6	1-80-402-A0704	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			25	5710	975	475	350	
7	1-80-402-A0704	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	406.4			29	5892	986	493	348	
8	1-80-402-A0704	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	508			3	323	147	60	45	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	18.06.2025	4-80-402-A0699 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-403
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	CD FROM TG TP TO DEAERATING HEATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-403-A0682	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			46	10507.32	1794	874	644	
2	1-80-403-A0682	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	406.4			6	1218.96	204	102	72	
3	1-80-403-A0683	**PIPE**	**SA106GRB**	OD	12.7	TIG & ARC	12.7 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			18	4111.56	702	342	252	
4	1-80-403-A0683	**PIPE**	**SA106GRB**	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	323.9			14	2058	392	56	0	
							V					
							V					
							V					
							V					

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-401-A0687 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-408
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	CONDENSATE DUMP FROM HEADER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-408-A0688	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	273			10	1114.4	140	0	0	
		FITTING	SA234WPB									
2	1-80-408-A0688	PIPE	SA106GRC	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRC	273			28	3120.32	392	0	0	
		FITTING	SA234WPC									
3	1-80-408-A0688	FITTING	SA234WPC	OD	10.97	TIG & ARC	10.97 V	ER70S-A1	E7018-1			1003
		FITTING	SA234WPC	168.3			2	156	28	14	2	
							V					

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C.MANIKANDAN	18-06-2025	4-80-408-A0868 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	83-412
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	CONDENSATE TRANSFER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-412-A0533 2-80-412-A0362	PIPE	SA312TP316L	OD	3.05	GTAW+ SMAW	3.05	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	114.3			89	3560	2047	445	0	
2	1-80-412-A0533	PIPE	SA312TP316L	OD	3.05	GTAW+ SMAW	3.05	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	88.9			22	660	22	0	0	
3	dummy	PIPE	SA312TP316L	OD	3.38	GTAW+ SMAW	3.38	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	33.4			153	1836	153	0	0	
4	dummy	PIPE	SA312TP316L	OD	3.91	GTAW+ SMAW	3.91	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	60.3			85	1870	85	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-06-2025	4-80-412-A0737 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-419
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	DEAERATOR SAFETY VALVE EXHAUST TO ATM

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-419-A0732	**PIPE**	**SA106GRB**	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	273			10	1114.4	140	0	0	
2	1-80-419-A0732	**PIPE**	**SA106GRB**	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	355.6			14	2254	420	56	0	
2	1-80-419-A0732	**PIPE**	**SA106GRB**	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE/FITTING	**SA106GRB SA234WPB**	457.2			14	2859.78	546	112	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	19.06.2025	4-80-419-A0747 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-446
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	DEAERATER OVERFLOW AND DRAIN

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-446-A0669	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	219.1			58	5228	640	0	0	
		FITTING	SA234WPB									
2	1-80-446-A0669	PIPE	SA106GRB	OD	7.11	TIG & ARC	7.11 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	168.3			22	1540	220	0	0	
		FITTING	SA234WPB									
3	1-80-446-A0669	PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	323.9			6	900	168	48	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
REV NO	DATE	ALTERED	APPROVED
02			
REV NO	DATE	ALTERED	APPROVED
03			
REV NO	DATE	ALTERED	APPROVED
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	4-80-446-A0836 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-447
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HEATERS DRAIN PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size			Qty (gms)		Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-447-A0602	PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
	1-80-447-A0603											
	1-80-447-A0604	PIPE	SA106GRC	273			92	12420	2116	1012	736	
	1-80-447-A0605	FITTING	SA234WPC									
2		PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
	1-80-447-A0603											
	1-80-447-A0605	PIPE	SA106GRC	323			10	1610	270	140	100	
		FITTING	SA234WPC									
3	1-80-447-A0606	PIPE	SA106GRC	OD	10.97	TIG & ARC	10.97	ER70S-A1	E7018-1			1003
	1-80-447-A0705											
	1-80-447-A0869	PIPE	SA106GRC	168.3			115	8970	1610	805	115	
	1-80-447-A0870	FITTING	SA234WPC									
	1-80-447-A0871											
4		PIPE	SA335P11	OD	10.97	TIG & ARC	10.97	ER80S-B2	E8018-B2			1009
	1-80-447-A0606											
	1-80-447-A0606	PIPE	SA335P11	168.3			3	234	42	21	3	
		FITTING	SA234WP11									
5	1-80-447-A0606	PIPE	SA106GRC	OD	12.7	TIG & ARC	12.7	ER70S-A1	E7018-1			1003
	1-80-447-A0870											
	1-80-447-A0606	PIPE	SA106GRC	219.1			9	963	162	81	36	
	1-80-447-A0870	FITTING	SA234WPC									
6	1-80-447-A0607	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-447-A0608											
	1-80-447-A0855	PIPE	SA106GRB	273			162	17982	2268	0	0	
	1-80-447-A0856	FITTING	SA234WPB									
7		PIPE	SA106GRB	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
	1-80-447-A0607											
	1-80-447-A0856	PIPE	SA106GRB	323.9			8	1176	224	32	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C.MANIKANDAN	8-08-2025	4-80-447-A0856 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832&1833
		PGMA:	80-448
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	DRAIN FROM UNLISTED EQPT/VESSEL-TG SCOPE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-448-A0619	PIPE	SA106GRB	OD	6.02	TIG & ARC	6.02	ER70S-A1	E7018-1			1003
		PIPE	SA106GRB	114.3			39	1755	156	0	0	
		FITTING	SA234WPB									

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	C MANIKANDAN	18-06-2025	1-80-448-A0837 01 OF 01 /R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MEL 2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT (MAHAN PHASE-II), SINGRAULI, MP	CUST. NO:	1832
		PGMA:	80-463
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	CUST. DOC. NO.	
		SYSTEM DESCRIPTION:	TG AUX COOLING WATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			Root Arc spec	Arc spec			
		Part-1	Part-1	Size				Qty (nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.15	Dia4.0	
1	80--463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1273
		PIPE	IS3589	219.1			29	290	261	0	0	
2	80--463	PIPE	IS3589	OD	6.4	SMAW (Arc)	6.4	E6013	E7018			1273
		PIPE	IS3589	273.1			52	650	676	0	0	
3	80--463	PIPE	IS3589	OD	6.35	SMAW (Arc)	6.35	E6013	E7018			1273
		PIPE	IS3589	323.9			27	405	432	0	0	
4	80--463	PIPE	IS3589	OD	6.4	SMAW (Arc)	6.4	E6013	E7018			1273
		PIPE	IS3589	355.6			15	240	270	0	0	
5	80--463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1273
		PIPE	IS3589	406.4			4	72	68	0	0	
6	80--463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1273
		PIPE	IS3589	457.1			33	660	625	0	0	
7	80--463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1273
		PIPE	IS3589	508			25	550	500	0	0	
8	80--463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1273
		PIPE	IS3589	610			77	2079	1925	0	0	

Notes:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR"

Rev.no.	Date:				Rev.no.	Date:	Altered:	
01							Approved:	

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:	SHEET NO:			REV. NO.
DHARMENDRA KUMAR	IDB RAJU	P SURESH	MANIKANDAN C	23-07-2025	4-80-463-A0819	01	OF	05	00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MEL 2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT (MAHAN PHASE-II), SINGRAULI, MP	CUST. NO:	1832
		PGMA:	80-463
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	CUST. DOC. NO.	
		SYSTEM DESCRIPTION:	TG AUX COOLING WATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			ROOT Arc spec	Further pass Arc spec			
		Part-1	Part-1	Size				Qty (nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.15	Dia4.0	
9	80-463	PIPE	IS3589	OD	8	SMAW (Arc)	8	E6013	E7018			1273
		PIPE	IS3589	711.2			65	2200	3900	0	0	
10	80-463	PIPE	IS3589	OD	8	SMAW (Arc)	8	E6013	E7018			1273
		PIPE	IS3589	813			41	1558	2829	0	0	
11	80-463	PIPE	IS3589	OD	8	SMAW (Arc)	8	E6013	E7018			1274
		FITTING	IS2062	813			12	456	828	0	0	
12	80-463	PIPE	IS3589	OD	8	SMAW (Arc)	8	E6013	E7018			1274
		PIPE	IS2062	711.2			24	816	1440	0	0	
13	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		PIPE	IS2062	610			33	891	825	0	0	
14	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		PIPE	IS2062	508			73	1679	1460	0	0	
15	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		PIPE	IS2062	457.1			23	460	437	0	0	
16	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		PIPE	IS2062	406.4			3	54	51	0	0	

Notes:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR"

Rev.no.	Date:				Rev.no.	Date:	Altered:	
01							Approved:	

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:	SHEET NO:			REV. NO.
DHARMENDRA KUMAR	IDB RAJU	P SURESH	MANIKANDAN C	23-07-2025	4-80-463-A0819	02	OF	05	00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MEL 2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT (MAHAN PHASE-II), SINGRAULI, MP	CUST. NO:	1832
		PGMA:	80-463
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	CUST. DOC. NO.	
		SYSTEM DESCRIPTION:	TG AUX COOLING WATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			ROOT Arc spec	Further pass Arc spec			
		Part-1	Part-1	Size				Qty (nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.15	Dia4.0	
17	80-463	PIPE	IS3589	OD	6.4	SMAW (Arc)	6.4	E6013	E7018			1274
		FITTING	IS2062	355.6			9	144	162	0	0	
18	80-463	PIPE	IS3589	OD	6.35	SMAW (Arc)	6.35	E6013	E7018			1274
		FITTING	IS2062	323.9			8	120	144	0	0	
19	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		FITTING	SA234WPB	219.1			156	1560	1404	0	0	
20	80-463	PIPE	IS3589	OD	6.4	SMAW (Arc)	6.4	E6013	E7018			1274
		FITTING	SA234WPB	273.1			155	2015	2015	0	0	
21	80-463	PIPE	IS3589	OD	6.35	SMAW (Arc)	6.35	E6013	E7018			1274
		FITTING	SA234WPB	323.9			95	1330	1520	0	0	
22	80-463	PIPE	IS3589	OD	6.4	SMAW (Arc)	6.4	E6013	E7018			1274
		FITTING	SA234WPB	355.6			42	672	756	0	0	
23	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		FITTING	SA234WPB	406.4			14	252	238	0	0	
24	80-463	PIPE	IS3589	OD	6	TIG & ARC	6	E6013	E7018			1274
		FITTING	SA234WPB	457.1			50	1000	950	0	0	

Notes:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR"

Rev.no.	Date:				Rev.no.	Date:	Altered:	
01							Approved:	

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:	SHEET NO:			REV. NO.
DHARMENDRA KUMAR	IDB RAJU	P SURESH	MANIKANDAN C	23-07-2025	4-80-463-A0819	03	OF	05	00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MEL 2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT (MAHAN PHASE-II), SINGRAULI, MP	CUST. NO:	1832
		PGMA:	80-463
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	CUST. DOC. NO.	
		SYSTEM DESCRIPTION:	TG AUX COOLING WATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			ROOT Arc spec	Further pass Arc spec			
		Part-1	Part-1	Size				Qty (nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.15	Dia4.0	
25	80-463	PIPE	IS3589	OD	6	SMAW (Arc)	6	E6013	E7018			1274
		FITTING	SA234WPB	508			40	880	800	0	0	
26	80-463	PIPE	IS1239	OD	4	SMAW (Arc)	4	E6013	E7018			1271
		PIPE/FITTING	IS1239	33.4			200	NA	147	0	0	
27	80-463	PIPE	IS1239	OD	4	SMAW (Arc)	4	E6013	E7018			1271
		PIPE/FITTING	IS1239	48.3			46	NA	49	0	0	
28	80-463	PIPE	IS1239	OD	4.5	SMAW (Arc)	4.5	E6013	E7018			1271
		PIPE/FITTING	IS1239	60.3			254	NA	480	0	0	
29	80-463	PIPE	IS1239	OD	5.49	SMAW (Arc)	5.49	E6013	E7018			1271
		PIPE/FITTING	IS1239	88.9			374	NA	1365	0	0	
30	80-463	PIPE	IS1239	OD	5.4	SMAW (Arc)	5.4	E6013	E7018			1271
		PIPE/FITTING	IS1239	114.3			56	NA	240	0	0	
31	80-463	PIPE	IS1239	OD	5.4	SMAW (Arc)	5.4	E6013	E7018			1271
		PIPE/FITTING	IS1239	168.3			275	NA	1885	0	0	
32	80-463	PIPE	IS1239	OD	5.4	SMAW (Arc)	5.4	E6013	E7018			1272
		FITTING	SA234WPB	168.3			62	NA	400	0	0	

Notes:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR"

Rev.no.	Date:				Rev.no.	Date:	Altered:	
01							Approved:	

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:	SHEET NO:			REV. NO.
DHARMENDRA KUMAR	IDB RAJU	P SURESH	MANIKANDAN C	23-07-2205	4-80-463-A0819	04	OF	05	00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MEL 2X800 ULTRA SUPER CRITICAL THERMAL POWER PROJECT (MAHAN PHASE-II), SINGRAULI, MP	CUST. NO:	1832
		PGMA:	80-463
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	CUST. DOC. NO.	
		SYSTEM DESCRIPTION:	TG AUX COOLING WATER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			ROOT Arc spec	Further pass Arc spec			
		Part-1	Part-1	Size				Qty (nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.15	Dia4.0	
33	80-463	PIPE	IS1239	OD	5.4	SMAW (Arc)	5.4	E6013	E7018			1272
		FITTING	SA234WPB	114.3			24	120	96	0	0	
34	80-463	PIPE	IS1239	OD	5.49	SMAW (Arc)	5.49	E6013	E7018			1272
		FITTING	SA234WPB	88.9			22	88	66	0	0	
35	80-463	PIPE	IS1239	OD	4	SMAW (Arc)	4	E6013	E7018			1272
		FITTING	SA234WPB	48.3			18	36	18	0	0	
36	80-463	PIPE	IS1239	OD	3.73	SMAW (Arc)	3.73	E6013	E7018			1271
		PIPE/FITTING	IS1239	21.3			30	0	14	0	0	
37	80-463	PIPE	SA312TP304H	OD	3.05	TIG+ SMAW	3.05	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	114.3			26	1014 GM	26	0	0	
38	80-463	PIPE	SA312TP304H	OD	3.38	TIG+ SMAW	3.38	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	33.4			22	286 GM	22	0	0	
39	80-463	PIPE	SA312TP316L	OD	3.38	TIG+ SMAW	3.38	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L/F316	33.4			158	2054 GM	158	0	0	
40	80-463	PIPE	SA312TP316L	OD	3.91	TIG+ SMAW	3.91	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	60.3			70	1540	70	0	0	

Notes:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR"

Rev.no.	Date:				Rev.no.	Date:	Altered:	
01							Approved:	

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:	SHEET NO:			REV. NO.
DHARMENDRA KUMAR	IDB RAJU	P SURESH	MANIKANDAN C	23-07-2025	4-80-463-A0819	05	OF	05	00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1,832
		PGMA:	83-468
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	MAIN CIRCULATION WATER PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	DUMMY	**PIPE**	**IS2062**	OD	20	SMAW	20 V	--	E7018			1201
		PIPE	**IS2062**	2540			48		17850	4944	19392	
2	DUMMY	**PIPE**	**IS2062**	OD	8	SMAW	8 V	E6013	E7018			1001
		PIPE	**IS2062**	406.4			5	50	220	0	0	
3	DUMMY	**PIPE**	**IS2062**	OD	5.4	SMAW	5.4 V	E6013	E7018			1001
		PIPE	**IS2062**	150			5	20	35	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-06-2025	4-80-468-A0739 01 OF 01 / R00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832&1833
		PGMA:	83-473
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	DEMINERALISED WATER SYSTEM

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	DUMMY	PIPE	SA312TP316L	OD	3.05	GTAW + SMAW	3.05 V	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	114			98	3528	98	0	0	
2	DUMMY	PIPE	SA312TP316L	OD	3.4	GTAW + SMAW	3.4 V	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	168.3			291	18915	291	0	0	
3	DUMMY	PIPE	SA312TP304H	OD	3.91	GTAW + SMAW	3.91 V	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	60.3			40	880	40	0	0	
4	DUMMY	PIPE	SA312TP304H	OD	3.38	GTAW + SMAW	3.38 V	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	33.4			125	1625	125	0	0	
5	DUMMY	PIPE	SA312TP304H	OD	3.38	GTAW + SMAW	3.38 ◺	ER308	E308			1079
		PIPE/FITTING	SA182F304H	33.4			15	-	11	0	0	
6	DUMMY	PIPE	SA312TP316L	OD	3.38	GTAW + SMAW	3.38 V	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	33.4			77	1001	77	0	0	
7	DUMMY	PIPE	SA312TP316L	OD	3.38	GTAW + SMAW	3.38 ◺	ER316L	E316			1071
		PIPE/FITTING	SA182F316	33.4			2	-	4	0	0	
8	DUMMY	PIPE	SA312TP316L	OD	3.91	GTAW + SMAW	3.91 V	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	60.3			107	2354	107	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	03-06-2025	4-80-473-A0733 01 OF 02 /REV 00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1,832
		PGMA:	83-473
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	DEMINERALISED WATER SYSTEM

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	DUMMY	PIPE	SA312TP316L	OD	6.35	GTAW +SMAW	6.35	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	273			79	5085.23	1501	0	0	
1	DUMMY	PIPE	SA312TP316L	OD	3.05	GTAW +SMAW	3.05	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	88.9			52	1829.88	0	0	0	
1	DUMMY	PIPE	SA312TP316L	OD	3.91	GTAW +SMAW	3.91	ER316L	E316			1071
		PIPE/FITTING	SA182F316	60.3			2	-	3	0	0	
1	DUMMY	PIPE	SA312TP304H	OD	4.55	GTAW +SMAW	4.55	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	33.4			64	453.76	64	0	0	
5	DUMMY	PIPE	SA106GRB	OD	4.55	GTAW +SMAW	4.55	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	SA106GRB SA234WPB	33.4			41	290.69	41	0	0	
6	DUMMY	PIPE	SA106GRB	OD	5.54	GTAW +SMAW	5.54	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	SA106GRB SA234WPB	60.3			21	279.51	63	0	0	
7	DUMMY	PIPE	SA312TP316L	OD	4.19	GTAW +SMAW	4.19	ER316L	E316			1071
		PIPE/FITTINGS	SA312TP316L SA403WP316L	273.1			29	1919.51	203	0	0	
8	DUMMY	PIPE	SA312TP316L	OD	3.76	GTAW +SMAW	3.76	ER316L	E316			1071
		PIPE/FITTINGS	SA312TP316L SA403WP316L	219.1			11	587.84	55	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	03-06-2025	4-80-473-A0733 02 OF 02 / REV 00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	83-477
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	SERVICE WATER PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			Root Arc	Arc spec			
		Part-1	Part-1	Size				Qty (Nos)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.5	Dia2.5	Dia3.2	Dia4.0	
1	Dummy 2& 3	PIPE	IS1239	OD	4	SMAW	4 V	E6013	E7018			1271
		PIPE/FITTING	IS1239 IS1239	33.4			647	1294	647	0	0	
2	Dummy 3	PIPE	IS1239	OD	4.5	SMAW	4.5 V	E6013	E7018			1271
		PIPE/FITTING	IS1239 IS1239	60.3			369	1107	369	0	0	
3	Dummy 1 & 4	PIPE	IS1239	OD	5.4	SMAW	5.4 V	E6013	E7018			1271
		PIPE/FITTING	IS1239 IS1239	114.3			240	1200	720	0	0	
4	Dummy	PIPE	IS1239	OD	5.4	SMAW	5.4 V	E6013	E7018			1272
		FITTING	SA234WPB	114.3			5	25	15	0	0	

NOTES:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR

NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.

REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.

(2) REFER DOC (3)

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

\# - REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	03-06-2025	4-80-477-A0735 01 OF 01 / REV 00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT (PH-II) SINGRAULI, MP MAHAN	**CUST. NO:**	1832/1833
		PGMA:	80-493
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	HP FLASH TANK VENT TO CONDENSER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-493-A0416	PIPE	SA672GRB70	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE	SA672GRB70	1118			6	1308	654	222	0	
2												
3												
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	17.06.25	4-80-493-84670 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT (PH-II) SINGRAULI, MP MAHAN	**CUST. NO:**	1832/1833
		PGMA:	80-494
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	LP FLASH TANK VENT TO CONDENSER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-494-A0844	PIPE	SA672GRB70	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE	SA672GRB70 SA515GR70	1118			15	7340	1455	615	0	
2												
3												
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	17.06.25	4-80-494-84671 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT (PH-II) SINGRAULI, MP MAHAN	**CUST. NO:**	1832/1833
		PGMA:	80-494
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	LP FLASH TANK VENT TO CONDENSER

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-494-A0844	PIPE	SA672GRB70	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE	SA672GRB70 SA515GR70	1118			15	7340	1455	615	0	
2												
3												
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	17.06.25	4-80-494-84671 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832
		PGMA:	80-495
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	ISOMETRIC OF FLASH TANK-B VENT AND DRAIN

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-495-A0845	PIPE	SA672GRB70	OD	10	TIG & ARC	10	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA672GRB70 SA234WPB	610			12	3360	624	168	0	
2												
3												
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	WTC-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANIKANDAN C	16.06.2025	4-80-495-A0757 01OF01 REV00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1,832
		PGMA:	80-601
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	LOW PRESSURE DOSING PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	DUMMY	PIPE	SA312TP304H	OD	3.38	GTAW +SMAW	3.38	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	33.4			530	6360	530	0	0	
2	DUMMY	PIPE	SA312TP304H	OD	3.73	GTAW +SMAW	3.73	ER308	E308			1079
		PIPE/FITTING	SA312TP304H SA403WP304H	21.3			90	810	90	0	0	
3	DUMMY	PIPE	SA106GRB	OD	3.38	TIG & ARC	3.38	ER70S-A1	E7018-1			1003
		PIPE/FITTING	SA106GRB SA234WPB	33.4			35	420	35	0	0	
2	DUMMY	PIPE	SA312TP316L	OD	3.38	GTAW +SMAW	3.38	ER316L	E316			1071
		PIPE/FITTING	SA312TP316L SA403WP316L	33.4			18	216	18	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
(2) REFER DOC NO:
(3) REFER
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04.06.2025	4-80-601-A0731 01 OF 01 R/00

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-673
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	LUBE OIL PIPING SYSTEM

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	DUMMY 1	**PIPE**	**SA106GRB**	OD	5.49	TIG & ARC	5.49	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	**SA106GRB SA234WPB**	88.9			479	16286	958	0	0	
2	DUMMY 1&2	**PIPE**	**SA106GRB**	OD	4.55	TIG & ARC	4.55	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	**SA106GRB SA234WPB**	33.4			87	990.06	87	0	0	
3	DUMMY 1	**PIPE**	**SA106GRB**	OD	5.54	TIG & ARC	5.54	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	**SA106GRB SA234WPB**	60.3			43	946	43	0	0	
4	DUMMY 2	**PIPE**	**SA106GRB**	OD	4.78	TIG & ARC	4.78	ER70S-A1	E7018-1			1003
		PIPE/FITTINGS	**SA106GRB SA234WPB**	21.3			4	28	4	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04.06.2025	**4-80-673-A0732** 01 OF 01 R/00

Addendum to Annexure-10: EWS Critical piping

Addendum to Annexure 10 EWS Critical piping

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-300
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	MAIN STEAM FROM SUPERHEATER TO BOILER STOP VALVE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-300-A0094	PIPE	SA335P92	ID	86	TIG & ARC	86	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA234WP92	300			11	935	99	121	10945	
2	1-80-300-A0094	PIPE	SA335P92	ID	86	TIG & ARC	86	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA182F92	300			2	170	18	22	1990	
3	1-80-300-A0094	PIPE	SA335P92	ID	100	TIG & ARC	100	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA335P92	350			5	490	50	65	7300	
4	1-80-300-A0094	PIPE	SA335P92	ID	98	TIG & ARC	98	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA182F92	350			4	392	40	52	5632	
5	1-80-300-A0094	PIPE	SA335P92	ID	86	TIG & ARC	86	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA335P92	300			13	1105	117	143	12935	
6	1-80-300-A0094	PIPE	SA335P92	ID	100	TIG & ARC	100	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA335P92	350			4	392	40	52	5840	
7	1-80-300-A0094	PIPE	SA335P92	OD	23	TIG & ARC	23	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	1-80-300-A0095	PIPE/FITTING	SA182F92	88.9			16	352	80	176	64	
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-12-2024	4-80-300-A0342 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-301
NAME OF THE CUSTOMER:	MAHAN ENERGEN LTD. (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF MAIN STEAM PIPING FROM BOILER STOP VALVE TO MAIN STEAM STOP VALVE

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	0-80-301-A0051	**PIPE**	**SA335P92**	ID	100	TIG & ARC	100	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE/FITTINGS	**SA335P92**	350			60	5880	600	780	87600	
2	0-80-301-A0051	**PIPE**	**SA335P92**	ID	98	TIG & ARC	98	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE/FITTINGS	**SA182F92**	350			8	784	80	104	11264	
3	0-80-301-A0051	**PIPE**	**SA335P92**	ID	98	TIG & ARC	98	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE/FITTINGS	**SA335P92**	350			8	784	80	104	11264	
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	6-12-2024	4-80-301-A0343/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI,M.P	**CUST. NO:**	1832
		PGMA:	80-303
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	MAIN STEAM PIPING TO AUXILIARY PRESSURE REDUCING STATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-303-A0207(ZONE1)	**PIPE**	**SA335P92**	OD	49	TIG & ARC	49 U	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE /FITTINGS	**SA335P92**	219.1			11	638	66	88	44	
2	1-80-303-A0207(ZONE2)	**PIPE**	**SA335P22**	OD	9.53	TIG & ARC	9.53 V	ER90S-B3	E9018-B3			1014
		PIPE /FITTINGS	**SA234WP22**	508			1	187	46	20	0	
3	1-80-303-A0207(ZONE2)	**PIPE**	**SA335P22**	OD	9.53	TIG & ARC	9.53 V	ER90S-B3	E9018-B3			1014
		PIPE /FITTINGS	**SA335P22**	508			1	187	46	20	0	
4	1-80-303-A0207(ZONE2)	**PIPE**	**SA335P11**	OD	9.53	TIG & ARC	9.53 V	ER80S-B2	E8018-B2			1012
		PIPE /FITTINGS	**SA234WP22**	508			1	187	46	20	0	
5	1-80-303-A0207(ZONE2)	**PIPE**	**SA335P11**	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018A1			1017
		PIPE /FITTINGS	**SA106GRB**	508			1	187	46	20	0	
6	1-80-303-A0207(ZONE2)	**PIPE**	**SA106GRB**	OD	9.53	TIG & ARC	9.53 V	ER70S-A1	E7018-1			1003
		PIPE /FITTINGS	**SA234WPB**	508			3	561	138	60	0	
7	1-80-303-A0207(ZONE2)	**PIPE**	**SA106GRB**	OD	20.62	TIG & ARC	20.62 W	ER70S-A1	E7018-1			1004
		PIPE /FITTINGS	**SA234WPB**	508			1	230	44	14	0	
8	1-80-303-A0207(ZONE2)	**PIPE**	**SA106GRB**	OD	20.62	TIG & ARC	20.62 W	ER70S-A1	E7018-1			1004
		PIPE /FITTINGS	**SA106GRB**	508			3	690	132	42	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	6.12.2024	4-80-303-A0352/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:		**CUST. NO:**	1832&1833
		PGMA:	80-303
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	MAIN STEAM PIPING TO AUXILIARY PRESSURE REDUCING STATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
9	1-80-303-A0207(ZONE2)	**PIPE**	**SA234WPB**	OD	9.53	TIG & ARC	9.53	ER70S-A1	E7018-1			1003
		PIPE /FITTINGS	**SA234WPB**	508			1	187	46	20	0	
10	1-80-303-A0207(ZONE2)	**PIPE**	**SA234WPB**	OD	6.53	TIG & ARC	6.53	ER70S-A1	E7018-1			1003
		PIPE /FITTINGS	**SA106GRB**	219.1			2	164	30	0	0	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
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$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	6-12-2024	4-80-303-A0352 02OF02

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, M.P	**CUST. NO:**	1832
		PGMA:	80-304
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF HPBP PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.			
				ID/OD	Thick			TIG	Arc spec						
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)						
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0				
1	1-80-304-A0234	PIPE	SA335P92	ID	59	TIG & ARC	59	9CrWVTIG/Thermanit MTS616	E9015-B92			1056			
		PIPE/ FITTINGS	SA335P92	200			14	798	84	112	5264				
2	1-80-304-A0234	PIPE	SA335P92	ID	57	TIG & ARC	57	9CrWVTIG/Thermanit MTS616	E9015-B92			1056			
		PIPE/ FITTINGS	SA335P92	200			1	37	6	8	361				
3															
4															
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7															
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NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
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T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	06-12-2024	4-80-304-A0344/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI, M.P	**CUST. NO:**	1832
		PGMA:	80-310
NAME OF THE CUSTOMER:	MAHAN ENERGEN LIMITED (MEL)	**SYSTEM DESCRIPTION:**	ISOMETRIC OF HOT REHEAT PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	0-80-310-A0048	**PIPE**	**SA335P92**	ID	38	TIG & ARC	38	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	0-80-310-A0049	**PIPE/FITTINGS**	**SA182F92**	650			2	362	38	48	1048	
2	0-80-310-A0048	**PIPE**	**SA335P92**	ID	40	TIG & ARC	40	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	0-80-310-A0049	**PIPE/FITTINGS**	**SA335P92**	650			75	13575	1425	1800	42450	
3	0-80-310-A0048	**PIPE**	**SA335P92**	ID	38	TIG & ARC	38	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	0-80-310-A0049	**PIPE/FITTINGS**	**SA335P92**	650			25	4525	475	600	13100	
4	0-80-310-A0048	**PIPE**	**SA335P92**	ID	40	TIG & ARC	40	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
	0-80-310-A0049	**PIPE/FITTINGS**	**SA182F92**	650			2	362	38	48	1132	
5												
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NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
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# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	06-12-2024	4-80-310-A0345/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2x800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PH-II) SINGRAULI , MP	**CUST. NO:**	1832&1833
		PGMA:	80-312
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	ISOMETRIC OF LOW PRESSURE BYPASS PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	0-80-312-A0053(ZONE 1)	**PIPE**	**SA335P92**	ID	40	TIG & ARC	40	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE/FITTING	**SA335P92**	620			20	3460	360	460	10820	
2	0-80-312-A0053(ZONE 1)	**PIPE**	**SA335P92**	ID	37	TIG & ARC	37	9CrWVTIG/Thermanit MTS616	E9015-B92			1056
		PIPE/FITTING	**SA335P92**	620			14	2422	252	322	6748	
3	0-80-312-A0053(ZONE 2)	**PIPE**	**SA691GR22**	OD	28	TIG & ARC	28	ER90S-B3	E9018-B3			1014
		PIPE/FITTING	**SA691GR22**	1118			2	758	210	310	338	
4												
5												
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	6.12.2024	4-80-312-A0357/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI ,M.P	**CUST. NO:**	1832&1833
		PGMA:	80-320
NAME OF THE CUSTOMER:	TATA CONSULTING ENGINEERS LIMITED,MUMBAI,INDIA.	**SYSTEM DESCRIPTION:**	ISOMETRIC OF COLD REHEATING PIPING PART 1&2

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-320-A0103	PIPE	SA106GRC	OD	38	TIG & ARC	38	ER70S-A1	E7018-1			1004
	0-80-312-A0053	PIPE & FITTING	SA234WPC	1016			27	9207	2484	3726	8478	
2	1-80-320-A0103	PIPE	SA106GRC	OD	38	TIG & ARC	38	ER70S-A1	E7018-1			1004
	0-80-312-A0053	PIPE & FITTING	SA106GRC	1016			6	2046	552	828	1884	
3	1-80-320-A0103	PIPE	SA234WPC	OD	38	TIG & ARC	38	ER70S-A1	E7018-1			1004
	0-80-312-A0053	PIPE & FITTING	SA234WPC	1016			5	1705	460	690	1570	
4	1-80-320-A0103	PIPE	SA106GRC	OD	38	TIG & ARC	38	ER70S-A1	E7018A1			1018
	0-80-312-A0053	PIPE & FITTING	SA182F12	1016			1	341	92	138	314	
5	1-80-320-A0103	PIPE	SA106GRC	OD	16	TIG & ARC	16	ER70S-A1	E7018-1			1003
	0-80-312-A0053	PIPE & FITTING	SA234WPC	406.4			2	292	64	104	0	
6	1-80-320-A0103	PIPE	SA234WP22	OD	20	TIG & ARC	20	ER90S-B3	E9018-B3			1014
	0-80-312-A0053	PIPE & FITTING	SA182F22	323.9			1	113	27	46	10	
7	1-80-320-A0103	PIPE	SA335P22	OD	20	TIG & ARC	20	ER90S-B3	E9018-B3			1014
	0-80-312-A0053	PIPE & FITTING	SA234WP22	323.9			2	226	54	92	20	
8	1-80-320-A0103	PIPE	SA106GRC	OD	34	TIG & ARC	34	ER70S-A1	E7018-1			1004
	0-80-312-A0053	PIPE & FITTING	SA234WPC	864			2	590	154	238	350	

NOTES:

(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR

(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.

(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.

* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.

\# - REFER WPS FOR BACKING / PURGING GAS

T - BASE METAL THICKNESS

$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	07-12-2024	4-80-320-A0351/R00 SHEET NO-01 OF 02

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN (PH-II) SINGRAULI ,M.P	**CUST. NO:**	1832&1833
		PGMA:	80-320
NAME OF THE CUSTOMER:	TATA CONSULTING ENGINEERS LIMITED,MUMBAI,INDIA.	**SYSTEM DESCRIPTION:**	ISOMETRIC OF COLD REHEATING PIPING PART 1&2

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
9	1-80-320-A0103	**PIPE**	**SA106GRC**	OD	34	TIG & ARC	34	ER70S-A1	E7018-1			1004
	0-80-312-A0053	**PIPE & FITTING**	**SA106GRC**	864			20	5900	1540	2380	3500	
10	1-80-320-A0103	**PIPE**	**SA106GRC**	OD	32	TIG & ARC	32	ER70S-A1	E7018-1			1004
	0-80-312-A0053	**PIPE & FITTING**	**SA106GRC**	864			26	7670	2002	3094	4550	
11	1-80-320-A0103	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
	0-80-312-A0053	**PIPE & FITTING**	**SA182F22**	864			1	293	77	118	220	
12	1-80-320-A0103	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
	0-80-312-A0053	**PIPE & FITTING**	**SA234WP22**	864			4	1172	308	472	880	
13	1-80-320-A0103	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER80S-B2	E8018-B2			1012
	0-80-312-A0053	**PIPE & FITTING**	**SA182F12**	864			2	586	154	236	440	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01			
REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	07-12-2024	4-80-320-A0351/R00 SHEET NO-02 OF 02

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI,MP	**CUST. NO:**	1832
		PGMA:	80-321
NAME OF THE CUSTOMER:	ADHANI POWER LIMITED	**SYSTEM DESCRIPTION:**	ISO OF HIGH PRESSURE BYPASS VALVE TO COLD REHEAT PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-321-A0176(ZONE 1)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA182F22**	558.8			9	3888	396	198	2691	
2	1-80-321-A0176(ZONE 1)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA335P22**	558.8			2	864	88	44	598	
3	1-80-321-A0176(ZONE 1)	**PIPE**	**SA182F22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA234WP22**	558.8			1	432	44	22	299	
4	1-80-321-A0176(ZONE 1)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA234WP22**	538.8			3	1296	132	66	897	
5	1-80-321-A0176(ZONE 2)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA335P22**	558.8			8	3456	352	176	2392	
6	1-80-321-A0176(ZONE 2)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER90S-B3	E9018-B3			1014
		PIPE/FITTINGS	**SA234WP22**	558.8			4	1728	176	88	1196	
7	1-80-321-A0176(ZONE 2)	**PIPE**	**SA335P22**	OD	35	TIG & ARC	35	ER80S-B2	E8018-B2			1012
		PIPE/FITTINGS	**SA335P12**	558.8			2	864	88	44	598	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO:NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURERSH	MANOJ PANDI	6.12.2024	4-80-321-A0358/R00 SHEET 01OF01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-421
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BOILER FEED PUMP RECIRCULATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-421-A0187	PIPE	SA106GRC	OD	62	TIG & ARC	62	ER70S-A1	E7018-1			1004
	1-80-421-A0187	PIPE/FITTINGS	SA234WPC	323.9			6	491.52	114	204	1380	
2	1-80-421-A0187	PIPE	SA106GRC	OD	62	TIG & ARC	62	ER70S-A1	E7018A1			1018
	1-80-421-A0187	PIPE/FITTINGS	SA182F12	323.9			2	163.84	38	68	460	
3	1-80-421-A0187	PIPE	SA182F12	OD	62	TIG & ARC	62	ER80S-B2	E8018-B2			1010
	1-80-421-A0187	PIPE/FITTINGS	SA182F12	323.9			2	163.84	38	68	460	
4	1-80-421-A0187	PIPE	SA106GRB	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1003
	1-80-421-A0187	PIPE/FITTINGS	SA234WPB	273			12	743.88	312	96	0	
5	1-80-421-A0187	PIPE	SA106GRB	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1003
	1-80-421-A0187	PIPE/FITTINGS	SA106GRB	273			5	309.95	130	40	0	
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
02			
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-01-2025	4-80-421-A0411 01OF03/R01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-421
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BOILER FEED PUMP RECIRCULATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-421-A0188	PIPE	SA106GRC	OD	62	TIG & ARC	62	ER70S-A1	E7018-1			1004
	1-80-421-A0188	PIPE/FITTINGS	SA234WPC	323.9			5	409.6	95	170	1150	
2	1-80-421-A0188	PIPE	SA106GRC	OD	62	TIG & ARC	62	ER70S-A1	E7018A1			1018
	1-80-421-A0188	PIPE/FITTINGS	SA182F12	323.9			3	245.76	57	102	690	
3	1-80-421-A0188	PIPE	SA182F12	OD	62	TIG & ARC	62	ER80S-B2	E8018-B2			1010
	1-80-421-A0188	PIPE/FITTINGS	SA182F12	323.9			2	163.84	38	68	460	
4	1-80-421-A0188	PIPE	SA106GRB	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1003
	1-80-421-A0188	PIPE/FITTINGS	SA234WPB	273			12	743.88	312	96	0	
5	1-80-421-A0188	PIPE	SA106GRB	OD	9.27	TIG & ARC	9.27	ER70S-A1	E7018-1			1003
	1-80-421-A0188	PIPE/FITTINGS	SA106GRB	273			5	309.95	130	40	0	
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
02			
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-01-2025	4-80-421-A0411 02OF03/R01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-421
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BOILER FEED PUMP RECIRCULATION

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-421-A0192	PIPE	SA106GRC	OD	43	TIG & ARC	43	ER70S-A1	E7018-1			1004
	1-80-421-A0192	PIPE/FITTINGS	SA234WPC	219.1			12	667.56	156	288	972	
2	1-80-421-A0192	PIPE	SA106GRC	OD	43	TIG & ARC	43	ER70S-A1	E7018A1			1018
	1-80-421-A0192	PIPE/FITTINGS	SA182F11	219.1			2	111.26	26	48	162	
3	1-80-421-A0192	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-421-A0192	PIPE/FITTINGS	SA106GRB	219.1			6	309.6	90	0	0	
4	1-80-421-A0192	PIPE	SA106GRB	OD	6.35	TIG & ARC	6.35	ER70S-A1	E7018-1			1003
	1-80-421-A0192	PIPE/FITTINGS	SA234WPB	219.1			9	464.4	135	0	0	
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
02			
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	04-01-2025	4-80-421-A0411 03OF03/R01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-423
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BOILER FEED DISCHARGE PIPING

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	0-80-423-A0086	PIPE/FITTINGS	SA106GRC SA234WPC	OD	67	TIG & ARC	67	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	355.6			34	2287.86	238	272	16388	
2	0-80-423-A0086	PIPE/FITTINGS	SA106GRC SA234WPC	OD	97	TIG & ARC	97	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	508			42	3993.78	420	504	49938	
3	0-80-423-A0086	PIPE/FITTINGS	SA106GRC SA234WPC	OD	125	TIG & ARC	125	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	660			19	2338.33	247	285	44232	
4	0-80-423-A0086	PIPE/FITTINGS	SA106GRC SA234WPC	OD	60	TIG & ARC	60	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	406.4			45	3878.1	405	495	21645	
5	0-80-423-A0086	PIPE	SA106GRC	OD	51	TIG & ARC	51	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	355.6			5	377.15	40	45	1750	
6	0-80-423-A0068	PIPE/FITTINGS	SA106GRC SA234WPC	OD	88	TIG & ARC	88	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	610			15	1943.7	210	240	19305	
7	0-80-423-A0068	PIPE	SA106GRC	OD	26	TIG & ARC	26	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA234WPC	168.3			1	36.34	4	5	55	
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
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PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	03.01.2025	4-80-423-A0412 01OF01/R01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-424
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BFP DISCHARGE PIPING BETWEEN HEATERS-PART-I

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	0-80-424-A0080	PIPE	SA106GRC	OD	67	TIG & ARC	67	ER70S-A1	E7018-1			1004
	0-80-424-A0080	PIPE/FITTINGS	SA106GRC SA234WPC	457			56	5426.4	616	672	36400	
2	0-80-424-A0080	FITTING	SA105	OD	67	TIG & ARC	67	ER70S-A1	E7018-1			1004
	0-80-424-A0080	PIPE/FITTINGS	SA106GRC SA234WPC	457			20	1938	220	240	13000	
3	0-80-424-A0074	PIPE	SA106GRC	OD	41	TIG & ARC	41	ER70S-A1	E7018-1			1004
	0-80-424-A0074	PIPE/FITTIUNGS	SA106GRC SA234WPC	273			46	2667.54	276	322	8832	
4	0-80-424-A0074	FITTING	SA105	OD	41	TIG & ARC	41	ER70S-A1	E7018-1			1004
	0-80-424-A0074	PIPE/FITTINGS	SA106GRC SA234WPC	273			7	405.93	42	49	1344	
5	0-80-424-A0074	PIPE	SA106GRC	OD	51	TIG & ARC	51	ER70S-A1	E7018-1			1004
	0-80-424-A0074	PIPE/FITTIUNGS	SA234WPC	355.6			10	773.3	80	100	3200	

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	02.01.2025	4-80-424-A0414 01OF01/R01

ERECTION/FIELD WELDING SCHEDULE

PROJECT:	MAHAN ENERGEN LIMITED 2X800MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT MAHAN(PH-II) SINGRAULI, MP	**CUST. NO:**	1832
		PGMA:	80-425
NAME OF THE CUSTOMER:	ADANI POWER LIMITED	**SYSTEM DESCRIPTION:**	BFD FROM FINAL HPH TO SG TP

Sl.No.	Drg. No. for weld location	Description of parts to be welded	Matl. Spec.	Dimensions		Process of Welding	Type of weld	Electrode filler spec.				W.P.S no.
				ID/OD	Thick			TIG	Arc spec			
		Part-1	Part-1	Size				Qty (gms)	Qty(nos)			
		Part-2	Part-2	mm	mm		Qty	Dia2.4	Dia2.5	Dia3.2	Dia4.0	
1	1-80-425-A0102	PIPE	SA106GRC	OD	95	TIG & ARC	95	ER70S-A1	E7018-1			1004
	0-80-425-A0075	PIPE/FITTINGS	SA106GRC SA234WPC	660			33	4636.5	495	561	51876	
2	0-80-425-A0075	PIPE	SA106GRC	OD	67	TIG & ARC	67	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	457			20	1938	220	240	13000	
1	1-80-425-A0102	PIPE	SA106GRC	OD	74	TIG & ARC	74	ER70S-A1	E7018-1			1004
		PIPE/FITTINGS	SA106GRC SA234WPC	508			32	3449.28	384	416	26784	
6												
7												
8												

NOTES:
(1) REFER DOC NO: AA/CQ/GL/011 (Latest Revision) - MANUAL FOR WELDING, HEAT TREATMENT AND NON DESTRUCTIVE TESTING FOR POWER SECTOR
(2) REFER DOC NO: NDT/EWS/1832 (LATEST REVISION) FOR NDT REQUIREMENTS.
(3) REFER RESPECTIVE WPS (LATEST REVISION) FOR PREHEAT AND POST WELDING HEAT TREATMENT.
* - REFER WPS FOR PREHEAT MAINTENANCE,POSTHEAT,INTERPASS TEMP. AND OTHER REQUIREMENTS.
# - REFER WPS FOR BACKING / PURGING GAS
T - BASE METAL THICKNESS
$ - REFER WPS FOR INTERPASS TEMP.

REV NO	DATE	ALTERED	APPROVED
01	09.03.2025	DK	P SURESH
02			
03			
04			

PREPARED BY	DESIGN/CHD.	DESIGN/APPD.	QA-CHD./APPRD.	DATE	DRAWING NO:
DHARMENDRA	IDB RAJU	P SURESH	MANOJ PANDI	02.01.2025	4-80-425-A0416 01OF01/R001

Annexure-18: Insulation guidelines

GENERAL GUIDELINES FOR INSULATION WORKS

This booklet is given as a general guideline to this tenderers about insulation works, However instructions given in the drawings & other schedule issued during execution of the work shall be final and binding of the contractor.

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector Southern Region
690, Anna Salai , Nandanam,
Chennai – 600 035

GENERAL NOTES ON
ERECTION OF INSULATION

1. It is important that the sheet metal covering is done, by a experienced and competent tinsmith.

2. Person, who is doing the actual job, can alter the following said methods of fixing the sheet metal, as and when necessary, only after consulting the BHEL Erection Engineer.

3. Fixing pin of corresponding thickness of insulation shall be welded by **STUD WELDING** process.

4. Circumferential and axial overlapping of outer casing should be 50 mm unless specified otherwise.

5. **FOR HORIZONTAL AND INCLINED DUCT AND PIPE**:

   1) All overlapping in axial direction should be at the bottom of the duct and pipe. Provision of beading and Sealing compound is not required.

   2) For circumferential overlapping of inclined duct and pipe, provision of beading and Sealing compound is not required.

   3) For circumferential overlapping of horizontal pipe and duct, provide beading. Apply Sealing compound if necessary.

5A. **FOR VERTICAL DUCT AND PIPE:**

   1) For overlapping in the axial direction provide beading. Apply Sealing compound if necessary.

   2) For circumferential overlapping provision of beading and Sealing compound is not required.

6. The joints of wool mattresses should be staggered in both circumferential and axial direction. The Wire netting at the joints of Wool mattresses are to be sewn together by G.I. sewing wire dia 0.71 mm.

7. In case more than one layer of Wool mattress is to be applied for pipe insulation the inner layer should be tied by two turns of G.I binding wire dia 1.22 mm at a pitch of 240 mm, and the outer layer should be tied by two turns of G.I. binding wire dia 1.22 mm at a pitch of 160 mm. The ends of the wire should be twisted and pressed in to the insulation.

8. All the overlapping of outer casing should be made such that no rain water enters into the insulation through the joints.

9. Incase of insulation fixing pin welding to tubes, equal circumferential pitch is to be maintained. Use a minimum number of 4 pins, at 90 degree radial spacing.

10. The inner side of the Aluminum / G.I sheet of outer casing should be painted with two coats of anticorrosive Paint (IS:158). Retainer – Type A must be coated with Aluminum paint to avoid bi-metal corrosion or Neoprene strip must be provided between Retainer – Type A and Casing support.

    The above mentioned paints are not in BHEL scope of supply

11. Self tapping screws should be fixed over the circumferential overlapping. The axial joints should be on the Casing supports and outer casing should be fixed to Casing supports with Self tapping screws at a pitch of 150 mm approximately.

12. The outer casing should be wound tightly around the insulation and then fixed with Self tapping screws when there is not any Fixing pin for insulation.

13. Loose wool can be taken from the Wool mattresses wherever required.

14. Clean the surface to be insulated of rust, dust, grease, loose scale, oil, moisture, etc.

15. Care shall be taken that flexible insulation is not unduly compressed.

16. After insulating the equipment with Calcium silicate / Mineral wool mattress, all voids in the joints shall be filled with Moldable insulation / loose mineral wool respectively.

17. Each day application of insulation should be weather proofed overnight by either with the final protective casing or with some temporary weatherproof covering so that it does not get drenched in rain.

18. The indicated thickness of insulation is the minimum requirement which should be provided. Any alteration in the thickness of insulation should be done only after getting the prior approval from the Design Engineer.

19. The layers of Wool mattresses are to be taken as indicated below:

	LAYER IN mm				
THICKNESS IN mm	1st	2nd	3rd	4th	5th
250	50	50	50	50	50
230	50	60	60	60	
210	50	50	50	60	
200	50	50	50	50	
190	40	50	50	50	
180	60	60	60		

160	50	50	60
150	50	50	50
140	40	50	50
120	60	60	
100	50	50	
80	40	40	

20. Where junctions between two or three bodies or different dia, occur and different insulation thickness is specified the greater thickness shall be continued for a length equal to one dia of the smaller body then smoothly tapered to the required smaller thickness over a length equal to two dia of the smaller body. When there is a differential thermal expansion between these bodies, they should be insulated individually.

21. The required fixing components and outer casing sheets have been released under PG_32. The insulation materials have been released under PG-33.

22. **STORAGE INSTRUCTIONS**:

22a) Mineral wool mattress:

These materials should be stored under fully covered sheds. Stocking must be done over planks and must be out of contact with ground. Height of stacking should not exceed 3 Meters.

Once drenched in water these materials loose all the desired properties and become unsuitable for use. Drying the material does not restore the desired properties.

22b) Outer casing sheets:

Outer surfaces are meant for improving the appearances also scratch marks, dents, etc, spoil the appearance.

23. Typical insulation arrangement drawings are indicated below.

1)	Tees	4-00-235-08546
2)	Elbows	4-00-235-08547
3)	Flanges	4-00-235-08548
4)	Expansion joint for pipe	4-00-235-08549
5)	Expansion piece for duct	3-00-235-06258 & 3-00-235-06259
6)	Manhole door for duct	3-00-235-06260

INSULATION OF DRUM END

MATERIAL:

1) FLAT 50 X 6
2) FIXING PIN INSLN DIA – 6
3) RETAINER TYPE – A
4) G.L. BINDING WIRE DIA – 1.22 / 0.914
5) WOOL MATTRESS
6) OUTER CASING
7) SELF TAPPING SCREW – M4 X 13
8) G.L. SEWING WIRE DIA – 0.71 / 0.914

APPLICATION:

Install Flat 50 x 6 circumferential bands to fit snugly around the drum.

Flat 50 x 6 lattice bar 8 numbers should be radially placed over the dished end and contouring the same and it is to be welded over circumferential bands.

Weld the Fixing pins to the lattice bars circumferential bands.

Fix the Wool mattress.

Position the Retainer and tack weld to the Pin.

Tie with Binding wire across the Pins.

Fix the outer casing strips by Self tapping screws.

INSULATION OF PIPES AND BUNCH OF TUBES

MATERIAL:

1) WOOL MATTRESS
2) G.L. SEWING WIRE DIA-0.71 / 0.914
3) G.L. BINDING WIRE DIA – 1.22 / 0.914
4) OUTER CASING
5) SELF TAPPING SCREW – M4 x 13

APPLICATION:

Fix the insulation over the bunch of tubes / pipes.

Tie the insulation with G.I. binding wire circumferentially.

Fix the outer casing sheet with self-tapping screws.

INSULATION OF VERTICAL PIPES
(WELDING OF FIXING PINS NOT PERMITTED ON PIPES)

MATERIALS:

1) FIXING PIN INSLN DIA – 6
2) RETAINER TYPE – A
3) CASING SUPPORT – 850MM
4) OUTER CASING
5) WOOL MATTRESS
6) SELF TAPPING SCREW – M4X13
7) CLAMP
8) SUPPORTING SHEET
9) FLAT 50 x 6
10) PACKING CLOTH – 3 MM TK
11) HEX HD BOLT M8X40
12) HEX NUT M8
13) PNCHD WASHER A9
14) GI BINDING WIRE DIA – 1.22 /0.914
15) GI SEWING WIRE DIA – 0.71 / 0.914
16) SHEET 3.15x30x3000

APPLICATION:

At every three meters provide the Clamps over the pipe with bolt but and washer by using packing cloth in between the pipe and clamp. Fix the sheet 3.15x30x3000 over the pipe and weld to the clamps. Weld the fixing pin over the sheet. Consult the Welding engineer before welding.

Weld the Flat to the Clamps.

Weld the Supporting sheets to the Flats.

Fix the insulation.

Position the Retainer Type – A and tack weld to the Pins.

Tie the insulation to the pipe with GI biding wire circumferentially.

Fix the casing support to the Retainer by using two numbers of Self tapping screws, fixed diagonally for each Retainer.

Fix the outer casing sheet with self tapping screws.

INSULATION OF VALVE

MATERIAL:

1) SM CLAMP FOR DETACHABLE INSULATION TYPE – A (To be used up to 200 mm overall dia)

1)a SM CLAMP FOR DETACHABLE INSULATION TYPE – B (To be used above 200 mm overall dia)

2) WOOL MATTRESS

3) OUTER CASING

4) SELF TAPPING SCRES – M4 x 13

5) G.I SEWING WIRE DIA – 0.71

6) SNAP HD RIVET 3 x 8

7) CHS SCREW M4 x 20

8) HEX NUT M4

APPLICATION:

The sheeting shall be made in two halves and the Sheet metal clamp mounted.

Wool mattress thickness according to adjacent pipe lines shall be pressed in to two halves.

The two halves shall be fitted over the valve to be insulated and locked by Sheet metal clamp.

Self tapping screws shall be used for clamping the two edges of the outer sheet casing when the length of the valve is more.

After assembling the Clamp put a bit of GI Binding wire as a pin through 1.6 mm hole provided.

INSULATION OF DUCT / FLAT SURFACE

MATERIALS:

1) FIXING PIN INSLN DIA – 6
2) WOOL MATTRESS
3) OUTER CASING
4) RETAINER TYPE – A
5) GI BINDING WIRE DA – 1.22 / 0.914
6) CASING SUPPORT – 650 MM
7) SELF TAPPING SCREW M4 x 13
8) GI SEWING WIRE DIA – 0.71 / 0.914

APPLICATION:

Weld the Fixing pin over the Duct / Flat surface.

Fix the insulation.

Position the Retainer Type – A and tack weld to the Fixing pins.

The GI Binding wire dia 1.22 shall be wound across the Fixing pins diagonally underneath the Retainer Type – A.

Fix the Casing support – 650 long to the Retainer Type – A by using two numbers of Self tapping screws, fixed diagonally for.

Retainer Type – A.

Fix the outer casing by using Self tapping screws.

DUCT STIFFENERS

When the stiffeners protrudes through the insulation and are exposed to atmosphere, provide an additional 40 mm insulation over the stiffener.

DUCT DAMPER & GATE

Insulation thickness shall be s per the adjacent duct insulation. The stuffing boxes should not be insulated. A clear gap of 50 mm (minimum) should be maintained all around the stuffing boxes.

AIR HEATERS

DO NOT insulate over the axial seal, adjuster seal access covers and basket removal doors insulation should be applied in a manner to permit a free circulation of ambient air around the bearing.

INSULATION OF DUCT
(CLEARING STIFFENERS)

MATERIALS:

1) FIXING PIN INSLN DIA – 6
2) RETAINER TYPE – A
3) RETAINER TYPE – C
4) CASING SUPPORT – 650 MM
5) GI BINDING WIRE DIA – 1.22/0.914
6) GI SEWING WIRE DIA – 0.71 / 0.914
7) OUTER CASING
8) SELF TAPPING SCREW M4X13
9) WOOL MATTRESS
10) WELD MESH
11) CORNER SUPPORT
12) ANGLE 40X40X5 – 100

APPLICATION:

Weld the Fixing pin over the Duct.

Position the Retainer Type – C so that it will be in the same plane as that of the top surface of the stiffener.

Tack weld the Retainer – Type – C to the Fixing pin.

For the top plate of the horizontal duct, spread the Weld mesh over the Retainer Type – C.

This serves as the additional support where people walk over the insulation.

Weld the Corner support to the bottom corners of the duct.

Weld the Angle to the corner support.

This arrangement will help to achieve a sharp corner for the insulation and outr casing.

Fix the insulation.

Position the Retainer Type – A and tack weld to the Fixing pin.

The Biding wire shall be wound across the pins diagonally underneath the Retainer Type – A.

Fix the Casing support - 650 mm long to the Retainer by using 2 numbers of Self tapping screws, fixed diagonally for each Retainer.

Fix the outer casing by using Self tapping screws.

PROCEDURE FOR CURING OF CASTABLE REFRECTORY

CURING OF REFRACTORY WORK

Curing of refractory means retaining the moisture for a minimum period in order to ensure the proper hydration of the binder. Curing of exposed castable surfaces should start after the surface has become firm. This can be tested when a finger rubbed across the surface comes away clean or when the surface feels warm to the touch. Moisture loss for the first 24 hours, after the material has been installed shall be retarded. Initial set occurs within one or two hours.

Castables should be cured for 24 hours. Moist conditions can be maintained by protection with damp sacking or plastic sheet which should not come into immediate contact with the refractory or alternatively by dry coating the castable with an impervious organic based sealing compound. In some instances, satisfactory results can be obtained by sparkling water over the surface. It should be watered for a period of 20 to 24 hours after 4 to 5 hours of construction. The rate of water applicable should be carefully controlled to prevent washing of the fines and to prevent collection of pools in low spots. Shield the surface from direct sunlight at least for about 48 hours. 8 hours after casting and pouring, remove the wooden frames which have no load bearing function in order to permit watering of the lateral parts of the structures. In case of steel frames apply water without stripping them. On completion of the curing period the application of moisture should be stopped. The exposed castable should be allowed to air dry for 24 hours. Naturally air drying of castable after curing will actually cause slight increase in strength. The castable can be all dried indefinitely without adverse effect. Optimum results cane be obtained with a drying period of 48 hours.

Before lighting the boiler for drying the setting the following shall be attended.

1. All dirt and foreign objects sticking to tube surface are to be removed to ensure a thoroughly clean surface.

2. Expansion joints are to be cleaned and inspected for the proper functioning of expansion during operation.

3. Test sample of castable refractory is to be taken from entry door regions to determine the moisture content in the laboratory.

   Sample of castable are to be taken for the determination of moisture content before and after drying. When the moisture content drops below 0.58 the castable is considered to be dry and the boiler is ready for commissioning. All result of measurement should be duly recorded.

CARE OF THE REFRACTORY WORK

The refractory work is subjected to considerable thermal stresses during boiler operation. Sudden application of heat or cooling introduces severe stresses and endangers the refractory work. Even when the boiler is operated in the recommended regime possibilities of damage occurring to the refractories (due to severed reasons such as bad workmanship, poor quality, slag deposition, corrosive atmosphere etc) must be kept in mind. The following simple rules to be observed.

(i) Avoid sudden cooling of the furnace after a shut down. A cooling rate of 20º to 30º per hour for the refractory lining in the initial period is recommended. This means that FD fans must be stopped after a shut down of the boiler. Ventilation of the furnace by natural draft is permissible only after six hours of shut down. Forced cooling can be started only after 16 hours.

(ii) Avoid quick heating of the furnace. Boiler starting diagram is usually a reliable guide.

(iii) Thoroughly examine the refractory work during shot downs for cracks, chipping off spelling etc. During operation also this can be checked periodically by visual examination through observation holes.

Whenever defects are notice arrange for their quick alimentation, by shutting down the boiler at the earliest depending on the scarceness of the defect.

(iv) Abnormal heating of outside metal sheet covering of the boiler and hot spots are usually a good indication of damaged refractory and insulation in this area. The leakage of flue gas will spoil the property of good mattresses within a short time.

(v) Deep the access door, observation doors, etc. properly shut. They are entry points for cold air and this cold air can damage the refractory work by localized cooling.

(vi) Sufficient quantity of water is to be added to the castable refractory for mixing before application as per supplier’s recommendations.

METHOD OF APPLICATION AND CURING OF POURABLE INSULATION

(i) Typical application are for insulating behind buckstays and areas such as roofs having multiplicity of hangers, rods and other penetrations.

(ii) The application of pourable insulation cab be pumping and gunning.

(iii) Density of the pourable insulation installed and cured is around 600 to 650 Kgs/ M

(iv) Pourable insulation is a hydraulic setting insulation additive or air entrainment agents shall not be used.

(v) (a) Empty the entire bag at a time and mi the while material so that segregated particles get mixed.

(b) The pourable insulation should be thoroughly mixed with coal clean water to develop casing and pump consistencies.

© The correct quantity of water shall be placed in the mixer before adding the dry pourable insulation normally about 70 to 100 by weight. However this has to be confirmed from the supplier while purchasing this material.

(d) Mixing time shall not to be less than the minutes or more than five minutes.

(e) Dried out material shall not be remixed.

(f) Pourable insulation once mixed must be in place within half an hour.

(vi) (a) All areas where pourable insulation will be placed must be fee of scale, rust, dust or other loose materials.

(b) All porous forms used such as wood etc shall be oiled before pouring.

© All absorbent surface such as insulation brick, concrete, shall be wet down thoroughly to prevent water absorption.

(d) Waiting of wall insulation used as forms at buckstay levels is not required.

(vii) (a) The surface of pourable insulation once in place will become firm in approximately two hours. The surfaces should be kept damp with an occasional light spray or covering with a cloth that is kept damp for the entire 24 hours curing period.

(b) For mixing and spraying the water should be clean and cold.

© Application of moisture after 24 hours should be stopped forms etc should be removed and the materials allowed to air dry for 24 hours.

(viii) The shuttering scaffolding moulds should be removed after about 36 hours of casing.

APPLICATION OF INSULATION FOR BOILER PIPING, PIPING AND EQUIPMENTS / VESSELS AND ACCESSORIES.

Bonded mattress having standard thickness to 25, 10, 50, 60, 75 mm confirming IS 8103 having a density of 150 kg/cubic meter and light bonded mattress having a density of 150 kg/cubic meter and light bounded mattress having standard thickness of 25. 40, 50, 60, 75 mm conforming to IS 9842 having a density of 144 kg/cubic meter and pipe section in the standard thickness of 25, 40, 50, 60, 75 mm confirming IS 9842 having density of 144 kg/cubic meter will be 100 kg/cubic Mtr.

The application of insulation will be done as per general notes/ drawings enclosed. The application commissioning shall be as per latest editions of IS 7413 code of practice for application and finishing of thermal insulation materials between 40º C to 700º C of Bs 5970 code for practice for thermal insulation of pipe work and equipment (in the temperature range – 100º C to + 870º C).

Inspection before application, during the application and after the application of insulation will be carried out by BHEL Field Quality Engineer as per BHEL Field Quality Plan. Every layer of insulation shall be got approved by BHEL Engineer / FQA Engineer.

Prior to applying insulation the surfaces to be insulated shall be made clean and dry and free from dirt and grease. Where cladding is attached to carbons steel or low alloy steels the steel shall be first prime painted with zinc chromate and then painted with Aluminum paintings. Wherever required to provide aluminum foil as protective covering for bolts and other fittings shall be arranged by contactor. The prints wherever required for preservation coating shall be supplied by contractor.

For insulation of piping with performed pipe sections the came shall be applied over pipe and finally be held in position with 15 mm wide aluminum band at greater than 300 mm spacing for mineral wool insulation.

For insulation of piping with mattresses having backing GI wire netting, the required lengths and shapes are to be cut from the blankets and wrapped on the piping and held in position with proper support by fastening the binding to be done circumferential at not greater than 300 mm spacing.

Performed insulation on vertical or near vertical piping must be supported in position by means of metal ring at interval not greater than 960 mm.

The support attachment may be welded or clamped to the pipe, subject to the approval of BHEL Site Engineer Necessary fabrication of support rings to be done as per site requirement.

Piping bends shall be insulated to the same specification as adjacent straight piping and should form a smooth external surface. Where performed material is used it should be cut loster-back fashion and wired or strapped into position.
Pipe insulation shall be cut to fit nearly around hangers and supports. On horizontal lines which are supported directly on pipe racks the insulation and weather proofing shall be sufficiently cut away at the support to accommodate pipe movement.

Protrusions through insulations which themselves do not required insulations such as pipe clamps supports of small pipings instrument take offs etc shall be covered to the same thickness as the adjacent insulation expect for hanger rods.

At outdoor location the hanger rod protraction shall be shielded with metal flashing to deflect rain and protect the insulation from moisture while permitting the movement of the hanger rod.

Arrangement of securing the metal finish even the insulation shall ensure that direct metal contact between the insulated surface and outer meter cladding is avoided. 4mm thick asbestos board packing shall be used at interface to thermally isolate the metal covering from supporting arrangement. All cladding joints shall be vapours tight and shall be able to accommodate thermal movements. Paste type self setting vapours sealing compound shall be used.

Metal cladding on piping shall be screwed with self tapping screws. These joints should be arranged approximately 30º below horizontal centre line so as to shed water on any horizontal pipe line. The screws shall be flat or round head types of 12mm size and overlapping of 50 mm on both longitudinal and circumferential joints. The screws shall be provided at not greater than 150 mm spacing.

Insulation expansion joints shall be provided in all pipelines to allow movements and expansion of the pipe. The recommended intervals of expansion joints are.

Pipe Temperature	Spacing of Insulation Expansion joints
Below 200°C	5.5 M
201° - 300°C	3.5 M
301°C - 400°C	3.0 M
Above 400°C	2.0 M

All joints in the insulation shall be staggered. For multiple layer of insulation the different layers shall be applied so that the butt joints of one layer do not coincide with those of the other layers. At the joint of each layer of insulation loose insulation shall be packed firmly.

Equipments Insulation Application Procedure

For equipment and shells a matrix of insulation support shall be developed by:-

(a) Welding the insulation support lugs on a frame work prepared with 20 mm x 3 mm size MS Straps where direct welding of lugs to he sheet is not permitted.

(b) Welding the directly on shell after written permission by Site Engineer. The material of the support shall be similar to the material of the shell in this case.

The support shell be pitched at 300 mm for vertical and underside surfaces and 500 mm for oppressed surfaces. A support shall be located above each vessel flange at a sufficient distance above the flange bolts to allow for easy removal. The top and bottoms supports shall be slotted suitably for attachments of straps and wires.

The support lugs shall be 6 mm

Insulation with back up GI wire noting, shall be cut to fit the equipments and shall be wrapped on the equipment and held in position with proper support and tie wires. All joints between course shall be staggered and tightly butter and adjacent edges laced together with lacing wire.

Insulation shall be fastened in place with MS Straps of 20 x 3 mm, on approx., 300 mm centers where contour of equipment permits. Straps shall be tightened with a banding machine and champed with seals.

Insulation on top of horizontal heads shall be cut to fit the curvature of the head and shall be secured in place with the help of radial straps fixed in between circumferential rings. Insulation on bottom heads shall be wired to nuts welded to head. Insulation shall also be strapped to bottoms insulation support. For outdoor equipments insulation shall be arranged to be weather proof.

Metal jacketing shell be applied directly over the met insulation and neatly fitted to place. All gaps shall be arranged so as to shed water. Suitable flashing and weather proofing shell be provided at all nozzles, manholes and other projections to prevent the entrance of water.

VALVES & FLANGES INSULATION APPLICATION

The insulation on all valves and flanged joints shall be enclosed in a removable jacketing so that it may be removed without disturbing the concerned equipment or piping. The thickness of insulation shall be same as that of the pipe line in which these valves and fittings are located.

The layout of wool mattresses to be adopted to obtain the specified insulation thickness are as per be on unless otherwise specified:

Thickness of Insulation (mm)	Layer			
	I	II	III	IV
25	25			
40	40	-	-	-
50	50	-	-	-
60	60	-	-	-
65	40	25	-	-
75	75	-	-	-
80	40	40	-	-
100	50	50	-	-
110	60	50	-	-
125	75	50	-	-
135	75	60	-	-
150	75	75	-	-
155	75	40	40	-
160	75	60	25	-
165	75	50	40	-

The material density of boned mineral wool used for pipe having outside diameter more than 355.6 mm is 150 kg/cubic mater 13 8183.

The material density of bonded mineral wool used for pipe having outside diameter less than or equal to 355.6 mm is 144 kg/cubic meter IS 9842.

Cladding material used is galvanised steel sheet as per IS 277 GRADE 375.

Cladding material gauge for pipe outside diameter less than or equal to 300 mm is 24 SWG.

Cladding material gauge for pipe outside diameter greater than 300 is 22 SWG.

For piping up to including 355.6 mm OD, first layer shall be pipe sections and subsequent layer shall be bonded. Wherever pipe sections are not supplied the first layer has to be wrapped using bonded wool material for piping 355.6 mm OD, bonded mattress shall be used or all the layers.

Description of type of insulation and the method of Application for Boiler Feed Pumps

1. **Type of insulation**

The pumps should be insulated with 125 mm thick flexible wire backed mineral wool mattress of 150 kg/ density.

2. **Method of Application**

The above insulation is to be applied to 2.0 mm thick flats aluminum sheeting (18 SWG) and secured by 19 mm vide aluminum retaining dips and 1/8 inch diameter aluminum pop rivets, all to be secured by 2 inch long X No.8 spacing to a 40 mm wide x 3 mm thick angle iron frame work of all welded construction bound by 40 mm PVC tape.

SECTION	TITLE	NO. OF SHEETS
A	METHOD OF APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS AND MATERIAL SPECIFICATIONS (ANNEXURE-1)	4
B	THERMAL INSULATION APPLICATION DRAWINGS	13

SECTION - A

THERMAL INSULATION FOR PIPING AND EQUIPMENTS

1.0 INTRODUCTION

In a thermal power station or process plant, thermal insulation or heat lagging of piping and equipment's carrying hot fluids is essential for hest economy and protection of operating personnel. Any pip which is at a temperature higher than it s surroundings will loose heat and the amount of heat lost will depend upon the temperature of the fluid and the thermal conductivity of the piping material/covering.

The heat lost through bare pipe increases with

a) Increase in the temperature of fluid conveyed
b) Decrease in ambient temperature and
c) Increase in wind velocity of the surroundings.

The heat so lost hast potential for work and rapidly increasing cost of fuel in the recent past has promoted to find all possible means to conserve energy. Providing proper and adequate insulation on to the piping and equipments controls heat transfer and maintains the required services temperature.

2.0 METHOD OF APPLICATION

The method of application is highly skilled job. Badly fitted/laid insulation can lead to greater hear loss, higher cold surface temperature than that estimated and frequent maintenance. Following are the important points to be considered in the application of the insulation.

2.1 Before applying insulation, it should be ensured that all instrument tappings, clamps, lugs and other connections on the surface to be insulate d have been properly installed as per relevant drawings.

2.2 All surfaces to be insulated shall be cleaned of all foreign materials such as dirt, grease, loose scale, moisture etc.

2.3 Welding of lugs, attachments, clips etc. on the surface to be insulated for supporting insulation shall not be carried out without the permission of the authorized person.

2.4 All flanged joints shall be insulated only after final tightening and testing.

2.5 The insulation shall be applied to all surfaces when they are at ambient temperature.

2.6 Where more than one layer of insulation is involved, mattresses should have staggered joints (at 60 deg) and they must be held in close contact with face of

pipes/fittings by means of binding wires / Aluminum bands / seals. Circumferential joints of multilayer insulation should also be staggered by at least 150 mm.
(Refer Drg. No. PE-4-999-169-01).

2.7 For the first layer of insulation and in case of multi layer of insulation, mattresses with hexagonal wire netting will be facing on outer side.

2.8 Insulation mattresses shall be held in place by fastening over with binding wire. Care should be taken to see that the flexible insulation mattresses are not unduly compressed. The ends of binding wire shall be lightly twisted together, bent over and pressed into the insulation. For mattresses, binding wire shall be used at intervals of 300mm.

In the addition Aluminium bands shall also be provided at 300 mm intervals for diameters greater than 500mm. (Refer Drg No. PE-4-99-169-01.)

2.9 Where junctions between bodies of different diameters occur and difference in insulation thickness is specified, the greater thickness is to be continued for a length equal to one diameter of the smaller body and then smoothly tapered to the required smaller thickness over a length equal to two diameters of the small body.

2.10 The indicated thickness of insulation are minimum requirement which should be maintained. Any change in the thickness of the insulation should be done only after prior approval of the design engineer.

2.11 The day-to-day insulation work should be covered with suitable protective materials to prevent the rain water entry, if same is expected.

2.12 The insulation shall be cut to fit the piping O.D / equipment and shall be wrapped on the piping / equipments and held in position with proper support and wires. All the joints should be properly staggered and tightly butted and adjacent edges laced (Refer Drg No. PE-4-999/169/01)

2.13 The insulation of valves and flange joints shall be enclosed in a removable jacketing so that it may be removed without disturbing the concerned equipment or piping. The thickness of insulating shall be same as that of the pip line in which these valves and fittings are located. (Refer Drg No. PE-4-999-169-07.)

2.14 Steam / Air / Gas leakages in and around the pipes to be insulated with be attended before applying insulation.

2.15 In order to provide support to Aluminium cladding, support rings made out of 20 x 3 mm M.S. flats shall be fixed at equal intervals of approximately 850 mm spacing and at every circumferential joints. These rings shall be fixed with ‘L’

type lugs and shall be fabricated from 20 x 3 mm M.S flats. To reduce that conductivity through these lugs 20 mm x 3 mm size Ceramic mill board shall be used between rings and lugs (Refer Drg No. PE-4-999-169-04 and PE-4-999-169-13).

2.16 Spacing between supporting rings for vertical piping shall be 3 mtrs. Support rings are to be provided only when the vertical height exceeds 3 mtrs. (Refer Drg No. PE-4-999-169-03-and PE-4-999-169-05).

2.17 For vertical pipes since support rings is provided ate every 3 mtrs interval, only two spacer rings shall be provided in between support rings.

2.18 Spacer rings shall be provided at both ends of elbows/bends, valves and flanges pipe having dia more than 89mm.

2.19 Wherever the end of hanger clamp assembly protrudes out of the insulation at the bottom suitable box structure are to be provided. Pipe hangers and supports should be covered in such a way that the moisture cannot penetrate into the insulation.

2.20 It is very important that sheet metal cladding should be done by a well experienced and competent fabricator. Person doing the job can alter the method of fixing of cladding sheet after consulting the concerned design engineer.

2.21 The longitudinal joint in the outer cladding sheet should always be at the lower half of the circumference for horizontal piping so that no rain water enters the insulation through the joints. (Refer Drg No. PE-4-999-169-01).

2.22 The joints of outer cladding should be staggered axially.

2.23 Inside surface of all Aluminium sheet will have two coats of Bituminous paint applied uniformly.

2.24 Aluminium sheets covering on outdoor horizontal pipes will be provided with 3 mm drain hole at the bottom center line at 6 mtr intervals.

2.25 The cladding sheet shall provides directly over the insulation/finishing cement (1F APPLICABLE). Suitable flashing and weather proofing shall be provided at all nozzles, manholes and other projections to prevent the entrance of water.

2.26 Loose wool can be taken from wool mattresses. Wherever gaps and voids have to be filled.

2.27 Sealing compound to be applied on Aluminum cladding sheet joints.

2.28 Support rings/spacer rings shall be provided if the insulation thickness > 40mm and pipe diameter > 89mm.

2.29 Equipment's name plates shall not be insulated.

2.30 Clips made out of sheet be riveted inside the box for insulation of valves and flanges to hold the insulation in box. (Refer Drg No. PE-4-999-169-06).

2.31 The insulation local to the inspection points of the critical piping shall be removable.

3.00 For Thermal Insulation Material Specification related to the project refer Annexure – 1.

IMPORTANT POINTS TO BE TAKEN CARE DURING APPLICATION

I) Binding wires for all layers of insulation will be at distance of 300mm.

ii) In addition Aluminum bands/seals also to be provided at distance of 300 mm for sizes above 500mm.

iii) Aluminum bands/seals to be provided over aluminum sheets at distance of 500mm.

iv) Ceramic mill boards to be used between all 'L' type lugs and the support rings.

v) Inside surface of Aluminum sheets to have 2 coats of bituminous paint applied uniformly.

vi) Gaps to be properly filled with loose wool taken from mattresses.

vii) End of hanger clamp assembly protruding out of insulation at the bottom should be suitably boxed with Aluminum sheets.

viii) Valves to be insulated properly in box structure as given in enclosed drawings.

ix) Multilayer longitudinal and circumferential joints should be staggered.

ANNEXURE – 1

1.0 **Thermal insulating materials shall be per the details given below:-**

1.1 **Lightly Bonded Mineral (Rock) wool Mattresses** of density 150 Kg / Cub. Mt with S.S. wire netting will be applied for the first layer of insulation where hot face temperature greater than 400 degree centigrade. For subsequent layers matters of density 150 Kg / Cub. Mtr with G.S. wire netting will be applied.

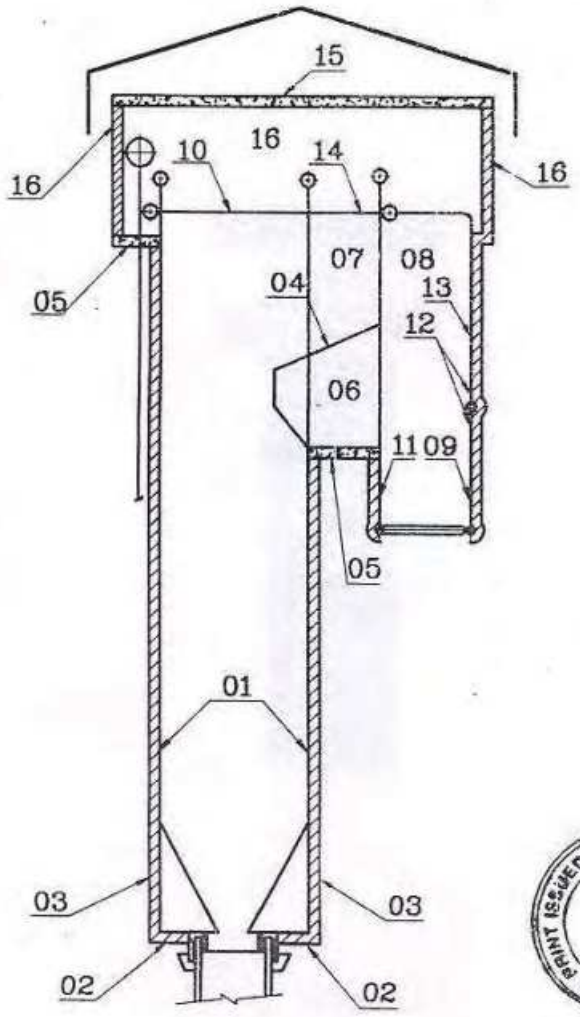
1.2 **Lightly Bonded Mineral (Rock) wool Mattresses** of density 100 Kg/Cub. Mt with G.S. wire netting will be applied for all layers of insulation for host face temperature less than and equal to 400 degree centigrade.

2.0 **Binding and lacing wires:** For insulation matters shall be of stainless steel for all insulation interface temperatures.

3.0 **Aluminum cladding sheet** shall be provided over the Mattresses ad per details given below.

18 SWG (1.22 mm thk.)	For pipes with dia over insulation above 450 MM.
20 SWG (0.91 mm thk.)	For pipes with dia over insulation above 150 MM and less than equal to 450MM.
22 SEG (0.71 mm thk.)	For pipes with dia over insulation less than equal to 150mm.

SECTION – B



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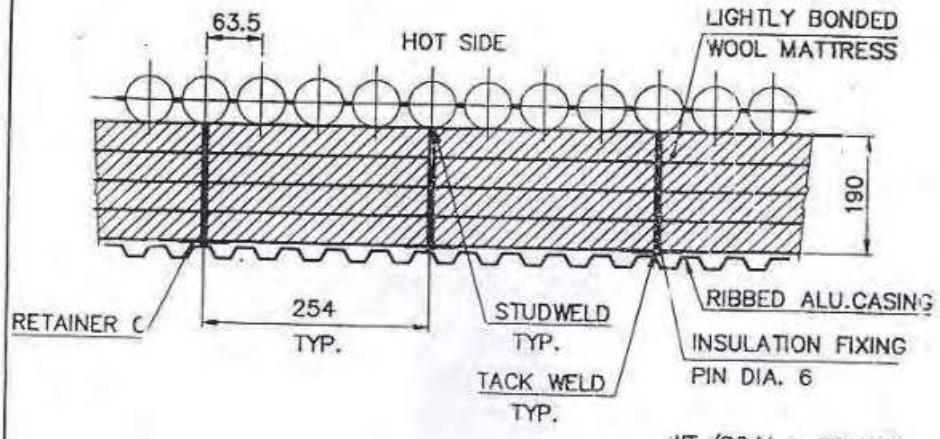
	CHD	C.G.S		4--00--215--08551	00
	APPD	C.G.S			

CTS001384-0

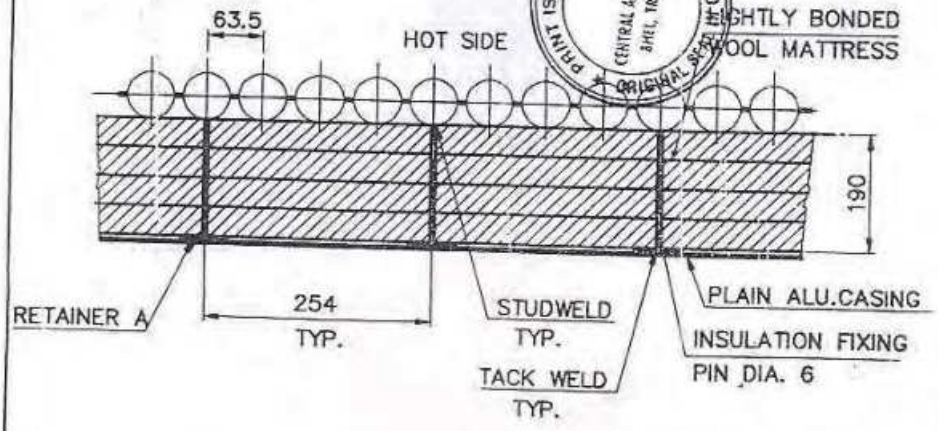
DETAIL 01

SHEET 02 OF 09



WT./SQ.M ≃ 32 KGS

DETAIL 02



WT./SQ.M. ≃ 29 KGS

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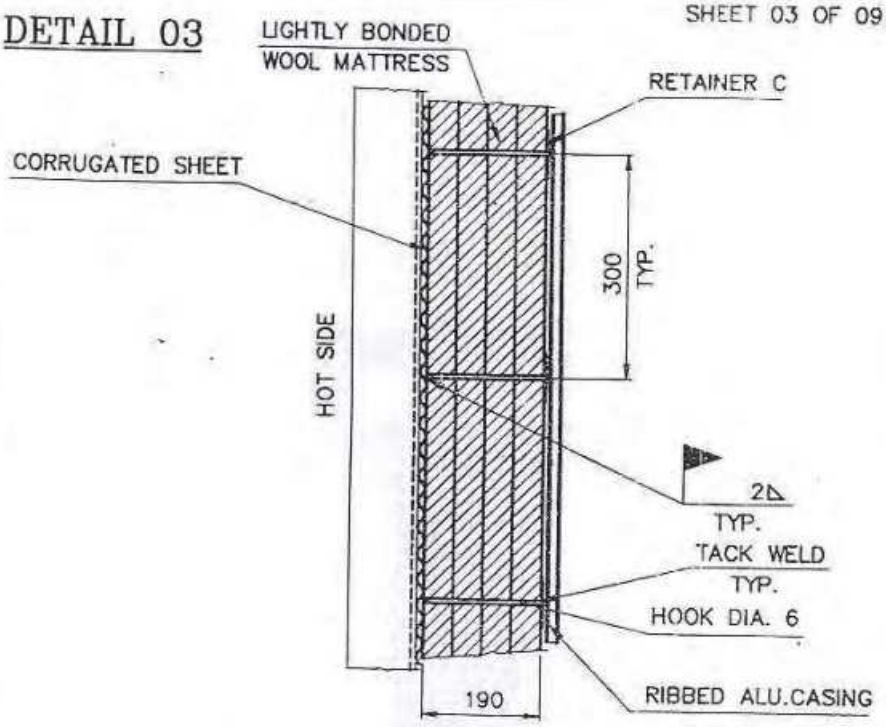
	APPD	C.G.S			

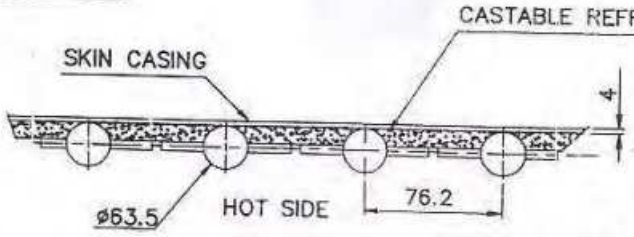
CTS001384-0

DETAIL 03



WT./SQ.M. ≃ 45 KGS

DETAIL 04

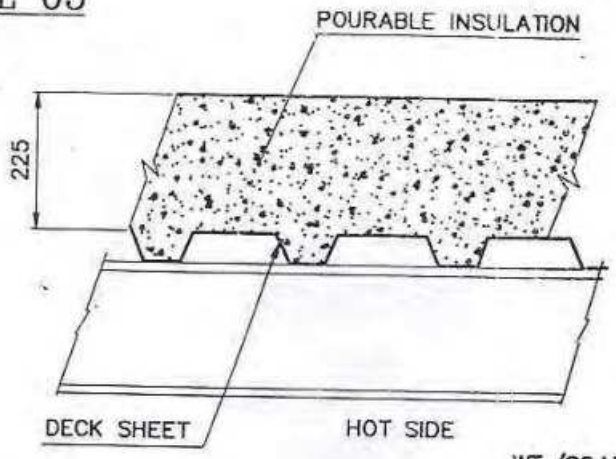


WT./SQ.M. ≃ 72 KGS

INSULATION	DRN	C.S ,		DRG.NO. 4–00–215–08553	REV.NO 00
	CHD	C.G.S			
	APPD	C.G.S			

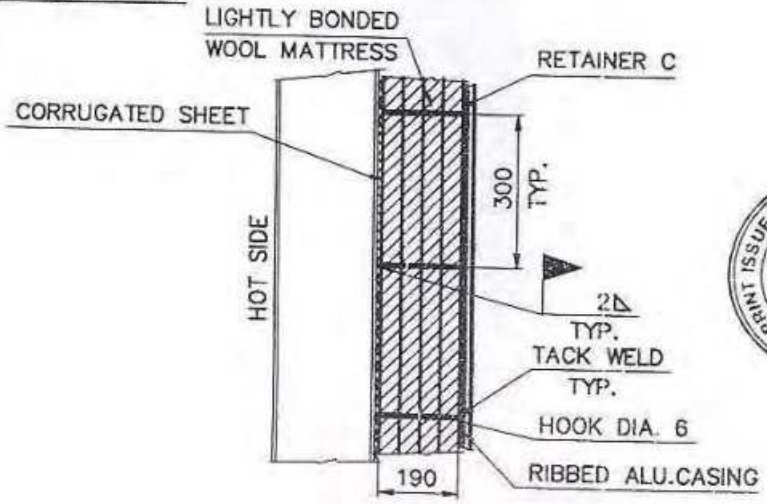
CTS001384-0

DETAIL 05



WT./SQ.M ≃ 193 KGS

DETAIL 06

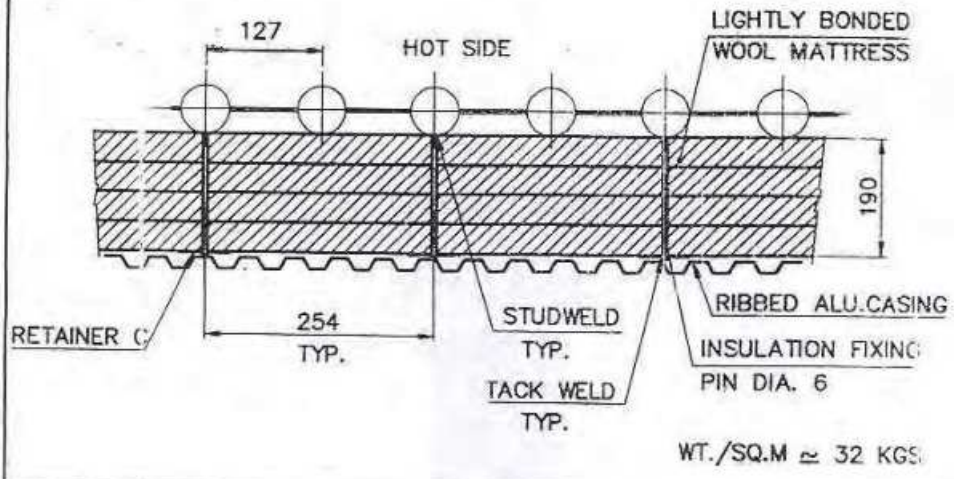


WT./SQ.M ≃ 45 KGS

INSULATION	DRN	C.S		DRG.NO. 4-00-215-08554	REV.NO. 00
	CHD	C.G.S			
	APPD	C.G.S			

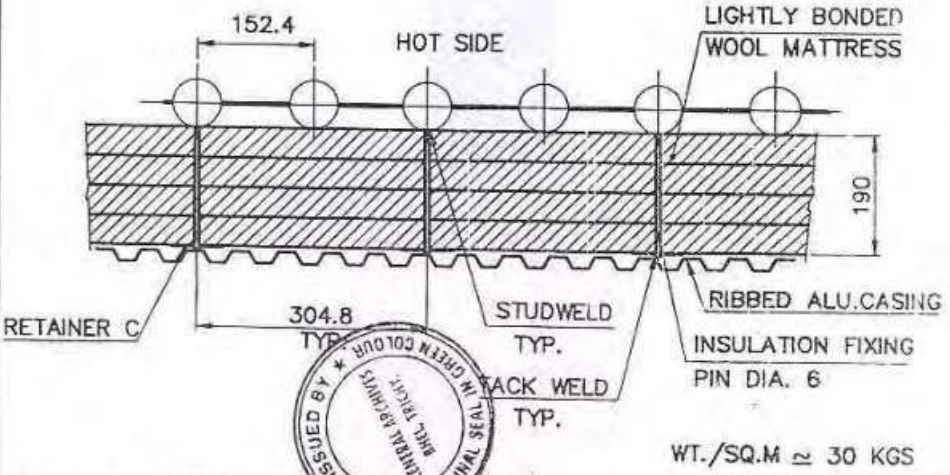
CTS001384-0

DETAIL 07



WT./SQ.M ≃ 32 KGS

DETAIL 08



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INSULATION	DRN	C.S		DRG.NO. 4-00-215-08555	REV.NO. 00
	CHD	C.G.S			
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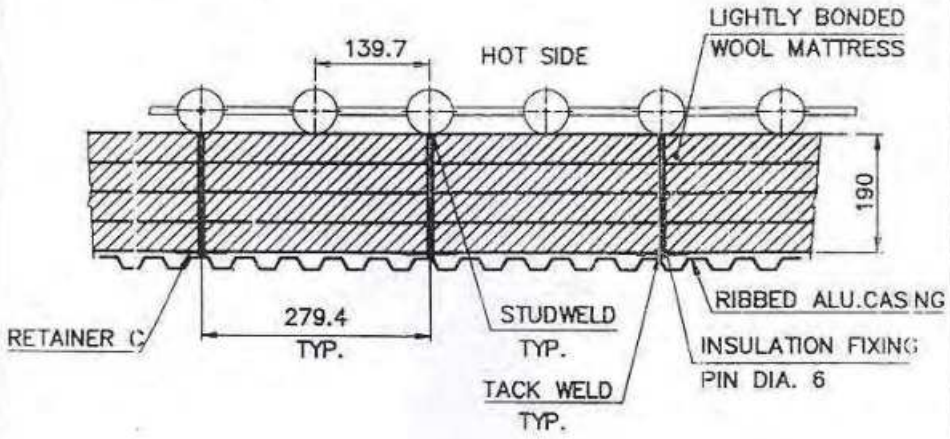
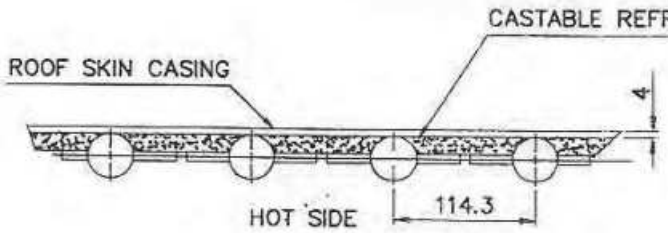
DETAIL 09



WT./SQ.M ≅ 30 KGS

DETAIL 10



WT./SQ.M. ≅ 75 KGS

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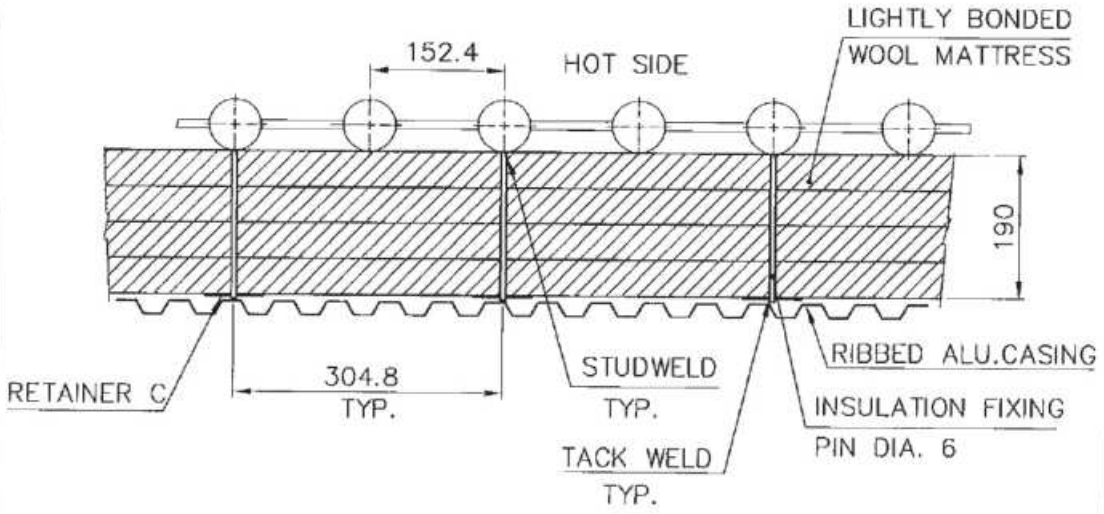
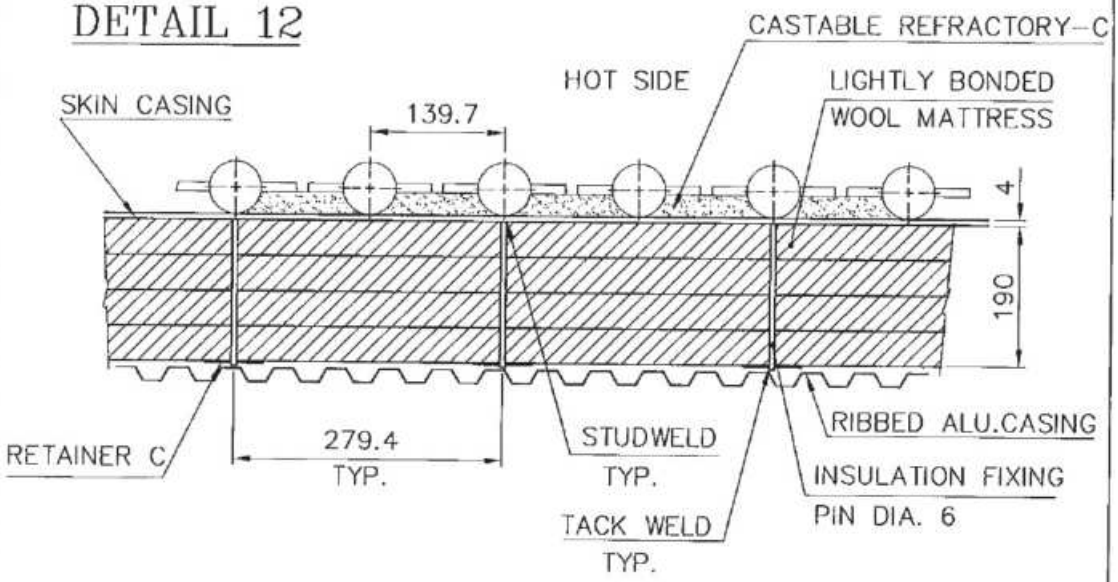
	CHD	C.G.S		4-00-215-08556	00
	APPD	C.G.S			

DETAIL 11



WT./SQ.M ≃ 30 KGS

DETAIL 12



WT./SQ.M ≃ 85 KGS

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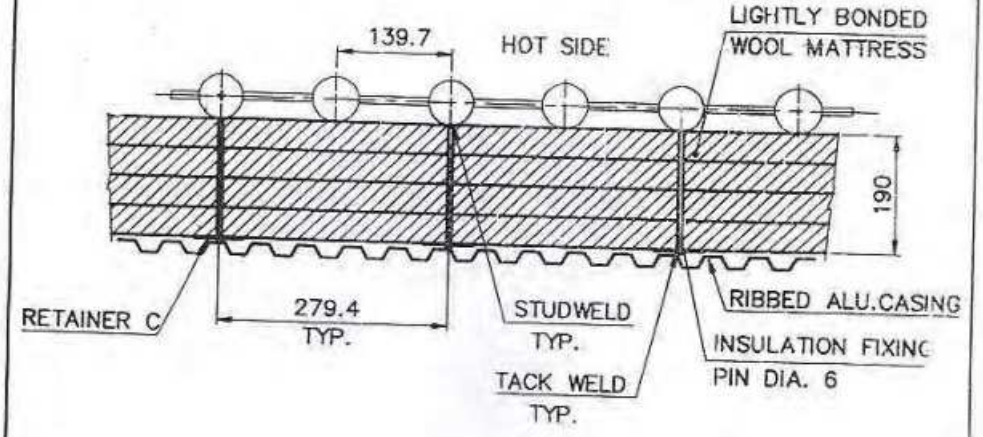
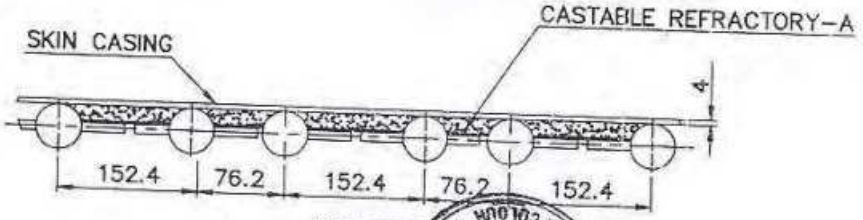
	APPD	C.G.S			

DETAIL 13



WT./SQ.M ≃ 30 KGS

DETAIL 14



WT./SQ.M. ≃ 75 KGS

INSULATION	DRN	C.S	DRC	4–00–215–08558	REVISED 00
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	APPD	C.G.S			

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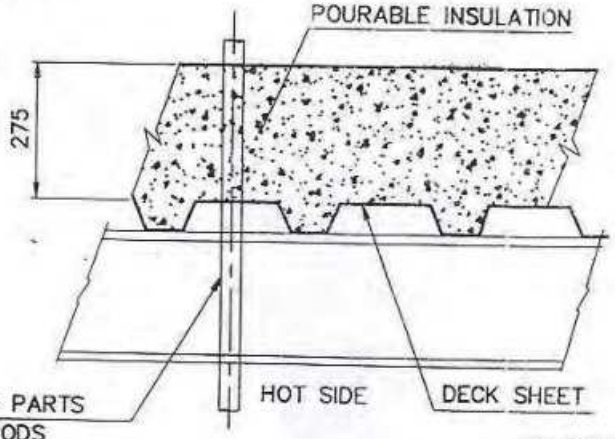
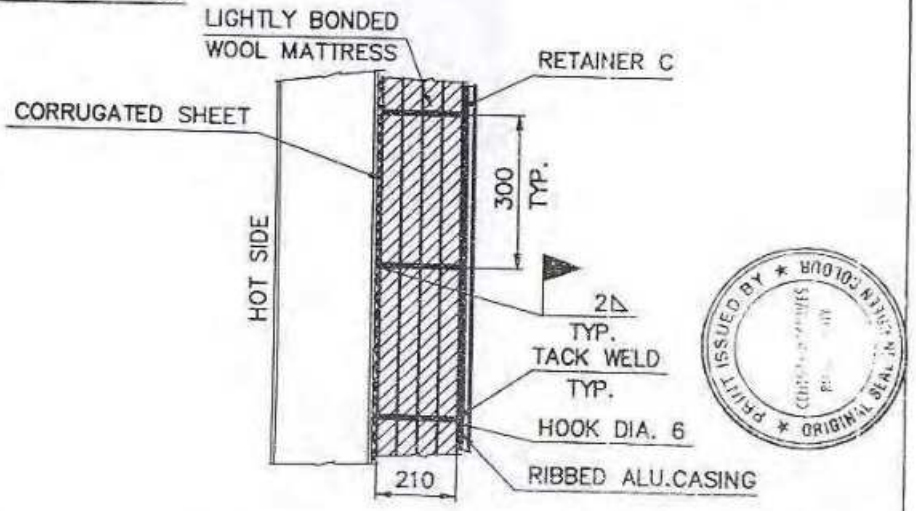
DETAIL 15



WT./SQ.M ≃ 233 KGS

DETAIL 16



WT./SQ.M ≃ 46 KGS

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	CHD	C.G.S			
	APPD	C.G.S			

CTS001284.0

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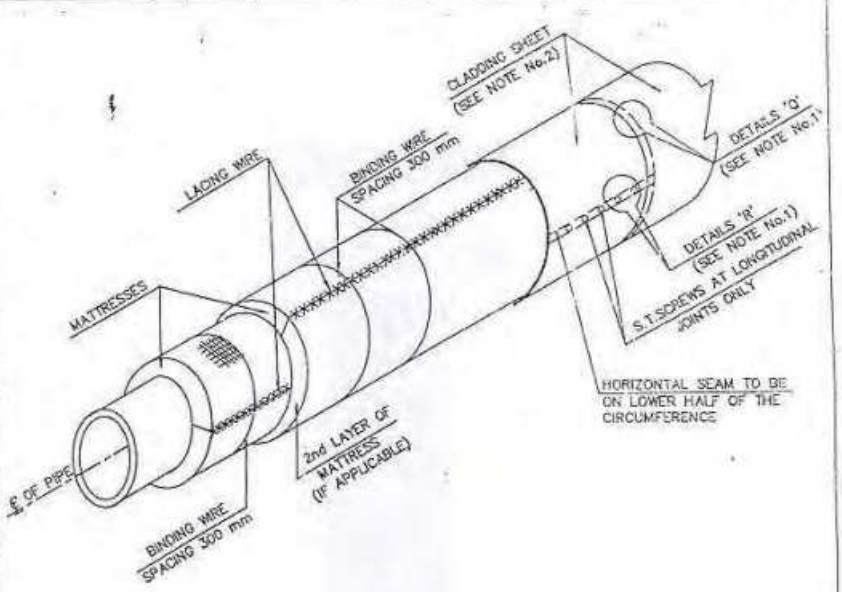
JOB NO. STANDARD



NOTES:—

1. FOR DETAILS 'Q' AND 'R' REFER DRG No. PE-4-999-169-12
2. FOR SHEET SUPPORT REFER DRG No. PE-4-999-169-04
3. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".
4. IN ADDITION TO BINDING WIRE ALUMINIUM BANDS TO BE PROVIDED FOR DIAMETERS > 500 MM.

MATERIALS REQUIRED:—

1. MATTRESSES
2. BANDS AND SEALS
3. CLADDING SHEET
4. S.T.SCREWS
5. SEALING COMPOUND
6. LACING WIRE
7. BINDING WIRE

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MF	M	N.T.S.	—	—	—

TITLE:—
INSULATION APPLICATION
(HORIZONTAL PIPES WITH MATTRESSES)

	NAME	SIGN	DATE
DRN.	S.C.S.		
DESN.	S.C.S.		9.6.97
CHD.	D.B.S.		9.6.97
APPD.	S.K.J.		11.6.97

CARD CODE	DRAWING NO.	REV.
—	PE-4-999-169-01	00

SHEET 1 OF 1

D1

A4

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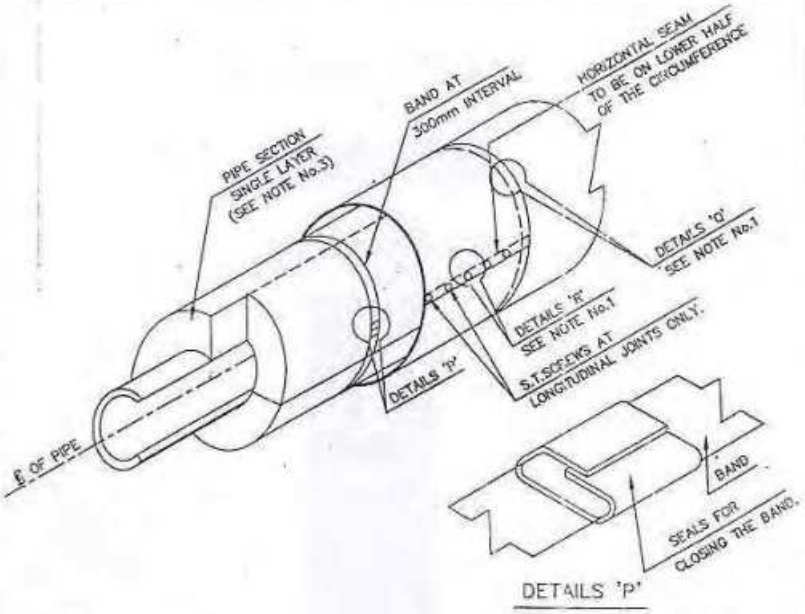
JOB NO. STANDARD



DETAILS 'P'

NOTES:–

1. FOR DETAILS 'Q' AND 'R' REFER DRG. No. PE–4–999–169–12
2. FOR CLADDING SHEET SUPPORT REFER DRG. No. PE–4–999–169–04
3. 2nd & 3rd LAYER IF ANY SHALL BE OF MATTRESSES.
4. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS"

MATERIALS REQUIRED:–

1. PIPE SECTIONS
2. BANDS AND SEAL
3. CLADDING SHEET
4. S.T. SCREWS
5. SEALING COMPOUND

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:–
INSULATION APPLICATION
(HORIZONTAL PIPES WITH PIPE SECTION)

	NAME	SIGN	DATE
DRN.	S.C.S.		
DESN.	S.C.S.		
CHD.	D.B.S.		
APPD.	S.K.J.		

CARD CODE —

DRAWING NO. PE–4–999–169–02

SHEET 1 OF 1 REV. 00

22

A4

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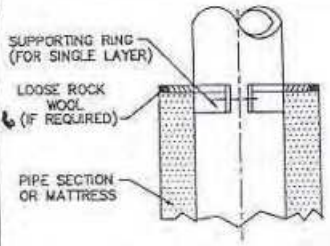
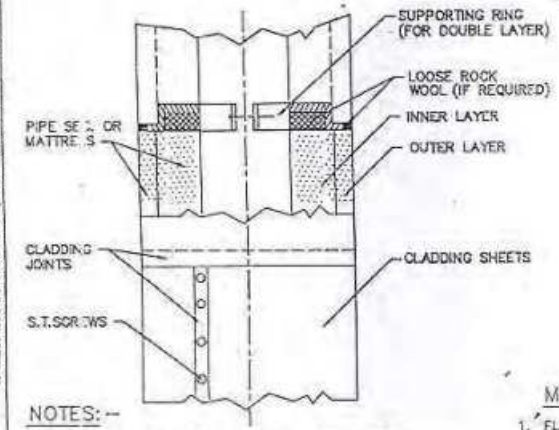
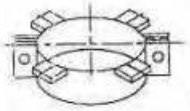
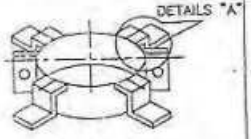


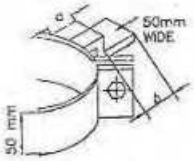




SUPPORT RING
(FOR SINGLE LAYER)



SUPPORT RING
(FOR DOUBLE LAYER)



DETAIL 'A'

NOTES:–

1. LENGTH 'a' & 'b' TO BE 12 TO 50mm LESS THAN SPECIFIED INSULATION THICKNESS.
2. SUPPORT RING TO BE FABRICATED OUT OF MS FLATS/STRAPS.
3. SUPPORT RING REQUIRED FOR PIPE 80 Nb & LARGER IF INSULATION THICKNESS LARGER THAN 30mm.
4. SUPPORT RINGS REQUIRED FOR MATTRESS ONLY.
5. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS"

MATERIALS REQUIRED:–

1. FLATS/STRAPS
2. MATTRESSES/PIPE SECTIONS
3. CLADDING SHEET
4. NUTS AND BOLTS
5. SELF TAPPING SCREWS
6. SEALING COMPOUND
7. SUPPORT RINGS (FOR MATTRESSES ONLY)

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:–
INSULATION APPLICATION
(VERTICAL PIPING)

	NAME	SIGN	DATE
DRN	S.C.S.		9.6.97
DESN	S.C.S.		9.6.97
CHD	D.B.S.		9.6.97
APPD	S.K.J.		9.6.97

CARD CODE	DRAWING NO.	REV.
—	PE-4-999-169-03	00

SHEET 1 OF 1

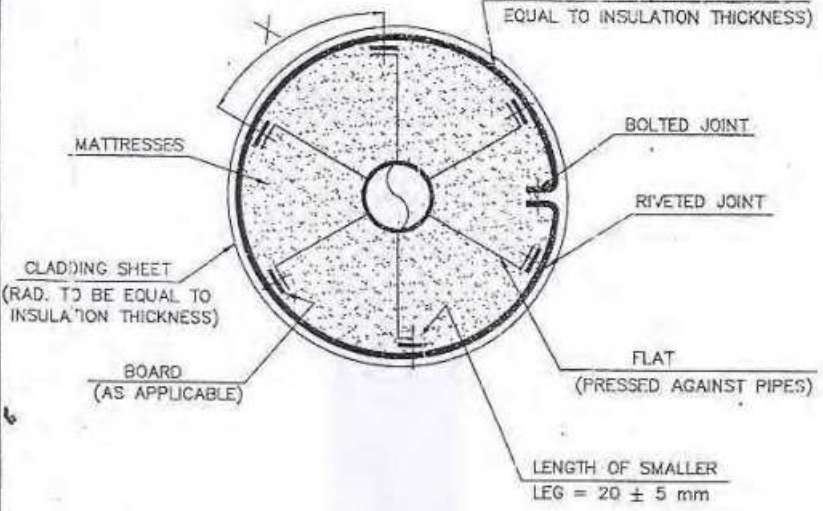
23

A4

FIRST ANGLE PROJECTION ALL DIMENSIONS ARE IN MM

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

JOB NO. STANDARD



X = 150 mm TO 200 mm SO THAT NUMBER OF WEBS IS EVEN NUMBER

MATERIAL REQUIRED:–

1. FLATS
2. RIVETS
3. BOLTS AND NUTS
4. BOARD

NOTE:–

1. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:– INSULATION APPLICATION (CLADDING SHEET SUPPORT RING FOR HOR. PIPE O.D>114.3mm & HOR. EQUIPMENTS)

	NAME	SIGN.	DATE
DRN	S.C.S.		9.6.92
DES'N	S.C.S.		9.6.92
CHD	D.B.S.		9.6.92
APP'D	S.K.J.		11.6.92

CARD CODE —

DRAWING NO. PE-4-999-169-01

SHEET 1 OF 1 REV. 00

AL-11

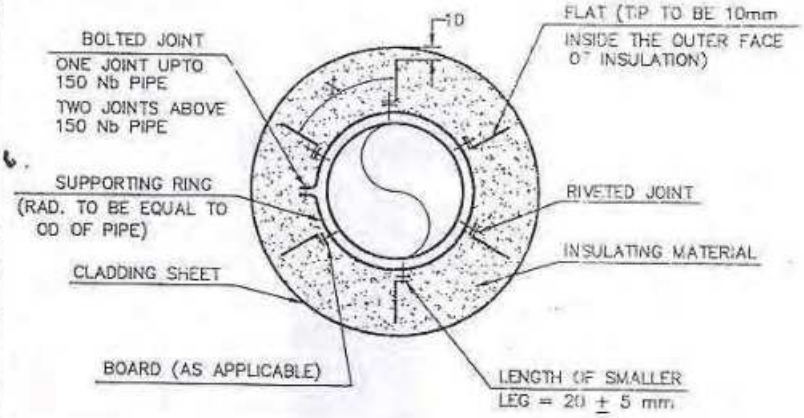
D4

A4

FIRST ANGLE PROJECTION ALL DIMENSIONS ARE IN MM

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

JOB NO. STANDARD



X = 150 mm TO 200 mm SO THAT NUMBER OF WEBS IS EVEN NUMBER

MATERIAL REQUIRED:—

1. FLATS
2. RIVETS
3. BOLTS AND NUTS
4. BOARD

NOTES:—

1. INSULATION DETAILS ON VERTICAL PIPING SHALL BE SAME AS PER FOR HORIZONTAL PIPES.
2. SPACING BETWEEN SUPPORTING RINGS SHALL BE 3 Mtrs.
3. FOR INSULATION OF END OF VERTICAL EQUIPMENTS REFER DRG. No. PE-4-989-169-09.
4. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS.
5. FLATS/RINGS OF REQUIRED LENGTH/DIA SHALL BE MADE BY ERECTING AGENCY AT SITE FROM MS FLATS/STRAPS.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KGS)	REF. TO ASSY. DRG	ITEM
M-L	M	N.T.S.	—	—	

TITLE: INSULATION APPLICATION (INSULATION SUPPORT RING FOR VERTICAL PIPING & VERTICAL EQUIPMENTS)

	NAME	SIGN	DATE
DRN	S.C.S.		9.6.97
DESN	S.C.S.		9.6.97
CHD	D.B.S.		11.6.97
APPD	S.K.J.		11.6.97

CARD CODE

DRAWING NO. PE-4-989-169-05

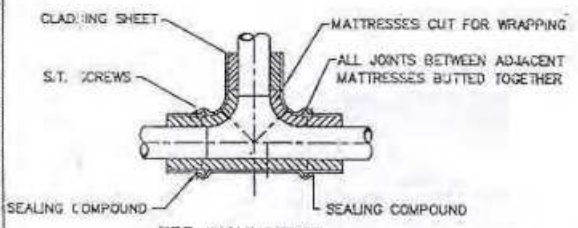
SHEET 1 OF 1 REV. 00

AL-222

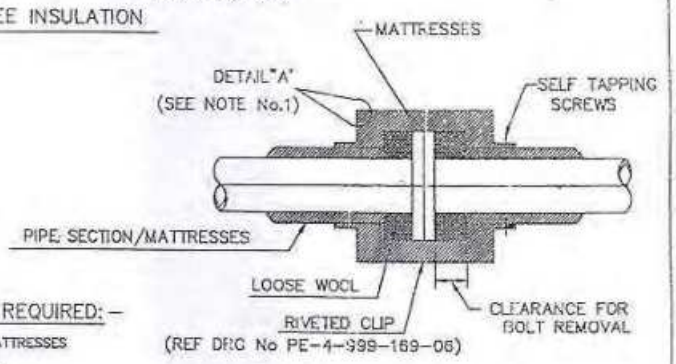
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED
6					

JOB NO. STANDARD



TEE INSULATION



(REF DRG No PE-4-999-169-06)

FLANGE JOINT INSULATION

MATERIALS REQUIRED:-

1. PIPE SECTION/MATTRESSES
2. STITCHING WIRE.
3. CLADDING SHEET
4. BINDING WIRE
5. SELF TAPPING SCREWS
6. SEALING COMPOUND

NOTE:-

1. FOR DETAIL "A" REFER DRG No. PE-4-999-169-10
2. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:- INSULATION APPLICATION (TEES AND FLANGE JOINTS)

	NAME	SIGN	DATE
DRN.	S.C.S.		
DESN	S.C.S.		9.6.92
CHD	D.B.S.		9.6.92
APPD	S.K.J.		9.6.92

CARD CODE —

DRAWING NO. PE-4-999-169-07

SHEET 1 OF 1 REV. 00

L-6

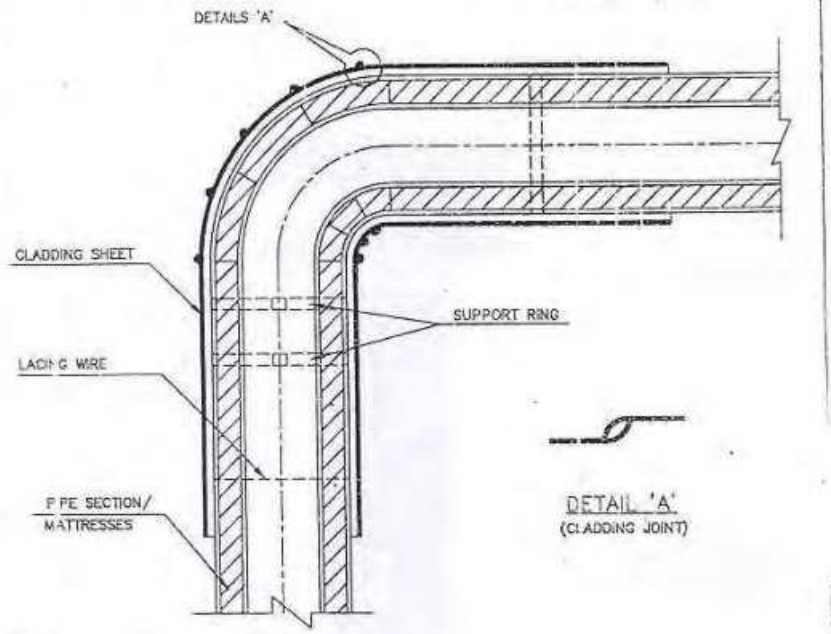
27

A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

JOB NO. STANDARD



DETAIL 'A'
(CLADDING JOINT)

MATERIALS REQUIRED:-

1. MATTRESSES
2. PIPE SECTION (IF APPLICABLE)
3. LACING WIRE
4. CLADDING SHEET
5. BINDING WIRE
6. SELF TAPPING SCREWS
7. SEALING COMPOUND

NOTES:-

1. TWO SELF TAPPING SCREWS TO BE USED FOR EACH SHEET SEGMENT AT INNER SIDE OF BEND.
2. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:-
INSULATION APPLICATION
(ELBOWS & BENDS SIZE EXCEEDING 150mm)

	NAME	SIGN	DATE
DRN	S.C.S.		9.6.97
DESN	S.C.S.		9.6.97
CHD	D.B.S.		9.6.97
APPD	S.K.J.		11.6.97

CARD CODE —

DRAWING NO. PE-4-999-169-08

SHEET 1 OF 1 REV. 00

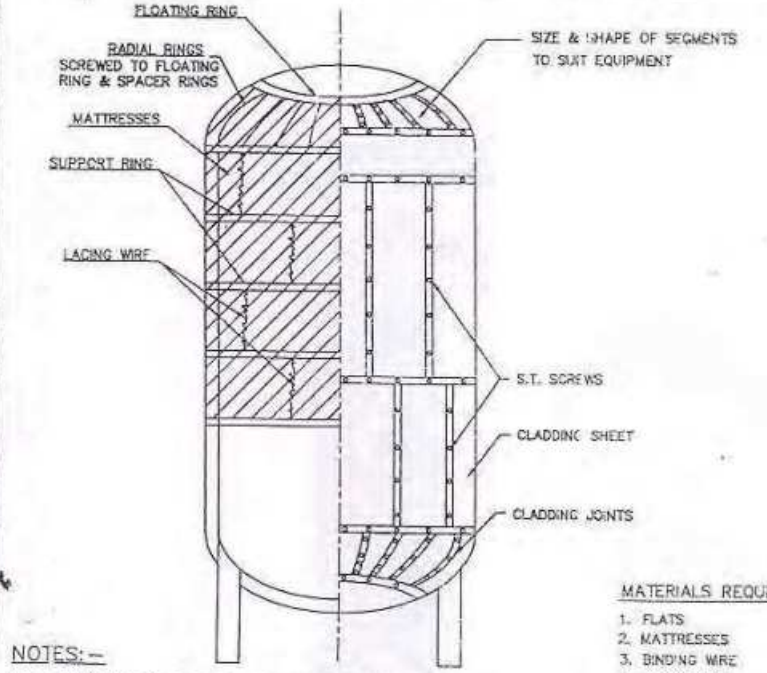
D8

A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED	CHECKED	REV.	DATE	ALTERED	CHECKED

JOB NO. STANDARD



MATERIALS REQUIRED:-

1. FLATS
2. MATTRESSES
3. BINDING WIRE
4. LACING WIRE
5. CLADDING SHEET
6. GLASS FABRIC/BOARDS (AS APPLICABLE)
7. RIVETS
8. SELF TAPPING SCREWS
9. SEALING COMPOUND
10. STRAPS/BANDS

NOTES:-

1. STRAPS/BANDS CUT FROM SHEET, WITH SEAL SHALL BE USED OVER FINAL LAYER AT 300mm INTERVALS.
2. INSULATION OF HOR. EQPTS. SHALL BE AS FOR HOR. PIPES. REFER DRG No. PE-4-999-169-01 & PE-4-999-169-02
3. FOR CLADDING SHEET SUPPORT REF. DRG. No. PE-4-999-169-04.
4. FOR INSULATION SUPPORT REF. DRG. No. PE-4-999-169-05.
5. INSULATION OF ENDS OF HOR. EQPTS. SHALL BE SIMILAR TO THIS DRG.
6. WELDING TO EQUIPMENT NOT PERMITTED.
7. FOR GEN. INF. ON APPLICATION OF INSULATION REF. DOC. "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING & EQPTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:-
INSULATION APPLICATION
(EQUIPMENT)

	NAME	SIGN	DATE
DRN.	S.C.S.		
DESN.	S.C.S.		9.6.97
CHD.	D.B.S.		9.6.97
APPD.	S.K.J.		11.6.97

CARD CODE —

DRAWING NO. PE-4-999-169-09

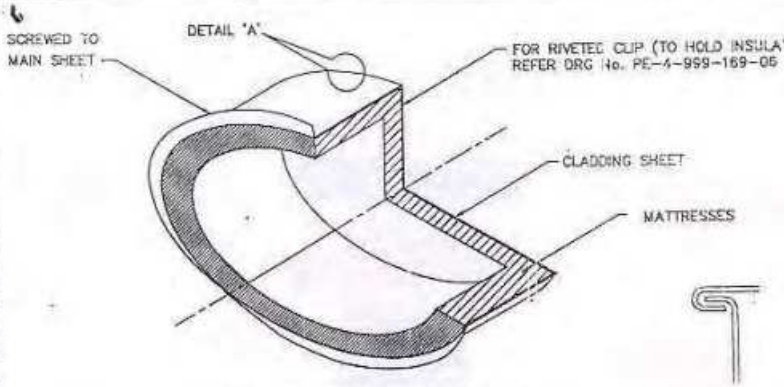
SHEET 1 OF 1 REV. 00

D9

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

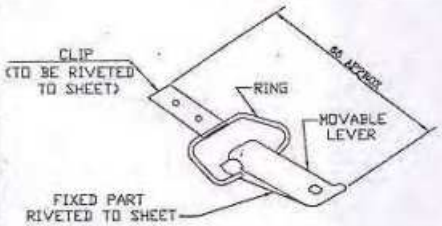
REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

JOB NO. STANDARD



INSULATING COVER FOR MAN HOLE

DETAILS 'A'
(LOCKING OF SHEETS)



G.I. SHACKLE LOCK CONNECTING BUCKLE

DETAILS 'X'

MATERIAL REQUIRED:-
(MAN HOLE)

1. MATTRESSES
2. CLADDING SHEET
3. SELF TAPPING SCREWS
4. RIVETS
5. CLIPS (TO BE MADE AT SITE)
6. SEALING COMPOUND

MATERIAL REQUIRED:-
(FOR SHACKLE LOCK)

1. CLIP (MADE FROM CLADDING SHT.)
2. RIVETS

NOTES:-

1. FOR GENERAL INFORMATION ON APPLICATION INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:- INSULATION APPLICATION
(FABRICATED HEAT INSULATING COVER FOR MAN-HOLE)

	NAME	SIGN	DATE
DRN	S.C.S.		9.6.97
DESN	S.C.S.		9.6.97
CHD	D.B.S.		9.6.97
APPD	S.K.J.		9.6.97

CARD CODE	DRAWING NO.	REV.
—	PE-4-999-169-10	00

SHEET 1 OF 1

DLO

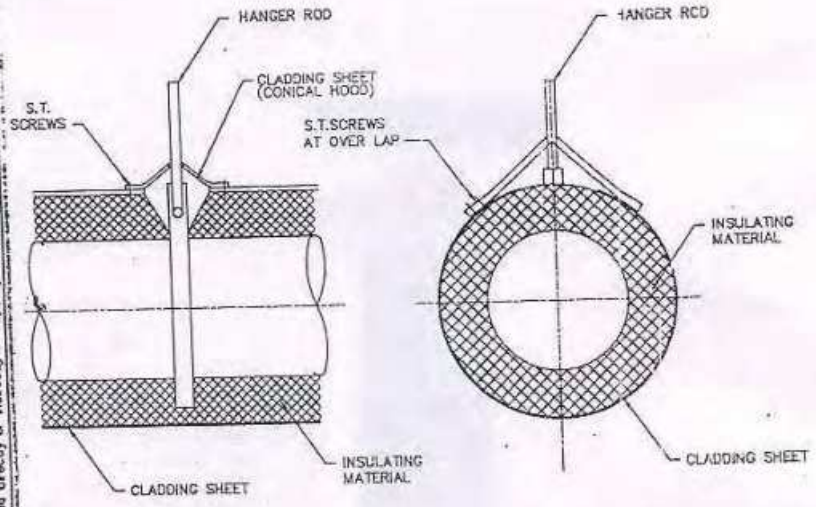
A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED	REV.	DATE	ALTERED
01	10.5.88	CHECKED			CHECKED

NOTE 2 ADDED.

JOB NO. STANDARD



MATERIALS REQUIRED:-

1. MATTRESSES/PIPE SECTIONS
2. CLADDING SHEET
3. SELF TAPPING SCREWS
4. SEALING COMPOUND

NOTES:-

1. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT 'INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".
2. WHEREVER THE END OF CLAMP PROTRUDES OUT OF INSULATION AT THE BOTTOM, SUITABLE BOX STRUCTURE TO BE PROVIDED MADE OF ALUMINIUM.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. 'C' ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

	NAME	SIGN	DATE
DRN	S.C.S.		
DESN	S.C.S.		
CHD	D.B.S.		
APPD	S.K.J.		

TITLE:- INSULATION APPLICATION (METAL FLASHING ON HANGER ROD PROTRUSION)

CARD CODE —

DRAWING NO. PR-4-999-169-11

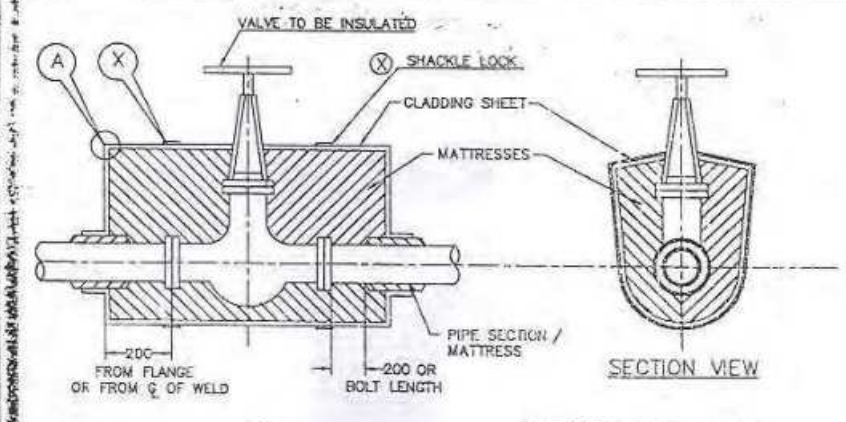
SHEET 1 OF 1 REV. 00

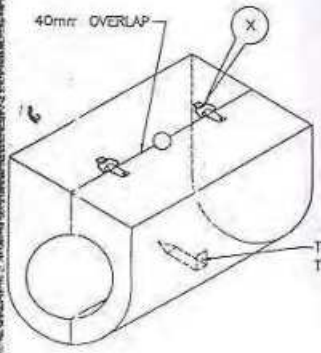
DLL

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED
1					

JOB NO. STANDARD





ASSEMBLED VALVE BOX

MATERIALS REQUIRED:–

1. MATTRESSES
2. CUPS OF SHACKLE LOCKS FABRICATED OUT OF CLADDING SHEET
3. CLADDING SHEET
4. RIVETS
5. SHACKLE LOCKS CONNECTING BUCKLES. (REF. DRG. PE-4-999-169-10)
6. SELF TAPPING SCREWS
7. SEALING COMPOUND.

NOTE:–

1. FOR DETAIL A & X REFER DRG No. PE-4-999-169-10
2. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S	—	—	—

TITLE:–
INSULATION APPLICATION
(VALVES)

	NAME	SIGN	DATE
DRN	S.C.S.		5.6.97
DESN	S.C.S.		5.6.97
CHD	D.B.S.		6.6.97
APPD	S.K.J.		11.6.97

CARD CODE —

DRAWING NO. PE-4-999-169-06

SHEET 1 OF 1 REV. 00

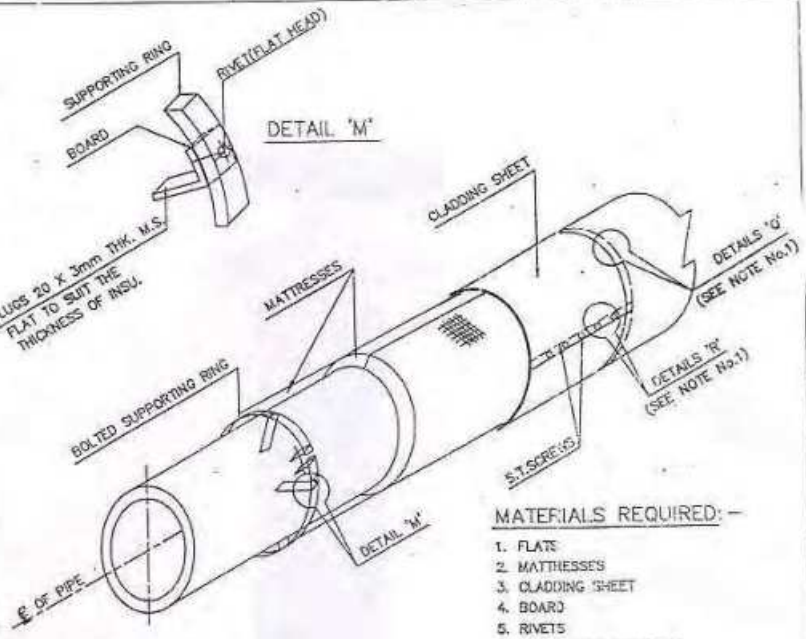
D6

A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

JOB NO. STANDARD



DETAILS OF LUGS:

PIPE Nb(mm)	No. OF LUGS
1. 33 – 150	4
2. 200 – 300	6
3. 350 – 450	8
4. 500 – 600	10

MATERIALS REQUIRED:–

1. FLATS
2. MATTRESSES
3. CLADDING SHEET
4. BOARD
5. RIVETS
6. SELF TAPPING SCREWS
7. SEALING COMPOUND
8. BOLTS & NUTS.

NOTES:–

1. FOR DETAILS 'Q' AND 'R' REFER DRG No. PE-4-999-169-12
2. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING & EQUIPMENTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S	—	—	—

	NAME	SIGN	DATE
DRN	S.C.S.		
DES'D	S.C.S.		
CHD	D.B.S.		
APPD	S.K.J.		

TITLE:–
INSULATION APPLICATION
(SUPPORT RING FOR PIPE O.D.>168.3mm)

CARD CODE	DRAWING NO.	REV.
—	PE-4-999-169-13	00

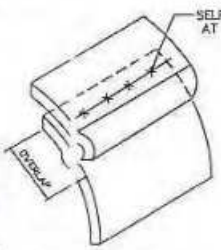
SHEET 1 OF 1

213

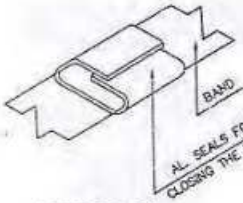
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED / CHECKED	REV.	DATE	ALTERED / CHECKED

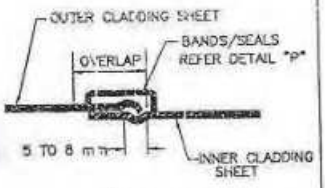
JOB NO. STANDARD



**DETAIL 'R'
(LONGITUDINAL JOINT)



DETAIL 'P'



*DETAIL 'Q'
(CIRCUMFERENCIAL JOINT)

**

1. JOINTS TO BE MADE AT 45° FROM BOTTOM
2. JOINTS TO BE ON LOWER HALF OF THE CURCUMFERENCE FOR HORIZONTAL PIPES AND EQUIPMENTS.
3. SEALING COMPOUND WILL BE USED ON ALL LONGITUDINAL JOINTS.

*

1. TELESCOPIC SLIDING JOINTS SHALL HAVE 5 TO 8mm SPACING.
2. THE OVERLAPING OF TELESCOPIC JOINTS SHALL BE AS BELOW:—

CIRCUMFERENCE OF SHEET(mm)	LONGITUDINAL OVERLAP(mm)
≤ 400	30
401 – 500	40
> 500	50

3. TELESCOPIC JOINT SHALL BE PLAIN.

NOTE:—

1. ALL JOINTS NEAR OIL PIPING TO HAVE SEALING COMPOUND.
2. FOR GENERAL INFORMATION ON APPLICATION OF INSULATION REFER DOCUMENT "INSTRUCTIONS FOR APPLICATION OF THERMAL INSULATION FOR PIPING AND EQUIPMENTS".

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECTS ENGINEERING MANAGEMENT
NEW DELHI

DEPT.	CODE	SCALE	WEIGHT (KG.)	REF. TO ASSY. DRG	ITEM
MPL	M	N.T.S.	—	—	—

TITLE:— INSULATION APPLICATION (DETAILS OF "P", "Q" AND "R")

	NAME	SIGN	DATE
DRN	S.C.S.		9.4.97
DESN	S.C.S.		9.4.97
CHD	D.U.S.		11.4.97
APPD	S.K.J.		

CARD CODE —

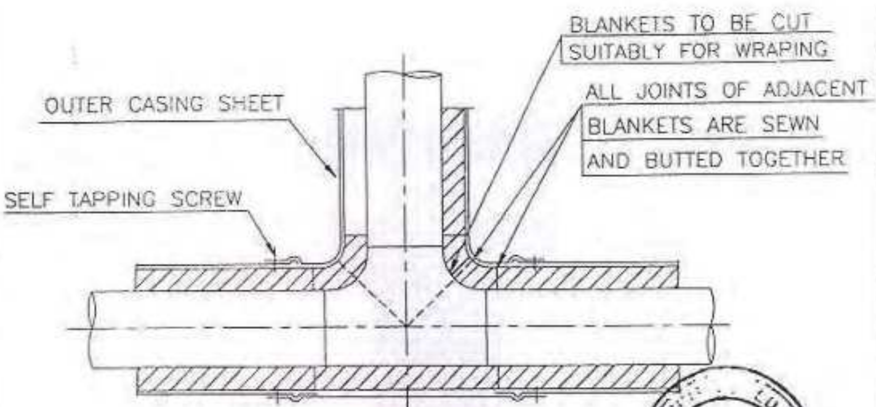
DRAWING NO. PE-4-999-169-12

SHEET 1 OF 1 REV. 00

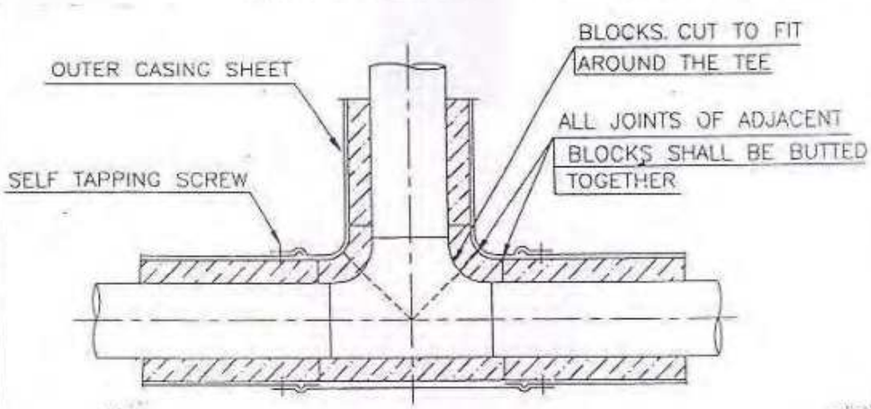
D/2

A4

TEE INSULATION



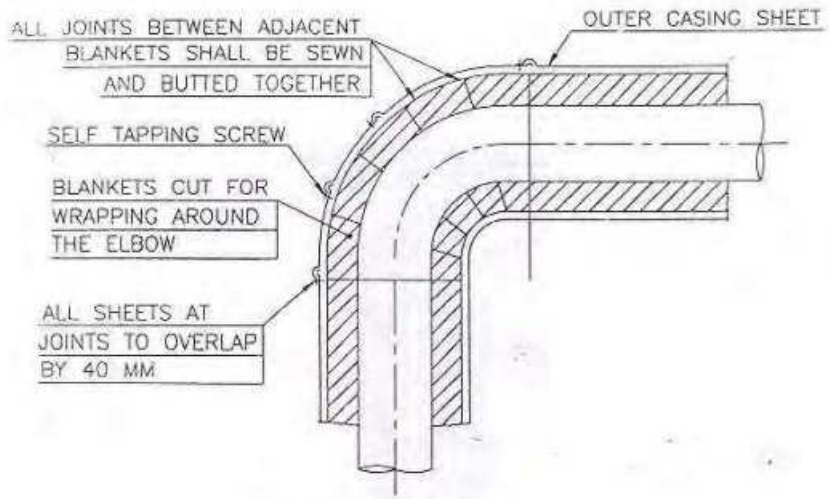
TEE INSULATION
(WITH WOOL MATTRESS)



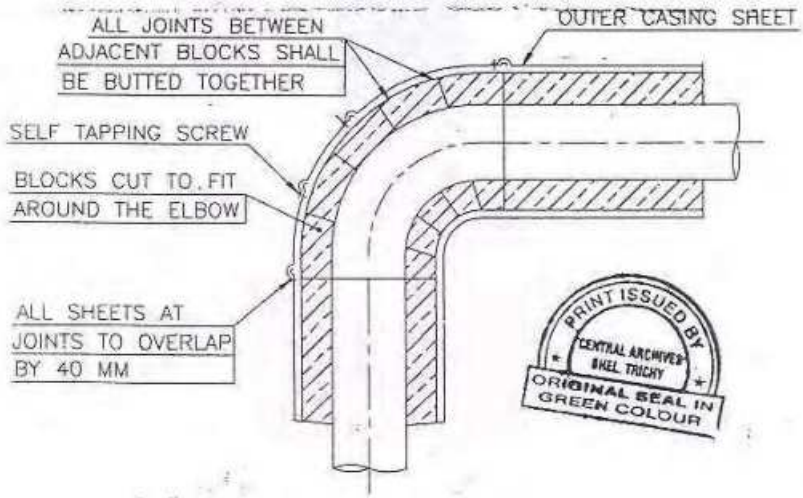
TEE INSULATION
(WITH CALCIUM SILICATE)

			SIGNATURE	DATE	DRAWING NO :	REV.
INSULATION	PREPARED	A.R.JOTHIGURUNATHAN		04.12.03	4-00-235-08546	
	CHECKED	K.KALIRAJAN				
	APPROVED	C.GUNASEKARAN				

ELBOW INSULATION



WITH WOOL MATTRESS

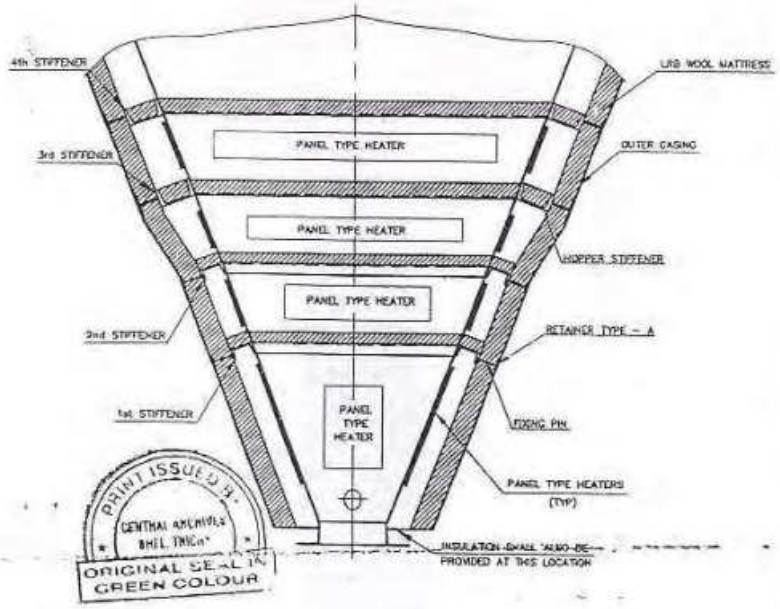


WITH CALCIUM SILICATE

INSULATION	PREPARED	A.RAJKUMARGURUNATHAN		DATE 04.12.03	DRAWING NO : 4-00-235-08547	REV
	CHECKED	K.KALIRAJAN				
	APPROVED	C.GUNASEKARAN				

REV	DATE	ALTERED : A.R.J
01	01.10.05	CHD & APPD : C.G.S
DRAWING ALTERED		

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



NOTE:

01. THE INSULATION SHOWN IS FOR TYPICAL PANEL HEATER HOPPERRS.THIS IS TO BE FOLLOWED WHERE EVER PANEL TYPE HEATERS ARE ENVISAGED.

02. INSULATION FIXING PINS AND RETAINERS SHOULD NOT FOUL WITH THE PANEL HEATERS.

03. FOR OTHER INSULATION DETAILS, REFER DRG. 1-00-235-06654.

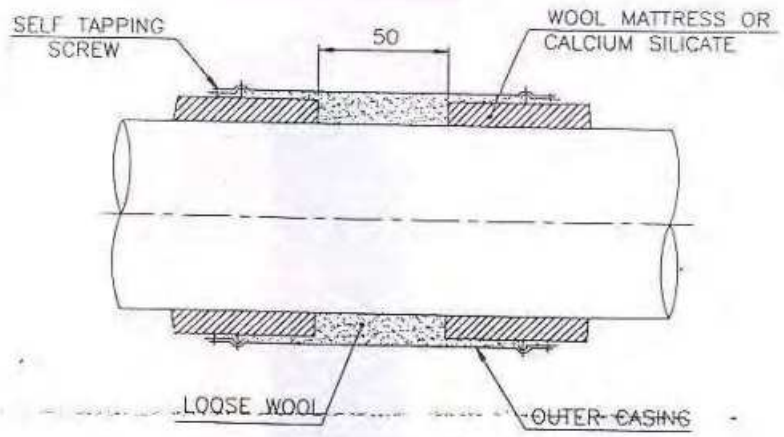
		NAME	SIGNATURE	DATE
Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI – 620014	DRN	A.R.J		20.09.05
355-056	CHD	C.G.S		22.09.05
	APPD	C.G.S		22.09.05

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
L&I					
CODE 123					

TITLE: HOPPER INSULATION DETAIL FOR PANEL TYPE HEATERS

DRAWING NO : 4-00-235-08702 REV 01

EXPANSION JOINT FOR PIPES

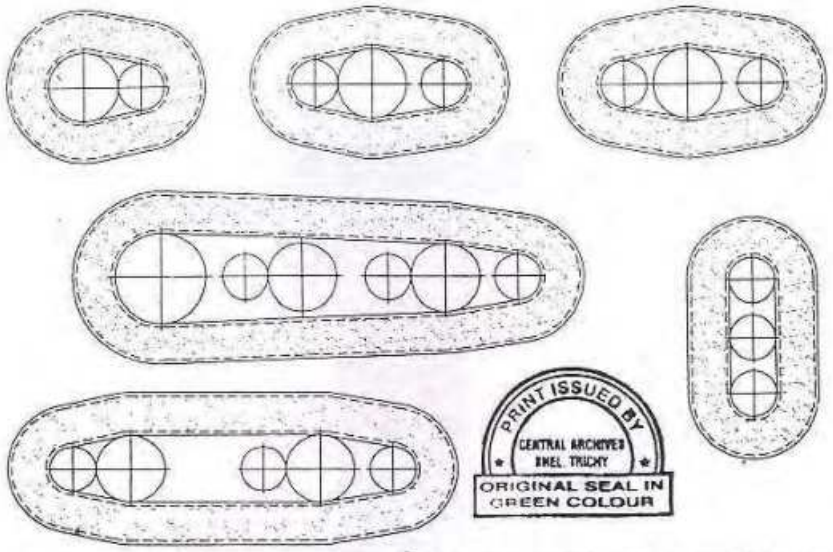


NOTE:-

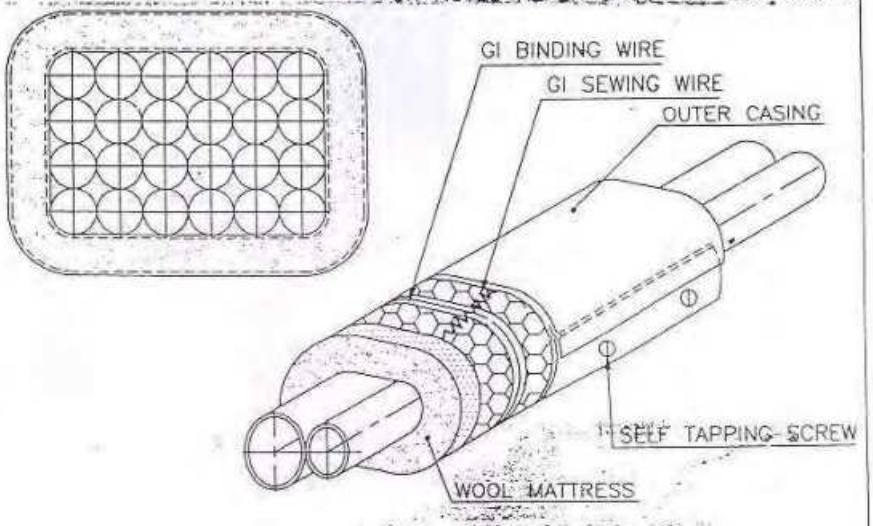
1. THIS ARRANGEMENT IS APPLICABLE FOR BOTH HORIZONTAL AND VERTICAL PIPE LINES,AT EVERY 5 METRES.
2. WHEN THE OPERATING TEMPERATURE IS BELOW 230°C,EXPANSION JOINTS ARE NOT REQUIRED.
3. FOR PIPES,WHERE THE FLOW IS ONLY INTERMITTANT,EXPANSION JOINTS ARE NOT REQUIRED.

INSULATION	PREPARED	A.RJOTHI GURUNATHAN		DRAWING NO : 4-00-235-08549	REV
	CHECKED	K.KALIRAJAN			
	APPROVED	C.GUNASEKARAN			

BUNCH INSULATION

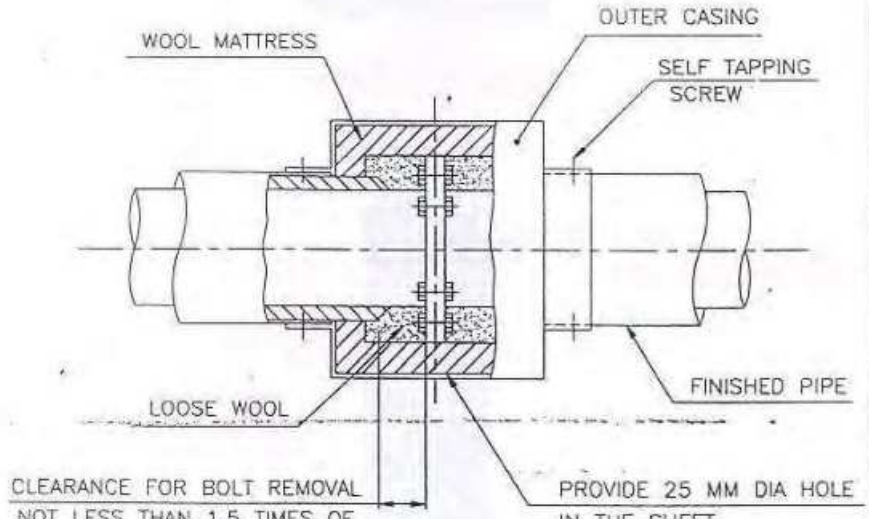


FOR NOTES REFER DRG 4-00-235-08541



INSULATION	PREPARED	A.R.JOTHIKUMARAN	SIGNATURE	DATE 04.12.03	DRAWING NO 4-00-235-08550	REV
	CHECKED	K.KALIRAJAN				
	APPROVED	C.GUNASEKARAN				

FLANGE INSULATION



NOTE:-

1. WHEREEVER THE FLANGES ARE ENVISAGED FOR DISMANTLING, THIS TYPICAL ARRANGEMENT IS TO BE FOLLOWED.

INSULATION	PREPARED	A.R.JOTHI GURUNATHAN		05.12.03	DRAWING NO. : 4-00-235-08548	REV
	CHECKED	K.KALIRAJAN				
	APPROVED	C.GUNASEKARAN				

Annexure-19: Plot Plan for Sipat 1x800 MW project

Annexure 19 Plot Plan for Sipat 1x800 MW project