



BHARAT HEAVY ELECTRICALS LIMITED
 PIPING CENTRE, CHENNAI-17
 QUALITY ASSURANCE & CONTROL DEPT.

PAINTING SCHEME FOR LP PIPING
 (CW / ACW / ECW / Plant water, Air Piping, etc.,)
PROJECT NAME :- NORTH KARANPURA STPP - (3X 660 MW) - EPC PACKAGE
BHEL CUSTOMER Nos : 7245, 7246, 7247 & 7248(AUX. BOILER)

QPN No: 7245:QPC:12
 REV. NO: 00
 Dt : 24.11.14

Sl. NO	PGMA / Description	Surface Preparation & Surface Profile	Primer coat			Intermediate coat			Finish coat			REMARKS	
			Primer	No of coats	Paint	Shade	No of coats	Paint	Shade	No of coats	Shade		Total DFT Microns (Min.)
1	(a) Internal Surface - CW Pipe (for pipe dia - 1000 mm and above)	3	4	5	6	7	8	9	10	11	12	13	
1	(a) Internal Surface - CW 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)		
1	(b) Holiday test (Refer Note 3)	Holiday testing by low voltage (75 Volts Min.) wet sponge Holiday detector or by High voltage (Voltage 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 CW --Buried Piping / Encased in concrete (For pipe dia- 1000 mm. and above) (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 (over ground piping) of CW, ACW. (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)	** (2 coat at shop + 1 coat at site)	
4	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)	** (2 coat at shop + 1 coat at site)	
5	Galvanised and Stainless steel Piping	No pair											

(Signature)
 ID No: 2014-12-10
 15.06.13 IST
 Reason: CAT

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. Witness by BHEL / BHEL nominated inspection agency.

PREPARED BY: *(Signature)*
 VIVEKANANDA YELLU Sr. Engr / QA

APPROVED BY: *(Signature)*
 M.S. MURALIDHARAN MGR / QA

For NTPC use
 NTPC Doc.ref: 4410-001-102-PVM-H-025B



BHARAT HEAVY ELECTRICALS LIMITED
 PIPING CENTRE, CHENNAI- 17
 QUALITY ASSURANCE & CONTROL DEPT.

PAINTING SCHEME FOR LP PIPING

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

PROJECT NAME : - WANAKBORI EXTN. Unit #8 - 1X800 MW

BHEL CUSTOMER Nos : 7266, 7267(Aux.Boiler) & 7274(Outside TG Hall).

QPNo: 7266:QPC:12

REV.NO: 01

Dt : 02.11.2015

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Total DFT Microns (Min.)

REMARKS

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



BHARAT HEAVY ELECTRICALS LIMITED
 PIPING CENTRE, CHENNAI-17
 QUALITY ASSURANCE & CONTROL DEPT.

PAINTING SCHEME FOR LP PIPING
 (CW / ACW / ECW / Plant water, Air Piping, etc.....)
 PROJECT NAME :- KOTHAGUDEM TPS STAGE-VII Unit #12 - 1X800 MW
 BHEL CUSTOMER Nos : 7268, 7275(Aux.Boiler) & 7278(Outside TG Hall).

QPNo: 7268:QPC:12
 REV.NO: 01
 Dt : 04.11.2015

Sl. NO	P/QMA / Description	Surface Preparation & Surface Profile	Primer coat			Intermediate coat			Finish coat			REMARKS
			Primer	No of coats	Paint	No of coats	Shade	Paint	No of coats	Shade	Total DFT Microns (Min.)	
1	(a) Internal Surface - CW Pipe (for pipe dia - 1000 mm and above)	Blast Cleaning SSPC-SP-10 SA 2 1/2 (Refer Note 1)	4	5	6	7	8	9	10	11	12	13
1	(b) Holiday test (Refer Note 3)	Holiday testing by low voltage (75 Volts Min.) wet sponge Holiday detector or by High voltage (Voltage 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 CW - Buried Piping / Encased in concrete (For pipe dia- 1000 mm and above) (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	External surface of CW pipe shall be RCC encased. Revn:01
3	External Surface (over ground piping) of CW/ACW. (For all diameters)	SSPC-SP3 / Power Tool Cleaning	Red Oxide- Zinc Phosphate (Alkyd base to IS: 12744)	2 (25 Microns per coat)							3 ** (35 microns per coat) (2 at shop + 1 at site)	** 1 coat of DFT- 35 microns finish coat at site
4	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)							3 ** (35 microns per coat) (2 at shop + 1 at site)	** 1 coat of DFT- 35 microns finish coat at site
5	Galvanised and Stainless steel Piping											No painting

NOTES:
 1. Blast cleaning (SSPC-SP10) to conforming to SIS-05-5900 / NACE or equivalent to obtain roughness as per epoxy paint data sheet. **Revn:01**
 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. Witness by BHEL / BHEL nominated inspection agency.

DEVELOPMENT CONSULTANTS
PVT. LIMITED.

Reviewed only for general compliance with contract drawings and specifications. Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract.

DISTRIBUTED BY: BS
 ACTION 6 DATE 03.12.2015

1. Discussed
 2. Approved
 3. Approved except as noted, accompanied letter
 4. Approved except as noted, Resubmission required
 5. Disapproved see accompanying letter
 6. For information only

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