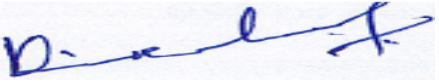


|  <b>BHARAT HEAVY ELECTRICALS LIMITED</b><br>PIPING CENTRE, CHENNAI- 17<br>QUALITY ASSURANCE & CONTROL DEPT.                                                                                                                                                                    |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                  | <b>PAINTING SCHEME FOR LP PIPING</b><br>( CW/ACW / ECW / Plant water, Air Piping, etc..., )<br><b>PROJECT NAME : - PANKI TPS EXTN – (1X 660 MW) – EPC PACKAGE</b><br><b>BHEL CUSTOMER Nos : 7363,7364 &amp; 7365</b> |                                                         |                   |             |       |                                                                               |                                                             |                                                | <b>QPNNo: 7363:QPC:12</b><br><b>REV.NO: 03</b><br><b>Dt : 20.05.19</b> |                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------|-------------|-------|-------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------|
| Sl. NO                                                                                                                                                                                                                                                                                                                                                          | PGMA / 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                                                                                                                                                                                                                                                                                                                                                               | 2                                                                                                                                                                                         | 3                                                                                                                                                                                                                                                                | 4                                                                                                                                                                                                                    | 5                                                       | 6                 | 7           | 8     | 9                                                                             | 10                                                          | 11                                             | 12                                                                     | 13                                               |
| 1                                                                                                                                                                                                                                                                                                                                                               | (a) Internal Surface - CW/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<br>(50 Microns Min. per coat)                         | ----              | ----        | ----  | Coal tar epoxy (Refer Note 2)                                                 | 2<br>(75 Microns Min. per coat)                             | ----                                           | 200 Microns (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 (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<br>(30 Microns per coat )                             | ----              | ----        | ----  | ----                                                                          | ----                                                        | ----                                           | 30 Microns                                                             |                                                  |
| 3                                                                                                                                                                                                                                                                                                                                                               | External Surface (over ground piping) of CW/ACW, ECW, Plant water.( For all diameters)                                                                                                    | Blast cleaning to SSPC SP-10 / SA 2½                                                                                                                                                                                                                             | Epoxy Primer                                                                                                                                                                                                         | 2<br>( 35 microns per coat )                            | ----              | ----        | ----  | High build epoxy (Epoxy resin with MIO/TIO2) + \$Epoxy Polyamide finish Paint | 2<br>( 35microns per coat. ) + 1 \$ ( 30 microns per coat ) | Smoke Grey Shade No 692 of IS 5 (Refer Note-4) | 140 at shop + 30 at site                                               | \$: 1 coat of DFT-40 microns finish coat at site |
| 4                                                                                                                                                                                                                                                                                                                                                               | Galvanised and Stainless steel Piping                                                                                                                                                     | No painting                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                      |                                                         |                   |             |       |                                                                               |                                                             |                                                |                                                                        |                                                  |
| <b>Notes:</b><br>1. Blast cleaning to near white metal to obtain roughness as per epoxy paint data sheet.<br>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.<br>3. Witness by BHEL / BHEL nominated inspection agency. |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                         |                   |             |       |                                                                               |                                                             |                                                |                                                                        |                                                  |
|                                                                                                                                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                                                              |                                                                                                                                                                                                                      | For NTPC use<br>NTPC Doc.ref: 9962-001-PC-102-PVM-H-002 |                   |             |       |                                                                               |                                                             |                                                |                                                                        | Page 1/1                                         |
| PREPARED BY :<br>V KARTHIKEYAN, Dy.Engr / QA                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           | APPROVED BY:<br>VIVEKANANDA YELLU Dy.Mgr / QA                                                                                                                                                                                                                    |                                                                                                                                                                                                                      |                                                         |                   |             |       |                                                                               |                                                             |                                                |                                                                        |                                                  |

|  <b>BHARAT HEAVY ELECTRICALS LIMITED</b><br><b>PIPING CENTRE, CHENNAI- 17</b><br>QUALITY ASSURANCE & CONTROL DEPT.                                                                                                                                                             |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                   | <b>PAINTING SCHEME FOR LP PIPING</b><br>( CW/ACW / ECW / Plant water, Air Piping, etc..., )<br><b>PROJECT NAME : - MAHAGENCO BHUSAWAL UNIT-VI - 1X660 MW</b><br><b>BHEL CUSTOMER Nos : 7288, 7372 &amp; 7373</b> |                                 |                   |             |       |                                             |                                 |                                      | <b>QPNo: 7288:QPC:12</b><br><b>REV.NO: 01</b><br><b>Dt : 08.05.19</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|-------------|-------|---------------------------------------------|---------------------------------|--------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|----------|---|----------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------|---|-------------------------------------|--|--|
| Sl. NO                                                                                                                                                                                                                                                                                                                                                          | PGMA / 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                                                                                                                                                                                                                                                                                                                                                               | 2                                                                                                                                                                                                                  | 3                                                                                                                                                                                                                                                                 | 4                                                                                                                                                                                                                | 5                               | 6                 | 7           | 8     | 9                                           | 10                              | 11                                   | 12                                                                    | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                               | (a) Internal Surface - CW/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<br>(50 Microns Min. per coat) | ----              | ----        | ----  | Coal tar epoxy (Refer Note 2)               | 2<br>(75 Microns Min. per coat) | ----                                 | 200 Microns (Refer Note 3)                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
|                                                                                                                                                                                                                                                                                                                                                                 | (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/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<br>(35 Microns per coat )     | ----              | ----        | ----  | ----                                        | ----                            | ----                                 | 35 Microns                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                               | External Surface (over ground piping) of CW,ACW,ECW, Plant water.( For all diameters)                                                                                                                              | SSPC-SP3 / Power Tool Cleaning                                                                                                                                                                                                                                    | Red Oxide - Zinc Phosphate (Alkyd base to IS: 12744)                                                                                                                                                             | 2<br>(35 Microns per coat )     | ----              | ----        | ----  | Synthetic enamel Long oil Alkyd to IS: 2932 | 3 **<br>(35 microns per coat )  | Smoke Grey (Shade No. 692 of IS: 5 ) | 140 at shop + 35 at site                                              | ** (2 coat at shop + 1 coat at site)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                               | Galvanised and Stainless steel Piping                                                                                                                                                                              | No painting                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                  |                                 |                   |             |       |                                             |                                 |                                      |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| <b>Notes:</b><br>1. Blast cleaning to near white metal to obtain roughness as per epoxy paint data sheet.<br>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.<br>3. Witness by BHEL / BHEL nominated inspection agency. |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                  |                                 |                   |             |       |                                             |                                 |                                      |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| <br>PREPARED BY :<br>VIVEKANANDA YELLU Dy.Mgr / QA                                                                                                                                                                                                                           |                                                                                                                                                                                                                    | <br>APPROVED BY:<br>C. VAITHIANATHAN, AGM / Q                                                                                                                                  |                                                                                                                                                                                                                  | For CUSTOMER use                |                   |             |       |                                             |                                 |                                      |                                                                       | DEVELOPMENT CONSULTANT PVT. LTD.<br>Reviewed only for general conformance with contract drawings and specifications; Contractor to be responsible for any error and for fulfilment of details requirements of contract documents.<br>CODE:- 1      DATE:- 08-05-2019<br>DISTRIBUTED BY:- SAURABH DAS<br><table border="1"> <tr> <td>1/</td> <td>Approved</td> <td>4</td> <td>For information only</td> </tr> <tr> <td>2</td> <td>Approved Subject to compliance to comments, Proceed with manufacturing/construction. Revised document required to be submitted after incorporating the comments.</td> <td>V</td> <td>Null and Void (Not applicable)</td> </tr> <tr> <td>3</td> <td>Not Approved. Resubmission required</td> <td></td> <td></td> </tr> </table> SEE COVERING LETTER<br>LETTER REF.NO:- 18V06-M18-LOT-BHEL-0245 |  | 1/ | Approved | 4 | For information only | 2 | Approved Subject to compliance to comments, Proceed with manufacturing/construction. Revised document required to be submitted after incorporating the comments. | V | Null and Void (Not applicable) | 3 | Not Approved. Resubmission required |  |  |
| 1/                                                                                                                                                                                                                                                                                                                                                              | Approved                                                                                                                                                                                                           | 4                                                                                                                                                                                                                                                                 | For information only                                                                                                                                                                                             |                                 |                   |             |       |                                             |                                 |                                      |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                               | Approved Subject to compliance to comments, Proceed with manufacturing/construction. Revised document required to be submitted after incorporating the comments.                                                   | V                                                                                                                                                                                                                                                                 | Null and Void (Not applicable)                                                                                                                                                                                   |                                 |                   |             |       |                                             |                                 |                                      |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                               | Not Approved. Resubmission required                                                                                                                                                                                |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                  |                                 |                   |             |       |                                             |                                 |                                      |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |    |          |   |                      |   |                                                                                                                                                                  |   |                                |   |                                     |  |  |



**BHARAT HEAVY**

**ELECTRICALS LIMITED**  
**PIPING CENTRE, CHENNAI-11**  
**QUALITY ASSURANCE & CONTROL DIVISION**

## PAINTING SCHEME FOR LP PIPING

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

PROJECT NAME : - PATRATU STPP PHASE-I – (3X 800 MW) – EPC PACKAGE

7386(AUX. BOILER)

QPNº: 7381:QPC:12  
REV.NO: 00  
Dt: 21.08.2018

| Sl. NO | PGMA / 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      | 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<br>(50 Microns Min. per coat) | ----- | -----             | ----- | Coal tar epoxy (Refer Note 2)               | 2<br>(75 Microns Min. per coat) | -----                               | 200 Microns (Refer Note 3) |                                      |
| (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 ACW --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<br>(30 Microns per coat)      | ----- | -----             | ----- | -----                                       | -----                           | -----                               | 30 Microns                 |                                      |
| 3      | External Surface (over ground piping) of ACW. ( For all diameters)                                                                                                                                                                                | SSPC-SP3 / Power Tool Cleaning                                                                                                                                                                                                                                    | Red Oxide - Zinc Phosphate (Alkyd base to IS: 12744) | 2<br>(25 Microns per coat)      | ----- | -----             | ----- | Synthetic enamel Long oil Alkyd to IS: 2932 | 3 **<br>(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      | External Surface of ECW. Plant water ( For all diameters)                                                                                                                                                                                         | SSPC-SP3 / Power Tool Cleaning                                                                                                                                                                                                                                    | Red Oxide - Zinc Phosphate (Alkyd base to IS: 12744) | 2<br>(25 Microns per coat)      | ----- | -----             | ----- | Synthetic enamel Long oil Alkyd to IS: 2932 | 3 **<br>(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) |
| 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.

PREPARED BY:

APPROVED BY:

For NTPC use  
NTPC Doc.ref: 9585-001-102-PVM-B-001B

VIVEKANANDA YELLU Dy.Mgr / QA

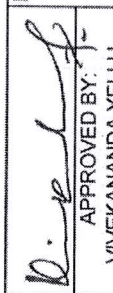
C. VAITHIANATHAN, AGM / Q

| BHARAT HEAVY ELECTRICALS LIMITED<br>PIPING CENTRE, CHENNAI- 17<br>QUALITY ASSURANCE & CONTROL DEPT. |                                                                                                                           | PAINTING SCHEME FOR LP PIPING<br>(CW / ACW / ECW / Plant water, Air Piping, etc., )<br>PROJECT NAME : - YADADRI TPS - 5X800 MW<br>BHEL CUSTOMER Nos : 7295,7296,7297,7298,7299,7300&7306                                                                          |                                                   |                              |                                                                                                                                     |                                |       |                                                                                 | QPNo: 7295:QPC:12<br>REV.NO: 01<br>Dt : 11.09.2018 |       |                 |                          |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------|---------------------------------------------------------------------------------|----------------------------------------------------|-------|-----------------|--------------------------|
| Sl. NO                                                                                              | PGMA / 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                                                                                                   | 2                                                                                                                         | 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)                                                                                                                                                                                                                    | Two part Epoxy Primer                             | 1 (50 Microns Min. per coat) | Two part Polyamide cured solvent less Epoxy (100% solids)                                                                           |                                |       |                                                                                 | 300-350 Microns Min.                               |       | 350-400 Microns | Refer Note 1&2           |
|                                                                                                     | (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 (Temporary Protection for transportation from works to site). | SSPC-SP3 / Power Tool Cleaning                                                                                                                                                                                                                                    | Red Oxide Zinc Phosphate (Alkyd base to IS 12744) | 1 (30 Microns per coat)      | Further protection to be done by BHEL Erection Group as per Contract requirement (Rapping coating conforming to AWWA-C-203/IS15337) |                                |       |                                                                                 |                                                    |       |                 |                          |
| 3                                                                                                   | External Surface (over ground piping) of CW,ACW.( For all diameters)                                                      | Blast Cleaning SSPC SP-10 SA 2½                                                                                                                                                                                                                                   | Epoxy based Zinc Phosphate to IS: 13238           | 1 (50 Microns per coat)      | Epoxy Based MIO Pigmented Intermediate Coat.                                                                                        | 2 (DFT=75 Micron Min Per coat) |       | Epoxy based finish paint to IS: 14209 + Aliphatic Acrylic PU Paint to IS: 13213 | 1 (25 microns per coat) + 1 (25 microns per coat)  |       | 250             |                          |
| 4                                                                                                   | External Surface of ECW, Plant water ( For all diameters)                                                                 | Blast Cleaning SSPC SP-10 SA 2½                                                                                                                                                                                                                                   | Epoxy based Zinc Phosphate to IS: 13238           | 1 (50 Microns per coat)      | Epoxy Based MIO Pigmented Intermediate Coat.                                                                                        | 2 (DFT=75 Micron Min Per coat) |       | Epoxy based finish paint to IS: 14209 + Aliphatic Acrylic PU Paint to IS: 13213 | 1 (25 microns per coat) + 1 (25 microns per coat)  |       | 250             |                          |
| 5                                                                                                   | Galvanised and Stainless steel Piping                                                                                     |                                                                                                                                                                                                                                                                   |                                                   |                              |                                                                                                                                     |                                |       | No painting                                                                     |                                                    |       |                 |                          |

**Notes:**

1. Blast cleaning & application of Polyamide cured solvent less Epoxy (100% solids) shall be done as per manufacturer's data sheet / recommendation, meeting the thickness requirements as per this document.

2. Witness by BHEL / BHEL nominated inspection agency.

|                                                 |                                                                                                                                          |                           |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <p>PREPARED BY : J. NANTHINI, Sr. Engr / QA</p> | <p>APPROVED BY:  VIVEKANANDA YELLU, Dy.MGR / QA</p> | <p>For Customer use :</p> |
|                                                 |                                                                                                                                          | Page 1/1                  |

  
 Chief Engineer  
 Thermal Projects Construction  
 TSGENCO, Vidyut Soudha,  
 Khairatabad, Hyd-500 082.