

|                                                                                                      |                                                                                             |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rev 01                                                                                               | 26-09-2025                                                                                  | K. Srinivasan  | K. Rajmohan                                                                                                                                                       | A. Santhakumari | Modified as per customer comments of CAT-III approval.                                                                                                                                                                                                                                                                   |
| Rev 00                                                                                               | 23-12-2024                                                                                  | K. Srinivasan  | K. Rajmohan                                                                                                                                                       | A. Santhakumari | Prepared in line with NLC EPC Bidding Document.No.18A03-SPC-G-001, Vol.II-A/Section-XII/Sub-section-B-PAINTING & related amendments and corrigendum no-5 pre-bid Dt.08.05.2021 (Page 256 to 260 of 400), Change in specification based on TCM resolution-Annexure A (Page 17 of 274) to Bidding Documents issued by NLC. |
| Revision                                                                                             | Rev date                                                                                    | Created by     | Reviewed by                                                                                                                                                       | Approved by     | Description                                                                                                                                                                                                                                                                                                              |
| Revision history                                                                                     |                                                                                             |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| Customer No:                                                                                         |                                                                                             | U8/1836-1838   |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| Customer Doc No:                                                                                     |                                                                                             | PL: C3-PS/1836 |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| Owner<br>           | NLC India Ltd.                                                                              |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| CONSULTANT:<br>     | DEVELOPMENT CONSULTANTS PVT. LTD.<br>KOLKATA.                                               |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| PROJECT                                                                                              | NLC TALABIRA THERMAL POWER PROJECT<br>3X800 MW JHARSUGUDA, ODISHA                           |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| EPC Contractor<br> | BHARAT HEAVY ELECTRICALS LIMITED<br>HIGH PRESSURE BOILER PLANT,<br>TIRUCHIRAPALLI - 620014. |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
|                                                                                                      | Name                                                                                        | Date           | Title                                                                                                                                                             |                 |                                                                                                                                                                                                                                                                                                                          |
| Prepared by                                                                                          | K. Srinivasan                                                                               | 02-06-2026     | PAINTING SCHEDULE <ul style="list-style-type: none"><li>Annexure-I: SG &amp; SCR COMPONENTS</li><li>Annexure-II: PIPING</li><li>Annexure-III: LP PIPING</li></ul> |                 |                                                                                                                                                                                                                                                                                                                          |
| Reviewed by                                                                                          | K. Rajmohan                                                                                 |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |
| Approved by                                                                                          | A. Santhakumari                                                                             |                |                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                          |

|                                                                                                                                                                                                 |       |                                                  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------|--|
|                                                                                                            |       | <b>DEVELOPMENT CONSULTANTS<br/>PVT. LIMITED.</b> |  |
| Reviewed only for general conformance with contract drawings and specifications. Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract documents |       |                                                  |  |
| ACTION 1                                                                                                                                                                                        |       | DATE 16.06.2026                                  |  |
| DISTRIBUTED BY. AD                                                                                                                                                                              |       |                                                  |  |
| ✓ 1 Approved                                                                                                                                                                                    | 3     | Returned with Comments. Please Resubmit.         |  |
| 2                                                                                                                                                                                               | 4     | For information only                             |  |
| SEE COVERING LETTER                                                                                                                                                                             |       |                                                  |  |
| LETTER REF NO.                                                                                                                                                                                  | DATE. |                                                  |  |



3 X 800 MW NLC Talabira Thermal Power Project  
EPC Package



| DOC TITLE |  | PAINTING SCHEDULE FOR SG & SCR COMPONENTS |  |  |  | COMMENT RESOLUTION SHEET |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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# Annexure-I

## Painting Scheme for SG & SCR Components

| Sl. No.     | PGMA / Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Surface Preparation & Surface Profile                                                                        | Primer coat                                                                                                        |              | Intermediate coat                                                                                                                                |              | Finish coat                                                                                                          |              |                                              | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------|-------------------------------|------------------------------------------------------------------------------------|
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                              | Paint                                                                                                              | No. of coats | Paint                                                                                                                                            | No. of coats | Paint                                                                                                                | No. of coats | Shade                                        |                               |                                                                                    |
| 1<br>PS1AC  | <u>Collector &amp; Separator Vessels (Except Internals)</u><br>04 –321,323;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SSPC-SP3/<br>Power Tool<br>Cleaning                                                                          | Red Oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744<br>DFT= 30 $\mu\text{m}$ per coat                         | 1            | --                                                                                                                                               | --           | Synthetic Enamel paint (Long Oil Alkyd) to IS 2932<br>DFT= 20 $\mu\text{m}$ per coat                                 | 2            | International orange<br>Shade No: 592 of IS5 | 70                            | (Spec. Sl. No. 6, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |
| 2<br>PS5    | <u>Collector &amp; Separator Vessels internals and Dd items (threaded and machined surfaces only)</u><br>04-347;07-331,360,361,362,393;08-911,912, 08-913;09-304;12-306,314,317,324,327,328; 12-344,348,354,393;17-304,306,319;19-306; 19-307;21-602,605,700;24-352,700,803,813, 24-818,827,842,968;28-700;32-700;35-190, 35-701,721,722,723,724,725,726,727,728,730; 36-700,701,721,722,723;39-700;41-710; 42-700,710;43-710;45-710;47-710; 48-019,700;65-710;67-710;<br><u>SCR system:</u> SS-700,701,983;SR-272;SL-700; SL-701; SR-282,307,172,122,507,152,252,182; SR-207,512;SS-730;<br><u>Foundation materials:</u> 35-010; 39-012; | SSPC – SP3<br>Power Tool<br>Cleaning                                                                         | Rust Preventive Fluid to PR: CHEM: 09 – 04<br>DFT=25 $\mu\text{m}$ per coat                                        | 1            | --                                                                                                                                               | --           | --                                                                                                                   | --           | --                                           | 25                            |                                                                                    |
| 3<br>PS19B1 | <u>Buck stays</u><br>08-001,003,006,007,111,380,501,503,901,910;<br><u>Boiler supporting structures,</u><br><u>Columns, Girders, Bracings</u><br>35-131 to 138,141 to 148,151 to 158;<br>35-181 to 188, 211 to 214,221,222,231,232;<br>35-311, 312,321,322,331,332,341,342,351,352;<br>35-361,362,371,372,374,375,381 to 388;<br>35-390,441 to 448, 451 to 458;<br>35-511 to 518,521 to 528,531 to 538,993,995;<br><u>Silencer support:</u> 24-826;                                                                                                                                                                                       | Blast cleaning to SA2 ½ (Near white metal) conforming to ISO 8501-1 with surface profile 50-75 $\mu\text{m}$ | Inorganic Ethyl Zinc Silicate Primer<br>DFT=80 $\mu\text{m}$ per coat<br><br>(refer sheet 12 Sl.no.11 for details) | 1            | High Build Epoxy MIO coating cured with polyamide hardener coat<br>DFT = 120 $\mu\text{m}$ per coat<br><br>(refer sheet 12 Sl.no.10 for details) | 1            | Aliphatic acrylic Polyurethane paint<br>DFT = 30 $\mu\text{m}$ per coat.<br><br>(refer sheet 11 Sl.no.2 for details) | 2            | Phirozi blue to Shade No. 176 of IS 5.       | 260                           | (Spec. Sl. No. 1, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |

For structural steel, all coats shall be applied at shop.

# Annexure-I

## Painting Scheme for SG & SCR System

| S. No.                                                    | PGMA / Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Surface Preparation & Surface Profile                                                                        | Primer coat                                                                                                        |              | Intermediate coat                                                                                                                                |              | Finish coat                                                                                                          |              |                                        | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                   |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------|-------------------------------|------------------------------------------------------------------------------------|
|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              | Paint                                                                                                              | No. of coats | Paint                                                                                                                                            | No. of coats | Paint                                                                                                                | No. of coats | Shade                                  |                               |                                                                                    |
| 3<br>PS19B1<br>(Contd.)                                   | <u>Galleries, Stair-ways &amp; inter connecting Walkways</u><br>36-111 to 113, 151 to 153, 311 to 316;<br>36-321 to 326, 331 to 338, 341 to 346;<br>36- 351 to 356,361 to 366, 371 to 377;<br>36- 381 to 383, 391 to 395,610,613,620,740;<br>36- 993; 38-210,299, 310,410,510,610,710,993;<br><u>ID system structures.</u><br>39-101,102,141,142,150,299,300,304,305;<br>39-306,993;<br><u>SCR structures:</u><br>SS-110 to 113,191,210,215,311,321,331, 341;<br>SS- 361 to 364, 391 to 396, 440 to 443;<br>SS-550 to 553, 610, 620, 901, 906 to 908;<br>SS-952 to 955,961 to 965, 971 to 975, 999;<br><u>Duct supports</u><br>48-015,115,145,205,225,265,385,435;<br>48-465,485,495,665;<br>(Refer note 23 for handrails, step treads released under PGMA of this Sl.No.3)<br>(Refer note 25 for bunker structures) | Blast cleaning to SA2 ½ (Near white metal) conforming to ISO 8501-1 with surface profile 50-75 $\mu\text{m}$ | Inorganic Ethyl Zinc Silicate Primer<br>DFT=80 $\mu\text{m}$ per coat<br><br>(refer sheet 12 Sl.no.11 for details) | 1            | High Build Epoxy MIO coating cured with polyamide hardener coat<br>DFT = 120 $\mu\text{m}$ per coat<br><br>(refer sheet 12 Sl.no.10 for details) | 1            | Aliphatic acrylic Polyurethane paint<br>DFT = 30 $\mu\text{m}$ per coat.<br><br>(refer sheet 11 Sl.no.2 for details) | 2            | Phirozi blue to Shade No. 176 of IS 5. | 260                           | (Spec. Sl. No. 1, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |
| 4<br>PS1Z3                                                | <u>Components &gt;95° C Insulated other than components in Sl.No.7 &amp;9</u><br>Ring Headers, Down Comers, Hot air Headers outside the gas path etc. (Refer Note 8)<br><br>05-137,147,155,227,231,251,327,330,350;<br>07-102,110,125,217,223,231,232;<br>12-178,850,852,900;17-407,476,807;<br>18-001,002,010,701;19-701,702,903;21-600;24-811,824,828,836,837;                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 $\mu\text{m}$                          | Inorganic Ethyl Zinc Silicate Primer<br>DFT=60 $\mu\text{m}$ per coat                                              | 1            | --                                                                                                                                               | --           | --                                                                                                                   | --           | Grey                                   | 60                            | (Spec. Sl. No. 3, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |
| For structural steel, all coats shall be applied at shop. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              |                                                                                                                    |              |                                                                                                                                                  |              |                                                                                                                      |              |                                        |                               |                                                                                    |

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## Painting Scheme for SG & SCR System

| Sl. No.                | PGMA / Description                                                                                                                                                                                                                                                                                                                                                                                | Surface Preparation & Surface Profile                                                 | Primer coat                                                                                    |              | Intermediate Coat |              | Finish coat                                                                        |              |           | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------|-------------------|--------------|------------------------------------------------------------------------------------|--------------|-----------|-------------------------------|------------------------------------------------------------------------------------------------------|
|                        |                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       | Paint                                                                                          | No. of coats | Paint             | No. of coats | Paint                                                                              | No. of coats | Shade     |                               |                                                                                                      |
| 4<br>PS1Z3<br>(Contd.) | Hot Air:<br>48-018, 022,116,202,204,207,208;<br>48-212,214,222,224, 262,264,267,662,664,667;<br>Flue Gas:<br>48-372,382,384,386, 432,434,462,464,482,484,492; 48-494,496,498;<br>SCR system: SS-911 to 918,921 to 928, 931 to 938, SS-941,942, 945 to 948,996;                                                                                                                                    | Blast cleaning to SA2 1/2 (Near white metal) with surface profile 35-50 $\mu\text{m}$ | Inorganic Ethyl Zinc Silicate Primer<br>DFT=60 $\mu\text{m}$ per coat                          | 1            | --                | --           | --                                                                                 | --           | Grey      | 60                            | (Spec. Sl. No. 3, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A)                   |
| 5<br>PS 10B5           | <u>Components &gt;95° C uninsulated other than components coming in gas path.</u><br><br>Temp: >95° C & <400° C<br>24-807,820,860,865,867;42-200,300;<br>Instrument tappings, doors: 48-200,915;                                                                                                                                                                                                  | Blast cleaning to SA2 1/2 (Near white metal) with surface profile 35-40 $\mu\text{m}$ | Inorganic Ethyl Zinc Silicate Primer<br>DFT=40 $\mu\text{m}$ per coat                          | 1            | --                | --           | Heat Resistant Aluminium Paint to IS 13183 Gr. II<br>DFT 20 $\mu\text{m}$ per coat | 2            | Aluminum  | 80                            | (Spec 5a. Sl. No. 40, Page 16 of 30, Change in spec (section B of tender spec, Annexure C2A(Boiler)) |
| 6<br>PS 10             | Components uninsulated other than components coming in gas path.<br>(Temp: >400° C & <600° C)<br>09-003,004,005; 28-220;<br>Components insulated (Temp: >400° C & <600° C)<br>RH & SH headers<br>10-135,174,176,178,191,235,274,276,278;<br>10-283 to 285,291;15-136,178,236,278;                                                                                                                 | SSPC-SP3/<br>Power Tool Cleaning                                                      | Heat Resistant Aluminium Paint to IS 13183 Gr. I<br>DFT 20 $\mu\text{m}$ per coat              | 1            | --                | --           | Heat Resistant Aluminium Paint to IS 13183 Gr. I<br>DFT 20 $\mu\text{m}$ per coat  | 1            | Aluminum  | 40                            | (Spec 5b. Sl. No. 40, Page 16 of 30, Change in spec (section B of tender spec, Annexure C2A(Boiler)) |
| 7<br>PS2               | <u>Loose tubes, SH, RH &amp; Eco. coils</u><br>11-074,078,374,378,406,467,469,487,491,494,606,608;<br>11-684,694,716,717,718,767,768,769,787,791,916,917;<br>11-918,967,968,969,987,991;12-179,181,184,187,368;<br>12-405,514,524,544,554,600,800,803,805,862,903,914;<br>12-917,924,927,928,944,948,954,968;16-201,202,203;<br>16-270,278,379;19-092,402,804,814,824,853,884,914;<br>19-924,984; | SSPC – SP2 or<br>SSPC – SP3<br>Hand tool /<br>Power tool cleaning                     | Red Oxide Zinc Phosphate Dip coat primer to PR: CHEM: 09 – 03<br>DFT=35 $\mu\text{m}$ per coat | 1*           | --                | --           | No paint                                                                           | No paint     | Red Oxide | 35                            | (Spec. Sl. No. 5, Page 22 of 24, Sub Section-B (painting), Section-XII, Vol. II-A)                   |

\*-In lieu of dip painting, 2 coats of brush painting of Red oxide Zinc Phosphate primer to a coating thickness of 60 $\mu$  is also permitted in line with Sr.No.9.

# Annexure-I

## Painting Scheme for SG & SCR System

| Sl. No.   | PGMA / Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Surface Preparation & Surface Profile | Primer coat                                                                                                     |              | Intermediate Coat |              | Finish coat                                                                                         |              |                                                | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                                  |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------|-------------------|--------------|-----------------------------------------------------------------------------------------------------|--------------|------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------|
|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       | Paint                                                                                                           | No. of coats | Paint             | No. of coats | Paint                                                                                               | No. of coats | Shade                                          |                               |                                                                                                   |
| 8<br>PS1A | <p>Miscellaneous and casing sheets<br/>04-147,547;07-409,431,460,461,462,502,503,509;<br/>07-531,560;12-506,906,907;17-919;21-601,604;<br/>21-606;24-350,351,354,800,801,804 to 806;<br/>24- 808 to 810,814,815,817,825,835,840,841;<br/>24-855,950,955,960;30-233,234;<br/>36-396,398;38-611;<br/>Fuel firing: 41-350,390,500;<br/>Steam blowing piping<br/>42-001,002,005,010,046,065,070,120,152,154,157;<br/>43-004,104,200;45-200,801,802,804,805;<br/>45-858;47-281,283,858;<br/>Duct plates, expansion joints<br/>48-911,912;<br/>Coal Feeding:<br/>65-736; 67-204,272,276,283,801 to 803;95-088,091,485;97-585,592;<br/>\$Handling equipment:<br/>99-099,100,300,400;<br/>Nitrogen blanketing system:24-966,967,969;<br/>Seal air ducting: 43-005, 105;<br/>Cold Air duct:48-012,014, 112,114, 141;<br/>Tempering Air: 48-142,144;<br/>#SCR system: SR -010,020,050,121,128,151;<br/>SR-158,171,178,181,188,251,258,271,278,281;<br/>SR-288,301,308,311,312,318,330,400,490,511;<br/>SR -518,611,621,900,990,997,998;<br/>SS-611,621,997,998;<br/><br/>(Refer note 22 for chequered plates)</p> | SSPC-SP3/<br>Power Tool<br>Cleaning   | Red Oxide<br>Zinc<br>Phosphate<br>Primer<br>(Alkyd<br>Base)<br>to IS 12744<br>DFT= 30 $\mu\text{m}$<br>per coat | 1            | --                | --           | Synthetic<br>Enamel paint<br>(Long Oil<br>Alkyd)<br>to IS 2932<br>DFT= 20 $\mu\text{m}$<br>per coat | 2            | Smoke<br>Grey<br>Shade<br>No:<br>692 of<br>IS5 | 70                            | (Spec. Sl. No. 6,<br>Page 18 of 24,<br>Sub Section-B<br>(painting),<br>Section-XII,<br>Vol. II-A) |

\$ - Final Shade is Golden yellow for Under hung crane, Chain Pulley Block, Ratchet Lever and Trolley with hoist. Black shade for Hook.

# - Final Shade is Grey white (RAL 9002).

# Annexure-I

## Painting Scheme for SG & SCR System

| Sl. No.       | PGMA / Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Surface Preparation & Surface Profile | Primer coat                                                                                                                                                  |              | Intermediate coat |              | Finish coat |              |           | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                    |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|--------------|-------------|--------------|-----------|-------------------------------|-------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       | Paint                                                                                                                                                        | No. of coats | Paint             | No. of coats | Paint       | No. of coats | Shade     |                               |                                                                                     |
| 9<br><br>PS3  | <u>Components &gt;95° C coming in the gas path, Headers, Commissioning Spares &amp; erection Materials etc.,</u><br>06-400,401,431,434,437,441,444,447,451,453, 06-455,500,501,515,731,732,734,735,737,741, 06-744,745, 747,751,752,753,755,759; 07-309,315,316,318, 07-423,993;10-182,183,184,185;11-474;12-993, 12-994;17-174,504,506,900,903;19-704,753,763, 19-783,793,802,850,851,852;20-998;24-822,823, 24-993;30-103,105,212,215,219,223,224,235; 31-010,104;32-010,210,810;37-010;42-858; 48-993;65-200;67-200;96-193;97-282,590; 99-501;21-987,988;24-987,988,989;41-988; 42-988;41-997;42-997;43-997;45-997;47-997; 65-997;67-997; SC-324; SL-210;20-988; 99-514; SR-988;65-988; (Refer note 20 for info about 32-210) | SSPC-SP3/ Power Tool Cleaning         | Red Oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744 DFT= 30 $\mu\text{m}$ per coat                                                                      | 2            | --                | --           | No paint    | No paint     | Red oxide | 60                            | (Spec. Sl. No. 6, Page 22 of 24, Sub Section-B (painting), Section-XII, Vol. II-A)  |
| 10<br><br>PS6 | <u>Hand rails and posts, ladders / rungs</u><br>35-821,822,823,851; 36-820,821,822,823,851,852,853; 38-820,850;39-820,850; SS-820,850;<br><u>Floor Grills, Step treads</u><br>35 - 811,812;36-811,812,813,814; 38 - 810; 39 - 810; SS-810,811,982;                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SSPC – SP8/ Acid pickling             | Hot dip Galvanizing to a coating weight of 610 g/m <sup>2</sup> (minimum) and to a coating thickness of 85 $\mu\text{m}$ .<br><br>Refer Notes given below ** |              |                   |              |             |              |           |                               | (Spec. Sl. No. 27, Page 21 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |

Notes \*\*: The Hood ladders, Stringer channels, angles and plates shall be painted as per painting scheme prescribed in Sl. No: 03.

# Annexure-I

## PAINTING SCHEME FOR VALVES

| Sl.No.             | PGMA / Description                                                                                                                                                                                                                                                      | Surface Preparation & Surface Profile                                               | Primer coat                                                                                   |              | Intermediate coat |              | Finish coat                                                                                   |              |                                         | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------|-------------------|--------------|-----------------------------------------------------------------------------------------------|--------------|-----------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------|
|                    |                                                                                                                                                                                                                                                                         |                                                                                     | Paint                                                                                         | No. of coats | Paint             | No. of coats | Paint                                                                                         | No. of coats | Shade                                   |                               |                                                                                                      |
| 11<br><br>@PS 9/10 | <u>Cast carbon steel valves (Conventional)</u><br><u>Cast alloy steel valves (Conventional)</u><br><u>All API valves, QCNRV, SV &amp; SRV Silencers,</u><br>21-800,825; 24-885;<br>Safety valves & ERV<br>21-850; 24-880,881,883;<br><b>SCR system: SR-103,203,303;</b> | SSPC-SP3/<br>Power Tool<br>Cleaning                                                 | Heat Resistant silicone Aluminium Paint to IS 13183 Gr.II/I<br>DFT= 20 $\mu\text{m}$ per coat | 1            | --                | --           | Heat Resistant silicone Aluminium Paint to IS 13183 Gr.II/I<br>DFT= 20 $\mu\text{m}$ per coat | 1            | Aluminum                                | 40                            | (Spec 5b. Sl. No. 40, Page 16 of 30, Change in spec (section B of tender spec, Annexure C2A(Boiler)) |
|                    | Forged valves                                                                                                                                                                                                                                                           | Chemical cleaning                                                                   | Phosphating to a coating weight of 1500 mg per Sq.ft.                                         | --           | --                | --           | --                                                                                            | --           | --                                      | --                            |                                                                                                      |
| 1AS2               | <u>Soot Blower components (e.g. Soot blower housing with temp &lt;95° C)</u><br>20-051,054,201,204,511,794,962;<br><br>(Refer note 19 for valve head assembly)                                                                                                          | Blast cleaning to SA2 ½ (Near white metal) with surface profile 15-30 $\mu\text{m}$ | Red Oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744<br>DFT= 30 $\mu\text{m}$ per coat    | 2            | --                | --           | Syn. Enamel paint (Long Oil Alkyd) to IS 2932<br>DFT= 20 $\mu\text{m}$ per coat               | 2            | Verdigris Green<br>Shade No. 280 of IS5 | 100                           | (Spec. Sl. No. 6, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A)                   |
|                    | HP / LP system                                                                                                                                                                                                                                                          | SSPC-SP3/<br>Power Tool<br>Cleaning                                                 | Heat Resistant Aluminium Paint to IS 13183 Gr.I<br>DFT= 20 $\mu\text{m}$ per coat             | 1            | --                | --           | Heat Resistant Aluminium Paint to IS 13183 Gr.I<br>DFT= 20 $\mu\text{m}$ per coat             | 1            | Aluminum                                | 40                            | (Spec 5b. Sl. No. 40, Page 16 of 30, Change in spec (section B of tender spec, Annexure C2A(Boiler)) |

@ Heat resistant silicone based aluminum paint to IS 13183 Gr.II shall be applied for temperature up to 400 deg.C, Gr. I shall be applied for temperature >400 deg.C and up to 600 deg.C.

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| Sl. No.      | PGMA / Description                                                                                                                                                  | Surface Preparation & Surface Profile                                               | Primer coat                                                                                        |              | Intermediate coat                                                                   |              | Finish coat                                                                                                |              |                                      | Total DFT $\mu\text{m}$ (min) | Contract specification reference                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------|-------------------------------|------------------------------------------------------------------------------------|
|              |                                                                                                                                                                     |                                                                                     | Paint                                                                                              | No. of coats | Paint                                                                               | No. of coats | Paint                                                                                                      | No. of coats | Shade                                |                               |                                                                                    |
| 12<br>PS15   | <b>For CLH &amp; VLH*</b><br>PGs 07,08,12,17,19,21,24,47,48 &80<br>07-402,403,405;12-517,528;<br>17-904,906;<br>19-506,507,904,905, 906,907;<br>24-353; 48-206,395; | Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-40 $\mu\text{m}$ | Epoxy zinc rich primer<br>To IS 14589 Gr. II (latest)<br>% VS=35, (min)<br>DFT=40 microns per coat | 1            | --                                                                                  | --           | Aliphatic acrylic Poly-urethane paint to IS13213 (latest)<br>% VS=40.0 (min)<br>DFT= 30.0 microns per coat | 1            | Phirozi Blue<br>Shade No. 176 of IS5 | 70                            |                                                                                    |
| 13<br>PS10B4 | <b><u>Components &gt; 95°C &amp; &lt;200°C, un-insulated Fuel pipes</u></b><br>47-200, 289;                                                                         | Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-40 $\mu\text{m}$ | Inorganic Ethyl Zinc Silicate Primer<br>DFT=40 $\mu\text{m}$ per coat                              | 1            | Heat Resistant Aluminium Paint to IS 13183 Gr. III<br>DFT 20 $\mu\text{m}$ per coat | 1            | Heat Resistant Aluminium Paint to IS 13183 Gr. III<br>DFT 20 $\mu\text{m}$ per coat                        | 1            | Aluminum                             | 80                            | (Spec. Sl. No. 4, Page 18 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |
| 14<br>PS5    | All Columns below '0' level (embedded in concrete)<br>PGs 34,35,36,38, 39                                                                                           | SSPC-SP3/ Power Tool Cleaning                                                       | Rust Preventive Fluid to PR: CHEM: 09 – 04<br>DFT=25 $\mu\text{m}$ per coat                        | 1            | --                                                                                  | --           | --                                                                                                         | --           | --                                   | 25                            |                                                                                    |

\*- For components other than CLH & VLH, Painting scheme shall be as given in Sl. No. 8.

# Annexure-I

## NOTES:

1. Rust Preventive Coating should be given on HSFG Bolt and nut threads. If required, one coat of Rust preventive shall be applied after tightening of the same.
2. Machined surfaces and all retainers are to be applied with a coating of Temporary Rust Preventive oil.
3. All threaded and other surfaces of foundation bolts and its materials, insulation pins, Anchor channels, Sleeves, shall be coated with Temporary Rust Preventive Fluid and during execution of civil works; the dried film of coating shall be removed using organic solvents.
4. Ground shade/ Colour of Finish paints & identification tag/Band for equipments, pipings pipe service, boiler supporting structures and other boiler components shall be followed as per NLC Talabira EPC document Vol-IIA/ Section-XII/Sub-Section-B, Painting.
5. PGMA's under Sub-Vendor items are not indicated. For all bought-out and sub-vendors items including PGMA's mentioned above falling under the scope of BHEL the same scheme as for main equipment as covered in this document shall be followed. Vendor standard practice has to be followed for PGMA not specified in this document.
6. This painting Schemes is valid for only Customer No: U8/1836,1837 & 1838, NLCIL TALABIRA TPP - 3X800 MW.
7. No painting is required for Stainless Steel, non-ferrous & galvanized components.
08. Wherever inside surfaces of components under PGMA 48 – XXX & others, need protection till erection, two coats of Red-oxide zinc phosphate primer paint to IS12744 to a DFT of 60 microns shall be applied, after power tool cleaning.
09. The Temporary Rust Preventive coating that already been applied on any components, tubes, pipes etc., shall be visually inspected for good adherence. If the coating is intact, direct coating of alkyd based red oxide paints over the coating is permitted. In case, the coating has peeled off over a large area, then the coating is to be removed by suitable solvents / heating to 350 –400 °C for an hour before primer paint application –but, in this case, it should be ensured that the minimum surface cleanliness required for primer paint application shall be SSPC – SP2 (equivalent – Hand Tool cleaning).
10. In components, wherever plates / sheets of thickness less than or equal to 5 mm and rods of  $\leq 25$ mm/tubes/drain pipes & bent rods are used, power tool / hand tool cleaning to SSPC – SP3 / SP2 shall be followed and the painting shall be done as described in SI.No.8.
11. For all commissioning components-erection materials (xx-993) two coats of Red oxide Zinc Phosphate Primer shall be applied to meet the temporary protection till erection, after power tool cleaning.
12. 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 Vol. II-A/Section-VI, Cl.2.10.13.
13. All components covered under different PGMA's are to be painted. In case any component is left out, the same shall be deemed to be included under the relevant section based on paint logic approved.
14. For very small components like clamps etc. which are not having feasible dimensions for blast cleaning, painting scheme of SI.No.8 shall be followed.
15. For very small components with weldable primer at edges, the entire component shall be applied with weldable primer. Structural members having welded connections at site, relevant area can be painted with weldable primer.

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16. Painting scheme for all temporary structures like 04-196,SS-999 shall be PS 1AE i.e. 1 coat of Red oxide Zinc Phosphate primer (Alkyd Base) to IS 12744-DFT-30 $\mu$  and 2 coats of Synthetic Enamel paint (Long Oil Alkyd) to IS 2932-DFT-2X20 $\mu$  Shade Yellow –Shade No. 356 of IS 5- Total DFT 70 $\mu$ . These are to be cut & removed at site after erection. (It excludes components covered under Sr. No. 3 & 10 of description table).

17. For internal protection of Pipes, tubes, headers and other pressure parts, Volatile Corrosion Inhibitor (VCI) pellets shall be put (after sponge testing/ draining/ or drying) and subsequently end capped. The dosage of VCI pellets shall be approximately 100 g/ Cu.m. For tubes typically 4 – 5 tablets per end are to be put. For C & I items the dosage of self-indicating Silica Gel (colourless) shall be 250 g/ cu.m. (About 2 to 3 bags weighing approximately 100 grams each). VCI pellets shall not be used for stainless steel components and its composite associates.

18. All threaded components of spring assemblies and turnbuckles shall be galvanized and achromatized to 15 microns minimum thickness.

19. Soot blower components i.e Valve head assembly having high surface temperature (> 200 and <600 deg. C) shall be applied with protective coating as per PS9 (up to 400 deg.C) and PS10 (up to 600 deg.C).

20. Corner plate, sheet channel and fixing pins of PGMA 32-210, SL-210 shall be painted as per scheme PS3 to total DFT of 60 microns.

21. It is mandatory that for finish coat each layer shall have a permanent DFT and free from any paint defects like sags, wrinkles etc. Total DFT of a component correspond to respective painting scheme has to be ensured and recorded by inspection agency as per QP.

22. For chequered plates having thickness <5mm, surface preparation can be power tool cleaning to St3 and painting shall be in line with PS1A.

23. Handrails, step treads of PGMA under Sl. No. 3 need to be need to be galvanized in line with scheme of Sl .No. 10.

24. Inside surfaces of fabricated structure (e.g. Box type column) shall be painted with two coats of red oxide primer paint during fit up stage.

25. Painting of bunker structures to be in line with painting scheme of supporting structures (Sl. No. 3).

26. All steel structures shall be provided with painting as given in the specification. Further, painting system shall also meet the requirements of corrosivity category C3 as per ISO 12944.

27. For items meant for Spares and subcontracting where no further processing is involved, the painting scheme selected shall be the same as that of similar product configuration/ description.

28. For ammonia storage tank PGMA SR-100, surface preparation to blast cleaning Sa2.5 (surface profile 35- 50 $\mu$ m), three component epoxy based zinc rich primer (90% by weight of zinc dust pigment in its dry film) DFT 75 $\mu$  minimum and water based acrylic urethane finish paint, DFT 2x50 $\mu$  minimum, white shade. Total DFT is 175 $\mu$ .

29. DFT of the coating system shall be determined in accordance with SSPC-PA2 in line with the following procedure.

- a. Five spots shall be taken for every 10m<sup>2</sup> of painted areas. Each spot (3.8cm) covers three gauge readings.
- b. if the structure is less than 30m<sup>2</sup>, each 10m<sup>2</sup> should be measured.

# Annexure-I

- c) if the structure is between 30 and 100m<sup>2</sup>, select 3 random 10m<sup>2</sup> test areas and measure.  
d) For structure exceeding 100m<sup>2</sup>, select 3 random 10m<sup>2</sup> testing areas for the first 100m<sup>2</sup> and select 1 random 10m<sup>2</sup> testing area for each additional 100m<sup>2</sup>.  
e) Coating thickness tolerance: Individual reading taken to get a representative measurement for the spot are unrestricted (usually low or high readings are discarded). Spot measurements (the average of 3 gauge readings) must be in the range of  $\pm 20\%$  of minimum total DFT.  
f). Where total dry film thickness accordance with the above procedure falls below the specified minimum, an additional coat of finish paint shall be applied.

Following parameters to be inspected for surface preparation and painting of components.

| Components                                                 | Surface preparation                                                                                                                                                                                                                                                                                       | Painting                                              |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Structures, CLH/VLH, etc<br>(Sl. No. 3,4,5,12,13)          | a) Surface finish - Visual comparator for blast cleaning to Sa2.5 level.<br>b) Surface profile check – by comparator or any suitable method.<br>c) Salt test – by using salt contamination kit<br>Ambient and steel temperature, relative humidity, dew point to be recorded prior to blasting & painting | Visual examination & dry film thickness of each coat. |
| Pressure parts, ducts, etc.<br>(Sl. No. 1,2,6,7,8,9,11,14) | Cleanliness of power tool cleaned surfaces.                                                                                                                                                                                                                                                               | Visual examination & dry film thickness of each coat. |

## 30. Paint application requirements:

- a. Two pack coatings shall be mixed in the ratio recommended by manufacturer to ensure proper and complete curing of the coatings. The base and hardener are to be separately mixed first to obtain a homogenous mixture. The hardener is to be added to the base slowly, with continuous mixing / agitation and not the reverse.  
b. Any addition of thinner to achieve the application viscosity should be made only after the components are thoroughly mixed. Excess thinner is not recommended, as increase in volume, leads to lower DFT, sagging, longer curing time, etc.  
c. Paints containing Zinc, MIO pigments shall be continuously stirred with use of a mechanical agitator whilst being applied, to ensure uniformity over the surface area.  
d. Conventional air spray: the correct combination of air volume, air pressure and fluid flow to give good atomisation to be ensured to get a defect free painted surface.  
e. Air spray (pressure pot) is recommended in cases where large quantities of paint are to be applied as paint in the tank can be prevented from settling, reduces application time and also enables the gun to be turned to any angle to coat objects effectively without spilling paint.  
f. Transport and erection of painted structures shall be carried out only after the drying time specified by the paint manufacturer has elapsed. Handling & packing of painted material shall be appropriate to avoid damage to painting, such as the use of non-metallic slings, etc for handling and by minimizing handling after painting.

## Painting Scheme – Details for procurement & application purposes

| Sl. No. | Generic nature of paint                             | Theoretical Covering Capacity Sq.m per Litre. | No. of pack | Volume solids, % (min) | DFT in microns per coat (approx.) | Shade        | Shade No. to IS5 | Mode of appln. | Over coating interval, Hrs. |
|---------|-----------------------------------------------------|-----------------------------------------------|-------------|------------------------|-----------------------------------|--------------|------------------|----------------|-----------------------------|
| 1       | Epoxy Zinc rich primer to IS14589 Gr.II (latest)    | 8                                             | 2           | 35                     | 40                                | Grey         | --               | Spray          | 24                          |
| 2       | Aliphatic acrylic Polyurethane paint as per IS13213 | 13                                            | 2           | 40                     | 30                                | Phirozi blue | 176 of IS5       | Airless Spray  | 24                          |

# Annexure-I

|    |                                                                                                                              |    |   |    |           |                |                          |                  |    |
|----|------------------------------------------------------------------------------------------------------------------------------|----|---|----|-----------|----------------|--------------------------|------------------|----|
| 3  | Heat resistant Aluminium paint to IS 13183 Grade I/II/III (latest)                                                           | 10 | 1 | -  | 20        | --             | --                       | Brush /<br>Spray | 24 |
| 4  | Red oxide zinc phosphate primer paint to IS 12744 (latest)                                                                   | 10 | 1 | -- | 30        | -              | --                       | Brush /<br>Spray | 12 |
| 5  | Red oxide Zinc Phosphate Dip coat primer paint to PR: CHEM: 09-03                                                            | 10 | 1 | -- | 35        | --             | ---                      | Dip              | 12 |
| 6  | Long oil alkyd synthetic enamel finish paint to IS2932 (latest)                                                              | 17 | 1 | -- | 20        | Reqd.<br>shade | Corrpdg.<br>Shade<br>no. | Brush /<br>Spray | 12 |
| 7  | Temporary Rust preventive fluid to PR: CHE: 09 – 04                                                                          | 10 | 1 | -- | 25        | --             | --                       | --               | 12 |
| 8  | General purpose Aluminium paint to IS 2339 (latest)                                                                          | 10 | 2 | -- | 20        | Aluminum       | --                       | Brush            | 12 |
| 9  | Self- priming surface tolerant high build epoxy paint                                                                        | 8  | 2 | 80 | 100       | --             | --                       | Brush /<br>Spray | 12 |
| 10 | High Build Epoxy MIO coating cured with polyamide hardener, intermediate coat as per IS 16943.                               | 5  | 2 | 60 | 120 (min) | Brown          | --                       | Airless<br>Spray | 24 |
| 11 | Inorganic ethyl self-curing zinc silicate primer as per IS 14946, metallic Zinc content 75% (min) in the dry film by weight. | 7  | 2 | 60 | 80 (min)  | Grey           | --                       | Airless<br>Spray | 24 |

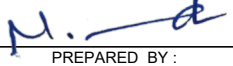
**The covering capacity of paints specified is only approximate. The paints and Rust Preventive fluid shall be procured from BHEL's approved suppliers.**

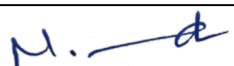
# Annexure-I

## Painting of Damaged Areas

(Areas where the paint has deteriorated badly by erosion and areas where the paint film has lost its adhesion and where the steel has rusted appreciably, should be repainted as follows)

| Sl.No. | Components                                                                 | Surface<br>Prepa-<br>ration                                                              | Primer coat                                       |                            | Intermediate<br>coat  |                 | Finish coat           |                 |                       | Total<br>DFT<br>μm    |
|--------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------|-----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------------|
|        |                                                                            |                                                                                          | Paint                                             | No. of<br>coats            | Paint                 | No. of<br>coats | Paint                 | No. of<br>coats | Shade                 |                       |
| 1      | Paint damaged components fall under<br>Sl.no: 3                            | Power tool<br>cleaning of<br>minimum<br>25mm of<br>surrounding<br>areas to bare<br>metal | Epoxy zinc rich<br>primer to IS<br>14589 Grade II | 2<br>T.DFT<br>80μ<br>(min) | As given in<br>scheme | 1               | As given in<br>scheme | 2               | As given in<br>scheme | As given in<br>scheme |
| 2      | Paint damaged components fall under<br>Sl.no: 1,2,4,5,6,7,8,9,11,12,13,14. | Power tool<br>cleaning to<br>bare metal                                                  | As given in scheme                                |                            |                       |                 |                       |                 |                       |                       |

|  <b>BHARAT HEAVY<br/>ELECTRICALS LIMITED<br/>QA / PIPING<br/>TRICHY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                         |                                                                            | <b>PAINTING SCHEME FOR PIPING</b>                                                                                                           |                                               |                                                                                                   |                                                 |       |                                                                        |                                                 |                                                                    | QPNo: 1836:QPC:11              |                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------|-------|------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                         |                                                                            | <b>PROJECT NAME : - NLC Talabira Thermal Power Project - ( 3 X 800 MW )</b>                                                                 |                                               |                                                                                                   |                                                 |       |                                                                        |                                                 |                                                                    | <b>REV.NO: 01</b>              |                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                         |                                                                            | <b>BHEL CUSTOMER Nos : 1836, 1837, 1838</b>                                                                                                 |                                               |                                                                                                   |                                                 |       |                                                                        |                                                 |                                                                    | <b>Date : 30.05.2026</b>       |                                                                                              |
| Sl.<br>NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PGMA / Description                                                                                                      | Surface<br>Preparation &<br>Surface Profile                                | Primer coat                                                                                                                                 |                                               | Intermediate coat                                                                                 |                                                 |       | Finish coat                                                            |                                                 |                                                                    | Total DFT<br>Microns<br>(Min.) | Contract<br>specification<br>reference                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                         |                                                                            | Primer                                                                                                                                      | No of coats<br>& DFT                          | Paint                                                                                             | No of<br>coats &<br>DFT                         | Shade | Paint                                                                  | No of coats &<br>DFT                            | Shade                                                              |                                |                                                                                              |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                                                                                                                       | 3                                                                          | 4                                                                                                                                           | 5                                             | 6                                                                                                 | 7                                               |       | 9                                                                      | 10                                              | 11                                                                 | 12                             | 13                                                                                           |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Insulated Piping, components<br>( MS / HRH / CRH / Aux Steam<br>lines, Tanks & Vessels ...& Pipe<br>Clamps).            | Blast cleaning to<br>Sa2½ with surface<br>profile 35-50<br>microns         | Inorganic Ethyl<br>Zinc Silicate<br>Primer as per IS<br>14946                                                                               | 1<br>( 60 microns<br>min. per coat<br>)       | -----                                                                                             | -----                                           | ----- | -----                                                                  | -----                                           | Grey                                                               | 60                             | (Spec. Sl. No. 3,<br>Page 18 of 24, Sub<br>Section- B (painting),<br>Section-XII, Vol. II-A) |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Uninsulated Piping, components<br>( Spray Water / Condensate lines,<br>Pipe Clamps...,Tanks & Vessels<br>and ECW Tank ) | SSPC-SP3/ Power<br>Tool Cleaning                                           | Red oxide Zinc<br>Phosphate Primer<br>(Alkyd Base) to IS<br>12744                                                                           | 1<br>( min.DFT =<br>30 microns<br>per coat. ) | -----                                                                                             | -----                                           | ----- | Synthetic enamel<br>paint (long Oil alkyd)<br>to IS 2932               | 2<br>( min.DFT = 20<br>microns per<br>coat )    | Smoke Grey<br>Shade No 692 of<br>IS 5<br>(Refer Note 5)            | 70                             | (Spec. Sl. No. 6,<br>Page 18 of 24, Sub<br>Section- B (painting),<br>Section-XII, Vol. II-A) |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Structures & All auxiliary structural<br>steel components for pipe supports                                             | Abrasive Blast<br>cleaning to SA2 ½<br>(Near white metal)<br>Min 35 Micron | Inorganic Ethyl<br>Zinc Silicate<br>Primer as per IS<br>14946                                                                               | 1<br>( min.DFT =<br>80 Micron<br>per coat )   | High Build<br>Epoxy MIO<br>coating cured<br>with polyamide<br>hardener coat<br>as per IS<br>16943 | 1<br>( DFT=120<br>Micron Min<br>Per coat )      | ----- | \$ Aliphatic Acrylic<br>PU Paint as per<br>IS13213                     | 2 \$<br>( min.DFT = 30<br>Microns per<br>Coat ) | Phirozi blue<br>to Shade No. 176<br>of IS 5.<br><br>(Refer Note 5) | 230 shop<br>+<br>30 site       | (Spec. Sl. No. 1,<br>Page 18 of 24, Sub<br>Section- B (painting),<br>Section-XII, Vol. II-A) |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hangers & Supports-(CLH,VLH)                                                                                            | Blast cleaning to<br>Sa2½ with surface<br>profile 35-50<br>microns         | Epoxy Zinc rich<br>primer to IS 14589<br>Gr.II,% VS = 35<br>Min                                                                             | 1<br>( 40 microns<br>per coat )               | -----                                                                                             | -----                                           | ----- | Aliphatic Acrylic<br>Polyurethane paint<br>to IS13213 ,%VS =<br>40 min | 1<br>( 30 microns<br>per coat )                 | Phirozi Blue Shade<br>No.176 of IS 5                               | 70                             |                                                                                              |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Valves & Gr-91 Clamps                                                                                                   | SSPC-SP3/ Power<br>Tool Cleaning                                           | Heat resistant<br>Aluminum Paints<br>to IS 13183 Gr.I                                                                                       | 1<br>( 20 microns<br>per coat )               | -----                                                                                             | -----                                           | ----- | Heat resistant<br>Aluminum Paints to<br>IS 13183 Gr.I                  | 1<br>( 20 microns<br>per coat )                 | Aluminum                                                           | 40                             |                                                                                              |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Stainless steel / Galvanized items                                                                                      | No painting                                                                |                                                                                                                                             |                                               |                                                                                                   |                                                 |       |                                                                        |                                                 |                                                                    |                                |                                                                                              |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hangers & Supports-( Other than<br>CLH,VLH)                                                                             | Blast cleaning to<br>Sa2½ with surface<br>profile 35-50<br>microns         | Red oxide Zinc<br>Phosphate Primer<br>(Alkyd Base) to IS<br>12744                                                                           | 1<br>( min.DFT =<br>30 microns<br>per coat. ) | -----                                                                                             | -----                                           | ----- | Synthetic enamel<br>paint (long Oil alkyd)<br>to IS 2932               | 2<br>( min.DFT = 20<br>microns per<br>coat )    | Smoke Grey<br>Shade No 692 of<br>IS 5<br>(Refer Note 3 & 5)        | 70                             | (Spec. Sl. No. 6,<br>Page 18 of 24, Sub<br>Section- B (painting),<br>Section-XII, Vol. II-A) |
| <p><b>\$ :-</b> Out of 2 coats of Aliphatic Acrylic PU finish paint, one coat of Aliphatic Acrylic PU finish paint shall be given at shop / subcontracting works and second coat of Aliphatic Acrylic PU finish paint shall be applied at site after erection by brush and / or spray.</p> <p><b>Note.1:</b>Piping above 60 Deg C are insulated. However if Piping above 60 degC is uninsulated, then as per technical specifications, it has to be painted in accordance with S No.1.<br/> <b>2:</b>Plates, Pipes &amp; Tubing Cut to size at site : Shall follow 2 coats of 60 microns of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744 .<br/> <b>3:</b>Carbon steel &amp; Alloy steel (upto Gr22) Pipe Clamps : Painting shall be same as pipe material; For Gr-91 clamps : S. No:5 of this painting scheme to be followed<br/> <b>4:</b>Weld Edges for Pipes : Shall be painted with weldable primer with minimum 25 microns.<br/> <b>5:</b>Shade for finish coat to be done at site shall be as per project specification/contract requirement.</p> |                                                                                                                         |                                                                            |                                                                                                                                             |                                               |                                                                                                   |                                                 |       |                                                                        |                                                 |                                                                    |                                |                                                                                              |
| <br><b>PREPARED BY :</b><br>M MANOJ PANDI MGR/Piping Quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                         |                                                                            | <br><b>APPROVED BY:</b><br>K. SARANYA MGR/Piping Quality |                                               |                                                                                                   | For Customer use<br><b>MDL : 1836:QPC:QA:11</b> |       |                                                                        |                                                 |                                                                    | Page 1/1                       |                                                                                              |

|  <b>BHARAT HEAVY ELECTRICALS LIMITED</b><br><b>QA / PIPING TRICHY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                   | <b>PAINTING SCHEME FOR LP PIPING</b><br>(CW / ACW / ECW / Plant water, Compressed Air Piping, LDO system, ETP, etc. )<br><b>PROJECT NAME : - NLC Talabira Thermal Power Project - ( 3 X 800 MW )</b><br><b>BHEL CUSTOMER Nos : 1836,1837,1838</b> |                                 |                                                                                 |                                  |                                                 |                                                     |                                |                | <b>QPNo: 1836:QPC:12</b><br><b>REV.NO: 01</b><br><b>Dt : 30.05.2026</b> |                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------|-----------------------------------------------------|--------------------------------|----------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| SI. NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | PGMA / Description                                                                                                                                                                                                                               | Surface Preparation & Surface Profile                                                                                                                                                                                                                             | Primer coat                                                                                                                                                                                                                                       |                                 | Intermediate coat                                                               |                                  |                                                 | Finish coat                                         |                                |                | Total DFT Microns (Min.)                                                | Contract specification reference                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                   | 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 - CW/ACW Pipe (for pipe - dia - 1000 mm and above)                                                                                                                                                                          | Blast Cleaning SSPC SP-10 SA 2½ (Refer Note 1)                                                                                                                                                                                                                    | Epoxy Zinc rich primer to IS14589 Gr.II (Refer Note 2)                                                                                                                                                                                            | 1 (50 Microns Min. per coat)    | ----                                                                            | ----                             | ----                                            | Coal tar epoxy (Refer Note 2)                       | 3 (150 Microns Min. per coat)  | ----           | 500 Microns (Refer Note 3)                                              | Vol II-A/ Section-XII/Sub-Section-A Cl.4.03.03                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (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<br>a) Over ground piping of ACW.( For all diameters)<br>b) External Surface of ECW, Plant water ( For all diameters)<br>c) LDO system.                                                                                          | Abrasive Blast cleaning to Sa 2 1/2 (35-50 microns)                                                                                                                                                                                                               | Inorganic Ethyl Zinc Silicate Primer as per IS 14946                                                                                                                                                                                              | 1 ( 80 microns min. per coat. ) | High Build Epoxy MIO coating cured with polyamide hardener coat as per IS 16943 | 1 ( 120 microns min. per coat. ) | ----                                            | Aliphatic acrylic Polyurethane paint as per IS13213 | 2 ( 30 Microns min. per Coat ) | (Refer Note 4) | 260 Microns                                                             | (Spec. Sl. No. 7, Page 19 of 24, Sub Section-B (painting), Section-XII, Vol. II-A) |
| 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>4. Color code for water piping is Sea Green to Shade No. 217 of IS 5.<br>Color code for air piping is sky blue to Shade No. 101 of IS 5.<br>Color code for Light diesel oil (LDO) system piping is Dark Brown to Shade No. 412 of IS 5.<br>** Shade for finish coat to be done at site shall be as per project specification/contract requirement. |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                 |                                                                                 |                                  |                                                 |                                                     |                                |                |                                                                         |                                                                                    |
| <br>PREPARED BY :<br>M MANOJ PANDI MGR/Piping Quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                   | <br>APPROVED BY:<br>K. SARANYA MGR/Piping Quality                                                                                                             |                                 |                                                                                 |                                  | For Customer use<br><b>MDL : 1836:QPC:QA:12</b> |                                                     |                                |                | Page 1/1                                                                |                                                                                    |

|     |            |                                                                             |     |     |     |
|-----|------------|-----------------------------------------------------------------------------|-----|-----|-----|
| 01  | 07.07.2026 | Revised based on customer comments. Detailed replies available in CRS sheet | RK  | RK  | TV  |
| 00  | 28.11.2025 | First release                                                               | RK  | RK  | TV  |
| REV | DATE       | DESCRIPTION / NOTE                                                          | PRD | CHD | APD |

## REVISIONS

TITLE:

## PAINTING SCHEME FOR FAN, ESP, APH AND G&D (BHEL RANIPET SUPPLY ITEMS)

OWNER:



**NLC INDIA LIMITED**

OWNER'S CONSULTANT:



**DEVELOPMENT CONSULTANTS  
PRIVATE LIMITED**  
KOLKATA

PROJECT:

## NLC TALABIRA THERMAL POWER PROJECT PHASE - 1 (3 X 800 MW)

EPC CONTRACTOR:



**BHARAT HEAVY ELECTRICALS LTD.**  
BOILER AUXILIARIES PLANT, RANIPET- 632406

|             |              |                                         |
|-------------|--------------|-----------------------------------------|
| Prepared by | Renjith. K   | STATUS: FOR APPROVAL                    |
| Checked by  | Renjith. K   | BHEL CUST NO: R8/1557, R8/1558, R8/1559 |
| Approved by | T. Venugopal | REV NO: 01                              |

**BHEL DRG / DOC NO.: RPT-MQ-1557-PS-001; REV: 01**

|                                                                                                                                                                                                 |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| DEVELOPMENT CONSULTANTS PVT. LIMITED.                                                                                                                                                           |                            |
| Reviewed only for general conference with contract drawings and specifications. Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract documents. |                            |
| ACTION 2                                                                                                                                                                                        | DATE 16.07.2026            |
| DISSEMINATED BY: AD                                                                                                                                                                             |                            |
| 1. Approved                                                                                                                                                                                     | 3. Returned with Comments. |
| 2. Approved except as noted                                                                                                                                                                     | 4. For information only    |
| SEE COVERING LETTER                                                                                                                                                                             |                            |
| LETTER REF NO.                                                                                                                                                                                  | DATE                       |



**Bharat Heavy Electricals Limited**  
**Boiler Auxiliaries Plant**  
**Ranipet – 632 406**

|              |                       |
|--------------|-----------------------|
| BHEL DOC NO. | PS: TALABIRA: R8:1557 |
| REVISION NO. | 01                    |
| DATE         | 07-07-2026            |

**NLC INDIA LIMITED –**  
**TALABIRA THERMAL POWER PROJECT PHASE - I (3 X 800 MW)**  
**PAINTING SCHEDULE FOR FAN, ESP, APH, GATE & DAMPER AND**  
**CHIMNEY FOR AUX. BOILER**

**BHEL MDL NO: RPT-MQ-1557-PS-001, REV. 01**

**BHEL RANIPET Customer No(s): R8/1557, R8/1558 & R8/1559**

| Prepared & Reviewed By                                                              | Approved By                                                                           |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| Renjith K / Sr. Manager (QA)                                                        | T. Venugopal / AGM (Quality)                                                          |

| SI<br>No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |                     | FINISH |                     | TOTAL<br>DFT IN<br>(µm<br>min.) | CONTRACT<br>SPECIFICATION<br>REFERENCE |
|----------|------------------|------|---------------------|--------|---------------------|--------|---------------------|---------------------------------|----------------------------------------|
|          |                  |      |                     | PAINT  | DFT<br>(µm<br>min.) | PAINT  | DFT<br>(µm<br>min.) |                                 |                                        |

## RECORD OF REVISION

| REV<br>NO | EFFECTIVE<br>DATE | DETAILS OF REVISION MADE                                                  |
|-----------|-------------------|---------------------------------------------------------------------------|
| 00        | 28.11.2025        | Original issue – Tender reference provided in Table (Sl. No. 8)           |
| 01        | 07.07.2026        | Revised based on customer comments. Detailed reply available in CRS sheet |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 1. AIR PRE-HEATER (APH)

|    |                                                                                              |                        |                |                                       |                                                                                                                                                                          |    |    |    |    |                                                                                                                   |
|----|----------------------------------------------------------------------------------------------|------------------------|----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|-------------------------------------------------------------------------------------------------------------------|
| 01 | Steam coil APH<br>Temp > 95°C<br>(Insulated surface)                                         |                        | 50510          | Power Tool cleaning to St3 (SSPC-SP3) | Two Coats Red Oxide Zinc phosphate prime to IS:12744                                                                                                                     | 60 | -- | -- | 60 | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 6 – temp. protection till erection or insulation |
| 02 | Module assembly, Tubular Air heater (Insulated)<br>– Temp > 95°C<br>(Flue gas swept surface) |                        | 52010<br>50121 | Power Tool cleaning to St3 (SSPC-SP3) | Two Coats Red Oxide Zinc phosphate prime to IS:12744                                                                                                                     | 60 | -- | -- | 60 |                                                                                                                   |
| 03 | Heating Element with Baskets<br>(Flue gas swept surface)                                     |                        | 52010          | Power Tool cleaning to St3 (SSPC-SP3) | Temporary Rust Preventive Oil application (Wet) as per PRQA 522<br><b>Note:</b> Heating elements are assembled in module assy after dipping in the rust preventive fluid |    |    |    |    |                                                                                                                   |
| 04 | Rotor post assembly<br>– Temp > 95°C<br>(Flue gas swept surface)                             |                        | 52011          | Power Tool cleaning to St3 (SSPC-SP3) | Two Coats Red Oxide Zinc phosphate prime to IS:12744                                                                                                                     | 60 | -- | -- | 60 | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 6 – temp. protection till erection or insulation |
| 05 | Pin rack assembly<br>(Machined surface)                                                      |                        | 52012          | ---                                   | Temp rust preventive as per PRQA 523                                                                                                                                     | 20 | -- | -- | 20 |                                                                                                                   |
| 06 | Radial Seals<br>–Temp > 95°C                                                                 | T Bars                 | 52013          | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                                                                 | 60 | -- | -- | 60 | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 6 – temp. protection till erection or insulation |
|    |                                                                                              | Seals                  |                |                                       | Temp. Rust Preventive Oil as per PRQA 523                                                                                                                                | 20 | -- | -- | 20 |                                                                                                                   |
| 07 | Rotor Housing Assembly<br>– Temp > 95°C                                                      | Insulated Side         | 52030          | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                                                                 | 60 | -- | -- | 60 | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 6 – temp. protection till erection or insulation |
|    |                                                                                              | Flue gas Swept Surface |                |                                       | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                                                                 | 60 | -- | -- | 60 |                                                                                                                   |
| 08 | Hot and Cold End Connecting Plate Assembly<br>– Temp > 95°C                                  | Insulated Side         | 52041<br>52042 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                                                                 | 60 | -- | -- | 60 |                                                                                                                   |
|    |                                                                                              | Flue gas Swept Surface |                |                                       | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                                                                 | 60 | -- | -- | 60 |                                                                                                                   |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                    |                |                                             |                                                                |    |                                                                                              |    |     |                                                                                      |  |
|----|----------------------------------------------------------------------------------------------------|----------------|---------------------------------------------|----------------------------------------------------------------|----|----------------------------------------------------------------------------------------------|----|-----|--------------------------------------------------------------------------------------|--|
| 09 | Axial seals<br>(Machined surface)                                                                  | 52054          | Power Tool cleaning to St3 (SSPC-SP3)       | Temp. Rust Preventive Oil as per PRQA 523                      | 20 | --                                                                                           | -- | 20  |                                                                                      |  |
| 10 | Bypass seals<br>(Machined surface)                                                                 | 52055          | Power Tool cleaning to St3 (SSPC-SP3)       | Temp. Rust Preventive Oil as per PRQA 523                      | 20 | --                                                                                           | -- | 20  |                                                                                      |  |
| 11 | Rotor Drive assembly<br>With bracket, Air Motor,<br>Gear Box – Temp <95°C<br>(Uninsulated surface) | 52100          | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 | Vol. II-<br>A/Section-<br>XII/Sub-Section-<br>B Painting,<br>pg 18 of 24,<br>sl.no 6 |  |
| 12 | Air seal piping<br>Temp< 95° C<br>(Uninsulated surface)                                            | 52211          | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |  |
| 13 | Access door –<br>Temp. > 95 ° C<br>(Insulated surface)                                             | 52220          | Power Tool cleaning to St3 (SSPC-SP3)       | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (two<br>coats) | 60 | --                                                                                           | -- | 60  |                                                                                      |  |
| 14 | Observation port with light                                                                        | 52220          | No painting, as the same is made of Glass   |                                                                |    |                                                                                              |    |     |                                                                                      |  |
|    | Other than glass part – Temp<br>> 95°C<br>(Insulated surface)                                      | 52220          | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 | Vol. II-<br>A/Section-<br>XII/Sub-Section-<br>B Painting,<br>pg 18 of 24,<br>sl.no 6 |  |
| 15 | Rotor Stoppage alarm                                                                               | 52220          | Made of Aluminium (No painting is required) |                                                                |    |                                                                                              |    |     |                                                                                      |  |
|    | Other than aluminum - Temp<br>> 95°C<br>(Insulated surface)                                        |                | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 | Vol. II-<br>A/Section-<br>XII/Sub-Section-<br>B Painting,<br>pg 18 of 24,<br>sl.no 6 |  |
| 16 | Air receiver – Temp < 95°C<br>(Uninsulated surface)                                                | 52101          | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |  |
| 17 | Lifting beams, special<br>Tools & tackles –<br>Temp < 95°C<br>(Uninsulated surface)                | 52220<br>52000 | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744   | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |  |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                   |                         |                                          |                                                              |    |                                                                                              |    |     |                                                                                      |
|----|---------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------|--------------------------------------------------------------|----|----------------------------------------------------------------------------------------------|----|-----|--------------------------------------------------------------------------------------|
|    | T C pipe Assy.<br>(Stainless Steel part)                                                          | 52220                   | No Painting                              |                                                              |    |                                                                                              |    |     |                                                                                      |
| 18 | T C pipe Assy.<br>(Non Stainless-Steel part) –<br>Temp < 95°C<br>(Uninsulated surface)            | 52220                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 | Vol. II-<br>A/Section-<br>XII/Sub-Section-<br>B Painting,<br>pg 18 of 24,<br>sl.no 6 |
| 19 | Guide Bearing Assembly –<br>Temp < 95°C<br>(Uninsulated surface)                                  | 52261                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 20 | Supporting Bearing Assembly<br>– Temp < 95°C<br>(Uninsulated surface)                             | 52262                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 21 | Oil piping Hot end–<br>Temp < 95°C<br>(Uninsulated surface)                                       | 52271                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 22 | Oil piping cold end–<br>Temp < 95°C<br>(Uninsulated surface)                                      | 52272                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 23 | Oil circulating units –<br>Temp < 95°C<br>(Uninsulated surface)                                   | 52274                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 24 | Washing manifold &<br>deluge assy items–<br>Temp < 95°C<br>(Uninsulated surface)                  | 52301<br>52302          | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 25 | Cleaning Device assemblies<br>Tube with Nozzle, HP Pump –<br>Temp < 95°C<br>(Uninsulated surface) | 52338<br>52339<br>52341 | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 26 | Cleaning device drive–<br>Temp < 95°C<br>(Uninsulated surface)                                    | 52339                   | Power Tool cleaning to<br>St3 (SSPC-SP3) | Two coats of Red Oxide Zinc<br>Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade<br>692 of IS 5 (Two coats of 20<br>µm) | 40 | 100 |                                                                                      |
| 27 | Commissioning spares and<br>Mandatory spares                                                      | 52988                   | As per respective items as above         |                                                              |    |                                                                                              |    |     |                                                                                      |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 2. FANS

|    |                                                                                                                                                                                                              |                                                                               |                                             |                                                                                                                         |    |                                                                                     |    |     |                                                                                               |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|-----|-----------------------------------------------------------------------------------------------|
| 01 | Foundation Material of FD, ID, PA, Seal Air Fans & Aux. FD Fan (Machined surface)                                                                                                                            | 55011<br>55021<br>55031<br>56001                                              | Temp. Rust Preventive Fluid as per PRQA 523 |                                                                                                                         | 20 | --                                                                                  | -- | 20  |                                                                                               |
| 02 | Foundation Material of FD, ID & PA Fans – Packer Plates<br><br>Seal Air Fan Motor Base Frame / Plate<br><br>Base Frame for Actuators of FD, ID & PA Fans                                                     | 55011<br>55021<br>55031<br>55516<br>55628<br>55635<br>55019<br>55029<br>55039 | Power Tool cleaning to St3 (SSPC-SP3)       | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                                               | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 6                            |
| 03 | <b>FD FAN &lt;95° C Surface Temperature Static Parts</b> - Insulated Surface (Outside) & Ambient Air swept surface (Inside) setting & indication shaft assembly, expansion joint parts (Uninsulated surface) | 55516<br>55716<br>55816<br>55410<br>55510                                     | Power tool cleaning to St3(SSPC-SP3)        | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                | 60 | Synthetic Enamel to IS2932 Shade: Smoke Grey Shade 692 of IS 5 (Two coats)          | 40 | 100 |                                                                                               |
|    | <b>Rotating Parts</b> (Inside the Insulated static parts – protection up to erection)                                                                                                                        | 55216                                                                         | Power tool cleaning to St3 (SSPC-SP3)       | Epoxy based Zinc Phosphate Primer (Two Pack system) as per IS:13238 (Two coats) per coat= 30µm & Total DFT = 60 µm min. | 60 | --                                                                                  | -- | 60  | BHEL internal painting scheme for rotors better than contract requirement of red oxide primer |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                                                                                                                                                   |                                                                                                                                              |                                       |                                                                                                                         |    |                                                                                     |    |     |                                                                                               |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|-----|-----------------------------------------------------------------------------------------------|
| 04 | <b>ID FAN &gt;95° C Surface Temperature Static Parts</b> - Insulated Surface (Outside), expansion joint parts                                                                                                                     | 55628<br>55728<br>55828<br>55420<br>55520                                                                                                    | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                | 60 | --                                                                                  | -- | 60  | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6                         |
|    | <b>Static Parts</b> – Flue gas swept surface (Inside), setting & indication shaft assembly                                                                                                                                        |                                                                                                                                              | Power tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                | 60 | --                                                                                  | -- | 60  |                                                                                               |
|    | <b>Rotating Parts</b> - (Inside the insulated Static Parts – protection up to erection) (Flue gas swept surface)                                                                                                                  | 55328                                                                                                                                        | Power tool cleaning to St3(SSPC-SP3)  | Epoxy based Zinc Phosphate Primer (Two Pack system) as per IS:13238 (Two coats) per coat= 30µm & Total DFT = 60 µm min. | 60 | --                                                                                  | -- | 60  | BHEL internal painting scheme for rotors better than contract requirement of red oxide primer |
| 05 | <b>PA FAN &lt;95° C surface Temperature Static parts</b> – Insulated Surface (Outside) & Ambient Air swept surface (Inside) setting & indication shaft assembly, expansion joint parts                                            | 55635<br>55735<br>55835<br>55430<br>55530                                                                                                    | Power tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                                                | 60 | Synthetic Enamel to IS2932 Shade: Smoke Grey Shade 692 of IS 5 (Two coats)          | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6                         |
|    | <b>Rotating Parts</b> (Inside the insulated static parts- protection up to erection)                                                                                                                                              | 55335                                                                                                                                        | Power tool cleaning to St3 (SSPC-SP3) | Epoxy based Zinc Phosphate Primer (Two Pack system) as per IS:13238 (Two coats) per coat= 30µm & Total DFT = 60 µm min. | 60 | --                                                                                  | -- | 60  | BHEL internal painting scheme for rotors better than contract requirement of red oxide primer |
| 06 | <b>Coupling and coupling Guard</b> – for FD, ID & PA FAN, Seal Air FAN & FD Fan (Aux. Boiler), SA Fan motor canopy, Aux. FD Fan motor canopy, FD, ID, PA Fan LOS canopy, Fan tools & fixtures – temp < 95°C (Uninsulated surface) | 55015<br>55025<br>55035<br>55210<br>55220<br>55230<br>56000<br>56075<br>56079<br>55810<br>55820<br>55830<br>56005<br>56009<br>56800<br>56870 | Power tool cleaning to St3 (SSPC-SP3) | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                                                | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6                         |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                                                                                                                           |                                                                      |                                                                                                          |                                                                                                     |    |                                                                                     |    |     |                                                                        |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|-----|------------------------------------------------------------------------|
| 07 | <b>Lub oil System</b> – For FD, ID & PA FAN (Uninsulated surface)                                                                                                                                         | 55910<br>55920<br>55930                                              | Power Tool cleaning to St3 (SSPC-SP3)                                                                    | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                           | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm)  | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 08 | <b>Silencer for FD &amp; PA FAN</b> <95° C Surface Temperature Insulated Surface (Insulated surface)                                                                                                      | 55911<br>55931                                                       | Power Tool cleaning to St3 (SSPC-SP3)                                                                    | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                           | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm)  | 40 | 100 |                                                                        |
| 09 | Radial pent house ventilation /ID sealing /cooling fans/ Seal Air Fan & FD FAN (Aux. Boiler), FD Fan bearing housing, Aux FD Fan Rotor, Aux FD Bearing HSG & Acc, Aux FD Fan Stator (Uninsulated surface) | 55024<br>56161<br>56104<br>56173<br>56300<br>56373<br>56404<br>56473 | Power tool cleaning to St3 (SSPC-SP3)                                                                    | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 (30 µm per coat)                          | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 10 | FD, ID, PA & SA Fan, Aux. FD Fan Stair & Handrail – Galvanizing items (as per BHEL Engineering document)                                                                                                  | 55012<br>55022<br>55032<br>56072<br>56002                            | Gratings- Blast cleaning to Sa 2½<br>Other Items- Power tool cleaning to St3(SSPC-SP3) and acid cleaning | Hot Dip Galvanizing to 610 gm per Sq. Meter (minimum) and to a coating thickness of 85 µm (minimum) |    |                                                                                     |    |     | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 27 |
|    | FD, ID & PA Fan, Aux. FD Fan Stair & Handrail – Other than galvanized structural items                                                                                                                    |                                                                      | Power Tool cleaning to St3 (SSPC-SP3)                                                                    | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                           | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm)  | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

### 3. GATES & DAMPER

|    |                                                                                                                                                 |                                                                                                                |                                                                                                          |                                                                                                     |    |                                                                                    |    |     |                                                                        |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------|----|-----|------------------------------------------------------------------------|
| 01 | Gates & Dampers > 95°C up to 400 °C<br>Insulated Surfaces                                                                                       | 57063, 57083, 57203, 57223, 57270, 57273, 57360, 57413, 57433, 57460, 57470, 57480, 57490, 57600, 57613, 57620 | Power Tool cleaning to St3 (SSPC-SP3)                                                                    | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                            | 60 | --                                                                                 | -- | 60  | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 02 | Gates & Dampers, Seal Air piping < 95 ° C<br>(Uninsulated surface)                                                                              | 57010, 57020, 57023, 57033, 57073, 57110, 57113, 57143, 57160, 57173, 57A13                                    | Power tool cleaning to St3 (SSPC-SP3)                                                                    | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                           | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                        |
| 03 | Ladder, Cage for Ladder, Toe Guard Plate<br>Floor Grill, Hand Rails, Hand Rail Post,<br>(Uninsulated surface)                                   | 57466<br>57666                                                                                                 | Gratings- Blast cleaning to Sa 2½<br>Other Items - Power tool cleaning to St3 (SSPC-SP3) & Acid cleaning | Hot Dip Galvanizing to 610 gm per Sq. Meter (minimum) and to a coating thickness of 85 µm (minimum) |    |                                                                                    |    |     | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 27 |
| 04 | Other Structural Items – other than sl.no. 3 of above.<br>Blower with motor, valves, Mounting bracket, Seal air piping<br>(Uninsulated surface) | 57466, 57666, 57209, 57141, 57491, 57S91, 57497, 57S09, 57S97, 57S41                                           | Power tool cleaning to St3(SSPC-SP3)                                                                     | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744                                           | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 05 | Ducts Commissioning Spares                                                                                                                      | 57997<br>57988                                                                                                 | As per respective items mentioned in this Painting Scheme                                                |                                                                                                     |    |                                                                                    |    |     |                                                                        |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

#### 4. ELECTROSTATIC PRECIPITATOR (ESP)

|    |                                                                                       |       |                                                                                   |                                                           |    |                                                                                     |    |     |                                                                                                                      |
|----|---------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|-----|----------------------------------------------------------------------------------------------------------------------|
| 1  | Insulator Housing Assembly – Temp > 95°C (Insulated surface)                          | 79206 | Power Tool cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  | Vol. II- A/Section- XII/Sub-Section- B Painting, pg 18 of 24, sl.no 6                                                |
| 2  | Gas Distribution Assembly– Temp > 95°C (Flue gas swept surface)                       | 79208 | Power Tool cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                                                                      |
| 3  | GD Rapping Mechanism – Temp > 95°C (Flue gas swept surface)                           | 79209 | Power Tool cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                                                                      |
| 4  | GD Drive Arrangements – Temp< 95°C (Uninsulated surface)                              | 79210 | Power tool cleaning to St3(SSPC-SP3                                               | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                                                                      |
| 5  | Gas Screening – Temp > 95°C (Flue gas swept surface)                                  | 79211 | Power Tool cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  | Vol. II- A/Section- XII/Sub-Section- B Painting, pg 18 of 24, sl.no 6 – temp. protection till erection or insulation |
| 6  | Emitting System suspension – Temp > 95°C (Flue gas swept surface)                     | 79213 | Power Tool cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                                                                      |
| 7  | Emitting Electrode – Hook Part                                                        | 79215 | Rust preventive application on Hook part only (Electrode Wire is Stainless Steel) |                                                           |    |                                                                                     |    |     |                                                                                                                      |
| 8  | Emitting Electrode Rapping Mechanism – Temp > 95°C (Flue gas swept surface)           | 79216 | Power Tool Cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  | Vol. II- A/Section- XII/Sub-Section- B Painting, pg 18 of 24, sl.no 6                                                |
| 9  | Drive Arrangement for Emitting System– Temp < 95°C (Uninsulated surface)              | 79217 | Power Tool Cleaning to St3 (SSPC-SP3)                                             | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                                                                      |
| 10 | Suspension Arrangement for Collecting Electrode– Temp > 95°C (Flue gas swept surface) | 79219 | Power Tool Cleaning to St3 (SSPC-SP3)                                             | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                                                                      |
| 11 | Collecting Electrode (Uninsulated surface)                                            | 79220 | Rust Preventive Fluid as per TEP AQCS RP                                          |                                                           |    |                                                                                     |    |     |                                                                                                                      |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                    |       |                                       |                                                           |    |                                                                                     |    |     |                                                                       |
|----|------------------------------------------------------------------------------------|-------|---------------------------------------|-----------------------------------------------------------|----|-------------------------------------------------------------------------------------|----|-----|-----------------------------------------------------------------------|
| 12 | Lifting Beam for Collecting Electrode (Uninsulated surface)                        | 79220 | Power Tool Cleaning to St3 (SSPC-SP3) | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6 |
| 13 | Frame of Emitting System-Top – Temp > 95°C (Flue gas swept surface)                | 79221 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 14 | Frame of Emitting System - Bottom – Temp > 95°C (Flue gas swept surface)           | 79222 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 15 | Inspection /Access Door (Uninsulated surface)                                      | 79223 | Power Tool Cleaning to St3 (SSPC-SP3) | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                       |
| 16 | Shock Bars – Temp > 95°C (Flue gas swept surface)                                  | 79224 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 17 | Collecting Electrode (CE) Rapping Mechanism – Temp > 95°C (Flue gas swept surface) | 79225 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 18 | Drive Arrangements for CE Rapping – Temp < 95°C (Uninsulated surface)              | 79226 | Power Tool Cleaning to St3 (SSPC-SP3) | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744  | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                       |
| 19 | ESP Roof Beams – Temp > 95°C (Flue gas swept surface)                              | 79228 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 20 | Frame of Emitting System – Middle – Temp > 95°C (Flue gas swept surface)           | 79232 | Power Tool cleaning to St3 (SSPC-SP3) | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)  | 60 | --                                                                                  | -- | 60  |                                                                       |
| 21 | Outer Roof –EP - – Temp < 95°C (Uninsulated surface)                               | 79242 | Power Tool Cleaning to St3 (SSPC-SP3) | Two coats of Red Oxide Zinc Phosphate Primer to IS: 12744 | 60 | Synthetic Enamel to IS2932 Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                       |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                            |       |                                          |                                                             |    |    |    |    |                                                                                         |
|----|--------------------------------------------------------------------------------------------|-------|------------------------------------------|-------------------------------------------------------------|----|----|----|----|-----------------------------------------------------------------------------------------|
| 22 | Hopper Ridges – Temp > 95°C<br>(Flue gas swept surface)                                    | 79243 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 | Vol. II-<br>A/Section-<br>XII/Sub-<br>Section-B<br>Painting,<br>pg 18 of 24,<br>sl.no 6 |
| 23 | Hopper Upper part – Temp> 95°C<br>(Insulated side & Flue gas swept surface)                | 79244 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |
| 24 | Hopper Middle & Lower part – Temp > 95°C<br>(Insulated side & Flue gas swept surface)      | 79245 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |
| 25 | Insulator Support Panel – Temp > 95°C<br>(Insulated side & Flue gas swept surface)         | 79246 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |
| 26 | Roof Panel Assy – Temp > 95°C<br>(Insulated side & Flue gas swept surface)                 | 79247 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |
| 27 | Casing Structure – Temp > 95°C<br>(Flue gas swept surface)                                 | 79248 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |
| 28 | Casing (Shell, Side Panels, Gables & GD Housing) – Temp > 95°C<br>(Flue gas swept surface) | 79249 | Power Tool cleaning to St3<br>(SSPC-SP3) | Red Oxide Zinc Phosphate<br>Primer to IS: 12744 (Two coats) | 60 | -- | -- | 60 |                                                                                         |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                                      |                                           |                                                                                                          |                                                                                                 |    |                                                                                        |    |     |                                                                        |
|----|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------|----|-----|------------------------------------------------------------------------|
| 29 | ESP Funnel Assembly – Temp > 95°C<br>(Flue gas swept surface)                                                        | 79250                                     | Power Tool cleaning to St3 (SSPC-SP3)                                                                    | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                        | 60 | --                                                                                     | -- | 60  | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 30 | ESP Pent House – Temp <95°C<br>(Other than columns)<br>(Uninsulated surface)<br><b>Columns - Refer to Sl. No: 38</b> | 79255                                     | Power tool cleaning to St3(SSPC-SP3)                                                                     | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                        | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
| 31 | Splitters & Guide Vanes, Fixing component of ESP insulation – Temp > 95°C<br>(Flue Gas Swept Surface)                | 79257<br>79289<br>79268<br>79264          | Power tool cleaning to St3(SSPC-SP3)                                                                     | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats)                                        | 60 | --                                                                                     | -- | 60  |                                                                        |
| 32 | ESP Performance Test Equipment, Miscellaneous items – Temp < 95°C<br>(Uninsulated surface)                           | 79261                                     | Power tool cleaning to St3(SSPC-SP3)                                                                     | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                        | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                        |
| 33 | Water Washing System – Temp < 95°C<br>(Uninsulated surface)                                                          | 79266                                     |                                                                                                          |                                                                                                 |    |                                                                                        |    |     |                                                                        |
| 34 | Hand Rail Post, Bend, ERW Tubes, Floor Grill and Step Tread                                                          | 79265<br>89610<br>89611<br>89612<br>89613 | Gratings- Blast cleaning to Sa 2½<br>Other Items- Power tool cleaning to St3(SSPC-SP3) and acid cleaning | Hot Dip Galvanizing to 610 gm sq. Meter (minimum) and to a coating thickness of 85 µm (minimum) |    |                                                                                        |    |     | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 27 |
| 35 | Commissioning Spares                                                                                                 | 79988<br>79997                            | As per respective item, as listed in the painting schedule                                               |                                                                                                 |    |                                                                                        |    |     |                                                                        |
| 36 | Tools & Tackles– Temp < 95°C<br>(Uninsulated surface)                                                                | 79996                                     | Power tool cleaning to St3(SSPC-SP3)                                                                     | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                        | 60 | Synthetic Enamel to IS2932<br>Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

|    |                                                                                                                                                                                                          |                         |                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                    |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 37 | Other than galvanized items for Approach Platform for Hopper                                                                                                                                             | 79265                   | Blast Cleaning to Sa 2.5<br>Near White metal finish of ISO 8501-1 with surface roughness profile to 40-60 µm | <b>Primer Coat:</b> One coat of two component moisture curing Inorganic Ethyl Zinc Silicate Primer to IS 14946, Metallic Zinc content- 75% (min) in dry film, <b>DFT = 80µm per coat (min)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Vol. II-A/Section-XII/Sub-Section-B Painting, pg 18 of 24, sl.no 1 |
| 38 | Supporting Structure for ESP, Penthouse columns (Refer note 5 for surface embedded in concrete)                                                                                                          | 79255<br>79281          |                                                                                                              | <b>Intermediate Coat:</b> One coat of two component Polyamide cured Epoxy based MIO pigmented coat <b>DFT = 120µm per coat (min)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                    |
| 39 | Other than galvanized items vide sl. No. 34, like Stair stringer Channels, Bracket, Support Bracket, Frames Loose Channels, Toe Plates, Stiffener Plates and Angles for EP Galleries, Stair and Walk Way | 79265<br>89610<br>89611 |                                                                                                              | <b>Finish Coat:</b> Two coats of Aliphatic Acrylic Polyurethane to IS 13213, <b>DFT = 30 µm per coat (min) Total - 60 µm (min)</b> Shade <b>Dark Admiralty Grey to Shade No. 632 of IS 5</b><br><br><b>Note:</b><br><br><b>1.</b> The total paint thickness Primer (80 µm) + Intermediate (120 µm) + Finish coat (60 µm) shall be minimum <b>260 µm</b> .<br><br><b>2.</b> DFT of individual paint coat shall be ensured separately and the same shall meet the specified minimum DFT of each coat as given above.<br><br><b>3.</b> Bottom of base plate including below zero level portion marked in EP Supporting Columns which will be embedded in concrete, those surfaces shall be prepared by manual cleaning to ST3 and provided with primer coat of chlorinated rubber-based zinc phosphate primer of min. 50 µm DFT. |                                                                    |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 5. CHIMNEY FOR AUX. BOILER

|    |                                                                               |                        |                         |                                                                          |                                                                                         |    |                                                                                    |    |     |                                                                        |
|----|-------------------------------------------------------------------------------|------------------------|-------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------|----|-----|------------------------------------------------------------------------|
| 01 | Chimney Foundation Materials                                                  |                        | 87010                   | Power Tool cleaning to St3 (SSPC-SP3)                                    | Temp. Rust Preventive Fluid as per PRQA 523                                             | 20 | --                                                                                 | -- | 20  |                                                                        |
| 02 | Chimney shell- temp > 95°C                                                    | Insulated Side         | 87100                   | Power Tool cleaning to St3 (SSPC-SP3)                                    | Heat Resistant Aluminum paint Gr I of IS: 13183 (Two coats)                             | 40 | --                                                                                 | -- | 40  | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |
|    |                                                                               | Flue Gas Swept Surface |                         |                                                                          | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two Coats)                                | 60 | --                                                                                 | -- | 60  |                                                                        |
| 03 | Chimney Ducts, Chimney Ins fix comp – temp > 95°C                             | Insulated Side         | 87150<br>87960          | Power Tool cleaning to St3 (SSPC-SP3)                                    | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two Coats)                                | 60 | --                                                                                 | -- | 60  |                                                                        |
|    |                                                                               | Flue Gas Swept Surface |                         |                                                                          | Red Oxide Zinc Phosphate Primer to IS: 12744 (Two Coats)                                | 60 | --                                                                                 | -- | 60  |                                                                        |
| 04 | Chimney Base, Painters Trolley (other than SS) and Strakes– temp < 95°C       |                        | 87100<br>87200<br>87150 | Power Tool cleaning to St3 (SSPC-SP3)                                    | Two coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                | 60 | Synthetic Enamel to IS2932Shade: Smoke grey Shade 692 of IS 5 (Two coats of 20 µm) | 40 | 100 |                                                                        |
| 05 | Platform Ladder and hand rails post, hand rails and floor grills & step tread |                        | 87200<br>87300          | Gratings- Blast cleaning to Sa 2½ Other Items Blast cleaning if required | Hot Dip Galvanizing to 610 gm/Sq. m (min) and to a coating thickness of 85 µm (minimum) |    |                                                                                    |    |     | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 27 |
| 06 | Other than sl.no.05 of platform structural items– temp < 95°C                 |                        | 87200<br>87300          | Power Tool cleaning to St3 (SSPC-SP3)                                    | One coat of Red Oxide Zinc Phosphate Primer to IS: 12744                                | 30 | Synthetic Enamel to IS2932 Shade: Smoke Grey Shade 692 of IS 5 (Two coats)         | 40 | 70  | Vol. II- A/Section- XII/Sub- Section-B Painting, pg 18 of 24, sl.no 6  |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 6. PAINTING OF DAMAGED AREAS

Areas where paint has deteriorated badly by erosion and areas where the paint film has lost its adhesion property and where the steel has got rusted appreciably - these areas are to be repainted as per the following procedure:

| SL NO | SURFACE LOCATION                                                                                                 | SURFACE PREPARATION                                                                                                                                                      | PRIMER, INTERMEDIATE & FINISH                                                                                                                                                                                                                                          |
|-------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Paint damaged Components falling under sl.no. 37,38,39 of ESP                                                    | Surface preparation by manual cleaning. Minimum 6" of surrounding areas with existing coat to be roughened by wire brush & emery paper for best adhesion by patch primer | 1. Primer: One coat of Self priming Epoxy Zinc rich primer to IS:14589 Gr. II to DFT of 70 µm (min.)<br>2. Intermediate and Finish: As given in respective scheme as above<br>3. If primer is intact, intermediate and finish to be done as per the respective scheme. |
| 2     | Paint damaged components falling under other sl. Nos. of APH, Fans, Gate & Damper, ESP & Chimney for Aux. boiler |                                                                                                                                                                          | Primer and Finish: As given in respective scheme                                                                                                                                                                                                                       |

## 7. GENERAL NOTES

- No painting is required for Galvanized, non-ferrous & stainless-steel items, except as indicated above.
- Machined items are to be applied with coat of temporary rust preventive oil
- PGMAs covered in sub-supplier (i.e., Purchased) items viz., support bearing / slide bearing and other sub-delivery components of ESP etc., are not indicated in the above list. However, the Painting Schedule for all items supplied by all sub-suppliers and BOI under the scope of BHEL shall be same as for main equipment covered in this document. For all site erection shop materials Red Oxide Zinc Phosphate Primer shall be applied to meet the temporary protection.
- In sub-assembly, wherever plates / sheets of thickness less than or equal to 5mm and rods are used, very minor items like clamps, small items etc. tiny items of weight less than 25 Kg - Power Tool or Hand Tool Cleaning to SSPC - SP 3 / SP 2 and painting as per FAN, sl. No. 6 shall be followed.
- DFT shall meet the specified value. In case of non-meeting of DFT in number of coats specified, subsequent coats shall be applied to meet specified DFT.
- All components covered under different PGMAs are to be painted. In case any component is left out, the same shall be deemed to be included under the relevant section.
- All threaded and other surfaces of foundation bolts and its materials, insulation pins, Anchor channels, Sleeves, HSFG bolts shall be coated with temporary rust preventive fluid and during execution of civil works; the dried film of coating shall be removed using organic solvents.
- Weld edges made for site welding shall be manual cleaned by wire brush and shall be applied with weldable primer.
- All steel structures shall be provided with painting as given in the specification. Further, painting system shall also meet the requirements of corrosivity category C3 (durability high) as per ISO 12944.
- Heat resistant aluminum paint – the usage of Gr – I or Gr – II in place of Gr – III or Gr – I in place of Gr-II is technically acceptable.
- The primer coat shall be applied in shop immediately after blast cleaning by airless spray technique. Intermediate coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique.

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 8. PAINTING SCHEME – DETAILS OF PROCUREMENT & APPLICATION PROCESSES

**Note:** Application of paint as per paint/ primer manufacturer's instruction

| SL NO | TYPE OF PAINT                                                                | SPECIFICATION OF PAINT | NO OF PACK | VOLUME OF SOLIDS (% MIN) | MODE OF APPLICATION | OVER COATING INTERVAL (IN HOURS) | SHADE                                        |
|-------|------------------------------------------------------------------------------|------------------------|------------|--------------------------|---------------------|----------------------------------|----------------------------------------------|
| 01    | Epoxy Zinc phosphate primer                                                  | IS 13238               | 2          | 40                       | Spray               | 24                               | Grey                                         |
| 02    | Zinc Ethyl silicate primer (% Zn on dry film= 80 (min))                      | IS 14946               | 2          | 60                       | Airless Spray only  | 24                               | Grey                                         |
| 03    | Epoxy High solid-Polyamide cured Epoxy based MIO pigmented intermediate coat | --                     | 2          | 80                       | Airless Spray       | 16                               | Brown                                        |
| 04    | Aliphatic acrylic polyurethane paint                                         | IS 13213               | 2          | 55                       | Airless Spray       | 16                               | Dark Admiralty Grey to Shade No. 632 of IS 5 |
| 05    | Heat resistant aluminum paint                                                | IS 13183               | 1          | --                       | Brush/ Spray        | 24                               | --                                           |
| 06    | Chlorinated rubber-based zinc phosphate primer                               | --                     | 1          | 40                       | Brush/ Spray        | 12                               | Grey                                         |
| 07    | Long oil alkyd Synthetic enamel finish paint                                 | IS 2932                | 1          | 35                       | Brush/ Spray        | 12                               | Corresponding shade no                       |
| 08    | Red oxide Zinc phosphate primer                                              | IS 12744               | 1          | --                       | Brush/ spray        | 12                               | --                                           |

| SI No | SURFACE LOCATION | PGMA | SURFACE PREPARATION | PRIMER |               | FINISH |               | TOTAL DFT IN (µm min.) | CONTRACT SPECIFICATION REFERENCE |
|-------|------------------|------|---------------------|--------|---------------|--------|---------------|------------------------|----------------------------------|
|       |                  |      |                     | PAINT  | DFT (µm min.) | PAINT  | DFT (µm min.) |                        |                                  |

## 9. PAINTING REQUIREMENTS AS STIPULATED IN TENDER DOCUMENT

| SL NO | AREAS                                                                          | TENDER DOCUMENT REFERENCE                                                                                                                               |
|-------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01    | ESP and Auxiliaries like ESP, APH, Fans, GAD (Insulated parts / flue gas path) | Technical specification Annexure-I, Vol. II-A / Section-XII / Sub-Section-B Painting, Painting Scheme for C2 and C3 environment, Page 18 of 24 S. No 3. |
| 02    | Structures of ESP, Packer plates, Base frames of motor and actuators           | Technical specification Annexure-I, Vol. II-A / Section-XII / Sub-Section-B Painting, Painting Scheme for C2 and C3 environment, Page 18 of 24 S. No 1. |
| 03    | ESP and Auxiliaries like ESP, APH, Fans, GAD (Miscellaneous components)        | Technical specification Annexure-I, Vol. II-A / Section-XII / Sub-Section-B Painting, Painting Scheme for C2 and C3 environment, Page18 of 24 S. No 6.  |
| 04    | Galvanizing of gratings, hand railings and ladders                             | Technical specification Annexure-I, Vol. II-A / Section-XII / Sub-Section-B Painting, Painting Scheme for C2 and C3 environment, Page18 of 24 S. No 27. |