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| PSGSG/<br>15-<br>16/006 | <b>Process Specifications for<br/>ETP GRADE COPPER CONNECTOR-I</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Drg.No.                  |                |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Date                     | 13.10.2020     |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Product                  | GSM-245        |
| <b>S.NO</b>             | <b>BHEL Specification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Vendor compliance</b> |                |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>YES/NO</b>            | <b>Remarks</b> |
| <b>1.0</b>              | <b>General:</b><br>This specification governs the quality requirements electrolytic tough pitch copper rods and extruded sections for electrical purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                |
| <b>2.0</b>              | <b>Application:</b><br>This material is used in high voltage switchgear applications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                |
| <b>3.0</b>              | <b>Compliance with National /International standards :</b><br>The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.<br>A. INDIAN : IS : 191:2007                                                                                                                                                                                                                                                                                                                                                                                       |                          |                |
| <b>4.0</b>              | <b>Finish:</b><br>a. Surface finish of the components shall be at least RA 0.8.<br>b. The component shall be free from dirt, grease and loose particles.<br>c. Drawn profiles, to size, only shall be used for direct welding. No smithy is allowed for formation/ matching of profiles in view of defect inception.<br>d. Any sharp corners shall be removed as per the drawing. Wherever not specified in the drawing, a radius of R1 shall be provided at the sharp corners and edges.<br>e. Parallelism of the tube must be maintained within 0.1 degree and any deviation shall be subjected to rejection in supply. |                          |                |
| <b>Page<br/>1/3</b>     | <b>PSGSG/15-16/006</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Signature</b>         |                |

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| PSGSG/15-16/006     | <b>Process Specifications for<br/>ETP GRADE COPPER CONNECTOR-I</b>                                                                                                                                                                                             |             |        |                 | Drg.No.                  |                |
|                     |                                                                                                                                                                                                                                                                |             |        |                 | Date                     | 28.10.2020     |
|                     |                                                                                                                                                                                                                                                                |             |        |                 | Product                  | GSM-245        |
| <b>S.NO</b>         | <b>BHEL Specification</b>                                                                                                                                                                                                                                      |             |        |                 | <b>Vendor compliance</b> |                |
|                     |                                                                                                                                                                                                                                                                |             |        |                 | <b>YES/NO</b>            | <b>Remarks</b> |
| <b>5.0</b>          | Properties                                                                                                                                                                                                                                                     |             |        |                 |                          |                |
|                     | Parameter                                                                                                                                                                                                                                                      | Test method | Unit   | Value (Minimum) |                          |                |
|                     | Chemical                                                                                                                                                                                                                                                       | IS 191      | %      |                 |                          |                |
|                     | a. Copper                                                                                                                                                                                                                                                      |             |        | Remainder       |                          |                |
|                     | b. Bismuth                                                                                                                                                                                                                                                     |             |        | 10ppm           |                          |                |
|                     | c. Lead                                                                                                                                                                                                                                                        |             |        | 0.005           |                          |                |
|                     | d. Oxygen                                                                                                                                                                                                                                                      |             |        | 0.045           |                          |                |
|                     | Electrical Conductivity at 20 <sup>0</sup> C (Minimum)                                                                                                                                                                                                         | IS 191      | % IACS | >97             |                          |                |
| <b>6.0</b>          | <b>Test Methods</b><br>Unless otherwise specified, the tests shall be conducted in accordance with relevant methods as mentioned against clause 5.0.                                                                                                           |             |        |                 |                          |                |
| <b>7.0</b>          | <b>Sample for Tests</b><br>The set of test specimens prepared from same batch and in same manner as consignments shall be supplied for testing and approval. The test sample size should be as per requirement specified in relevant test method of clause 6.0 |             |        |                 |                          |                |
| <b>8.0</b>          | <b>Packing</b><br>The components shall be packed in high density cardboard boxes, with a primary wrapped in polyethylene and packed individually in dust free boxes after degreasing. The components shall be guaranteed against all manufacturing defects.    |             |        |                 |                          |                |
| <b>Page<br/>2/3</b> | PSGSG/15-16/006                                                                                                                                                                                                                                                |             |        |                 | <b>Signature</b>         |                |

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| PSGSG/15-16/006     | <b>Process Specifications for<br/>ETP GRADE COPPER CONNECTOR-I</b>                                                                                                                                                                          | Drg.No.                  |                |
|                     |                                                                                                                                                                                                                                             | Date                     | 13.10.2020     |
|                     |                                                                                                                                                                                                                                             | Product                  | GSM-245        |
| <b>S.NO</b>         | <b>BHEL Specification</b>                                                                                                                                                                                                                   | <b>Vendor compliance</b> |                |
|                     |                                                                                                                                                                                                                                             | <b>YES/NO</b>            | <b>Remarks</b> |
| <b>9.0</b>          | <b>Acceptance criteria:</b> <ul style="list-style-type: none"> <li>a. Dimensional Report as per drawing.</li> <li>b. Finish as per clause 4.0.</li> <li>c. Test samples as per clause 7.0.</li> <li>d. Packing as per clause 8.0</li> </ul> |                          |                |
| <b>Page<br/>3/3</b> | PSGSG/15-16/006                                                                                                                                                                                                                             | <b>Signature</b>         |                |