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MATERIAL SPECIFICATIONS
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POLYTETRAFLUOROETHYLENE RESIN COATING
Low Build, 700 - 750 F (371 - 399 C) Fusion

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily as a coating on metal parts to produce a fused polytetrafluoroethylene resin surface providing dry lubrication, high heat stability, and good corrosion protection. Applicable primarily to parts which operate at temperatures not higher than 525 F (274 C) for limited periods or 475 F (246 C) for extended periods. The preheating temperature for steels and the fusing temperature may result in some softening of metals which have been cold worked or have been given final heat treatment at temperatures lower than these temperatures.

3. MATERIAL: The coating material shall be a dispersion of polytetrafluoroethylene resin solids in a water Ø medium. The finished resin coating material shall be unpigmented unless colored material is specified, but the primer may be either pigmented or unpigmented.

3.1 When multiple coatings are applied as in 4.3 and 4.4 to a maximum total dry film thickness of 6.0 mils, each coat shall be free from cracks after fusing at 700 - 750 F (371.1 - 398.9 C) when examined under 40x magnification.

4. PROCEDURE:

4.1 Surface Preparation: Surfaces to be coated shall be degreased and then shall be chemically cleaned or Ø lightly abrasive blasted, cleaned to remove abrasive particles, and air dried, except that anodized aluminum need only be degreased and dried.

4.2 Preheating: Immediately prior to coating, metals other than aluminum, magnesium, and copper shall Ø be preheated to 750 F ± 10 (398.9 C ± 5.6) to produce a light oxide film and remove any organic contamination and then air cooled. Preheating of aluminum, magnesium, and copper is not required.

4.3 Coating:

4.3.1 Primer: A primer resin coat of 0.2 - 0.4 mil dry film thickness shall be applied to the oxidized metal surfaces and fused in accordance with 4.4.

4.3.2 Finish: The finish resin coating material shall be applied to the primed surfaces in increments not greater than 1.0 mil as required to yield a total dry film thickness not greater than 6.0 mils. Each coat shall be fused before application of the succeeding coat. For best corrosion properties, coated surfaces shall be sanded and cleaned between coats.

4.3.3 The coating thickness shall be as specified on the drawing.

4.4 Fusing: The resin coating shall be air dried to a dry, non-glossy appearance or forced-heat dried at 180 - 200 F (82.2 - 93.3 C) for 5 - 10 minutes. The dried coating shall be fused at 700 - 750 F (371.1 - 398.9 C) until fusing is complete. Fusing is complete when the milk-white (for unpigmented Ø material) air-dried film changes to a clear fused film. Fusing time will vary depending on the mass of metal being coated. Unless otherwise permitted by purchaser, the fused coating shall be quenched in cold water after the final fusing cycle, to provide maximum coating toughness. Adequate ventilation shall be provided in furnace areas to prevent inhalation of toxic fumes.

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