AEROSPACE
MATERIAL SPECIFICATIONS

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AMS 2435A
Superseding AMS 2435

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FLAME DEPOSITION
Tungsten Carbide

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

2. APPLICATION: Primarily for providing a hard, wear-resistant surface on metal parts which do not operate at a temperature higher than 1000 F (538 C). This coating is not recommended for surfaces with deep, vee-shaped grooves, blind cavities, narrow holes, or sharp corners.

3. EQUIPMENT: A specially constructed machine in which the particles of coating material may be fed into the tube of a gun, suspended in a mixture of oxygen and acetylene which is detonated, heating the particles to plasticity and hurling them at high velocity out of the gun barrel onto the part.

4. COATING MATERIAL: Powder composition shall consist of approximately 91% tungsten carbide and 9% cobalt.

5. PROCEDURE:

5.1 Preparation: Surfaces to be coated shall be machined to allow for the finish thickness of the coating. Parts required to be hardened to a specified hardness shall be fully heat treated prior to flame deposition.

5.2 Cleaning: Parts shall be thoroughly cleaned free from dirt, grit, oil, grease, and other foreign materials.

5.3 Masking: Parts shall be suitably masked as required to protect surfaces not designated to be coated.

5.4 Surface Conditioning: Surfaces to be coated may be grit blasted to improve adhesion of the coating.

5.5 Coating: The coating material shall be deposited onto the designated surfaces to a sufficient thickness to permit finishing to dimensions specified on the part drawing. Temperature of the part being coated shall be maintained so as not to exceed 400 F (204 C), unless otherwise specified.

5.6 Surface Finishing: Procedures for grinding and lapping shall be as agreed upon by purchaser and vendor.

6. TECHNICAL REQUIREMENTS:

6.1 Specimens: Test bars, 1/2 in. in diameter x 2 in. long, processed on the surface as in Section 5, and coated to a thickness of 0.007 - 0.009 in., shall have the following properties:

6.1.1 Hardness: The coating shall have a cross-sectional hardness of Vickers 1200 - 1450, using 300 g load, or equivalent. Hardness shall be determined from an average of not less than ten microhardness readings.

6.1.2 Apparent Porosity: The average apparent porosity shall be less than 1% of coating cross-section when determined by microscopic comparison with an approved standard at 200X magnification.