AERONAUTICAL MATERIAL SPECIFICATION

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AMS 2403

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NICKEL PLATING

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

2. APPLICATION: Primarily for moderate corrosion and oxidation resistance.

3. TECHNICAL REQUIREMENTS:

3.1 Surfaces of parts to be plated shall be smooth and substantially free from blemishes, pits, tool marks, and other irregularities.

3.2 Unless otherwise specified, parts having hardness higher than Rockwell C 40 and which have been ground after heat treatment shall be suitably stress-relieved before cleaning for plating. Temperatures to which parts are heated shall be such that maximum stress-relief is obtained without reducing hardness of parts below drawing limits.

3.3 Before placing parts in plating solutions, they shall have chemically clean surfaces, prepared with minimum abrasion, erosion, and pitting.

3.4 Tight electrical connections shall be made and maintained for satisfactory plating.

3.5 Plating shall be performed by electrode position of nickel from a chloride or sulfate-chloride solution containing no organic addition agents. Unless otherwise specified, nickel shall be deposited directly on the basis metal without a prior flash coating of other metal, except in the case of parts made of aluminum or aluminum alloys. A preliminary chemical coating, immersion plate and/or metal flash is permissible on aluminum and aluminum alloys.

3.6 After plating, washing and drying, steel parts shall be treated as follows, unless otherwise permitted, to remove hydrogen embrittlement due to cleaning and plating.

3.6.1 Parts, including roll threaded parts, cold worked after being heat treated, shall be heated to 375 F ± 10 in air, preferably in a circulating air furnace, and held at temperature for not less than 3 hours.

3.6.2 Parts having hardness of Rockwell C 33 or higher, excluding parts covered by 3.6.3, shall be heated to 375 F ± 10 in air, preferably in a circulating air furnace, and held at temperature for not less than 3 hours.

3.6.3 Parts, including carburized parts, which will decrease in hardness if heated to 375 F shall be heated to 275 F ± 10 in air, preferably in a circulating air furnace, and held at temperature for not less than 5 hours, excepting parts requiring special handling which shall be treated as agreed upon by purchaser and vendor.

3.7 The finished thickness of plate shall be as specified on the drawing.