AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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BLACK OXIDE TREATMENT

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

2. APPLICATION: To increase anti-chafe and anti-friction properties of carbon and low alloy steel parts, particularly sliding or bearing surfaces, by providing a finish coating which will retain an oil film.

3. PROCEDURE:

3.1 Parts should be completely finished and accepted by the parts manufacturer before treating.

3.2 The parts to be treated shall have chemically clean surfaces prepared with minimum abrasion, erosion, or pitting.

3.3 The properly cleaned parts, while still wet, shall be immersed in a boiling aqueous alkali oxidizing bath for such time and at such temperature as will produce coatings meeting the requirements of Section 4.

Note: The intensity of black color depends upon the time of immersion and the bath temperature. Immersion for 15-30 min. in a bath at approximately 300 F is common practice with single bath treatments.

3.4 The treated parts shall be washed thoroughly in cold running water to remove all traces of processing solution and deposited salts. Parts shall not be allowed to dry during the entire sequence of operations until the completion of this rinse.

3.5 Parts shall be thoroughly dried.

3.6 Parts shall then be dipped in a suitable corrosion-preventive oil.

4. QUALITY:

4.1 The coating on polished surfaces shall be a lustrous black, continuous, and uniform in color and luster. Coating on other surfaces shall be continuous and of black or dark gray color, uniform on areas of equivalent surface roughness. Coating shall be substantially free from red oxide as shown by red spots or an overall reddish-brown color. Coating shall be smooth, dense and adherent, and shall not chip, peel, crack, or rub off under any conditions incident to normal handling or storage.

4.2 Completely processed parts, or panels processed with parts, shall withstand exposure to an atmosphere of approximately 100% relative humidity at 120 F ± 5 for not less than 120 hours without showing signs of corrosion.