SUBSEQUENT TREATMENTS FOR FASTENER SURFACE FINISHES

WSS-M21P27-A1
WSS-M21P27-A2
WSS-M21P27-A3
WSS-M21P27-A4
WSS-M21P27-A5

1. SCOPE

These specifications identify the performance requirements for subsequent treatments applied to fastener surface finishes.

2. APPLICATION

The treatments identified in these specifications are intended for use on Worldwide Standard and Utility parts requiring a subsequent treatment to alter the performance. For example, subsequent treatments may be the addition of waxes for sealing on sheet metal screws or wax on hose clamps to lower the friction between the clamp and the hose thus improving the clamp load.

Adding a designation code to the Standard or Utility part finish code specifies these subsequent treatments; see Worldwide Standard WX100 Section 3.

3. REQUIREMENTS

The application of these treatments is to provide performance in addition to all applicable requirements of WX100 Clause 5.

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 PERFORMANCE REQUIREMENTS

3.2.1 WSS-M21P27-A1 Standard Part Suffix Identifier 'XA'

Position: Screws having a length of 10 mm or less shall be coated from the point to a distance of 0.25 mm to 5.2 mm from the underside of the screw head or end of the screw diameter section, as applicable. The sealer thickness shall increase the major thread diameter not less than 0.20 mm or more than 1.50 mm. Adhesion of the sealer to the screw must be greater than the cohesive strength of the material so that the sealer tends to separate rather than strip from the screw.

Paint Staining: Shall not show any migration staining after 72 h exposure.

Test Method: Samples of sealing compound are secured tightly to production enamel surface and placed in the fluorescent sunlamp fixture as described in FLTM BV 107-02.

Date	Action	Revision
2009 01 06	Revised	Para 3.2.1 revised dimensions, 3.2.5 Added 'Caution' note A. Cockman, FNA
2004 03 11	Revised	Para 3.2.1 & 3.2.4 revised; para 3.2.5 added Added WSS-M21P27-A5 A. Cockman
1993 03 31	NGA1E10269419002	Released A. Cockman EM&S

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Water Leakage Test:

Test Method: Screws shall be driven into test panels 0.90 x 125 x 300 mm using stainless steel shim stock. The pilot holes shall be as specified by the Ford Standard for metal tapping screws as well as the clearance holes for the stainless steel shim stock. Screws shall be turned full-in and shall not exceed normal torque values. Shim stock thickness shall be adjusted so that bottoming-out of screws does not occur.

As received: No leaks permitted after 4 h under a 25 mm static head of water.

Aged 7 days at 70 +/- 2 °C: No leaks permitted after 4 h under a 25 mm static head of water.

Cold Shocked: No leaks permitted after 4 h under a 25 mm static head of water, and after test panel has been slammed 6 times, following 24 h at - 30 °C in slam fixture as described in FLTM BV 101-01.

Aged 50 minutes at 115 +/- 3 °C: No leaks permitted after 4 h under a 25 mm static head of water.

3.2.2 WSS-M21P27-A2 Standard Parts Suffix Identifier XB

This specification covers the requirements for a wax applied to the inside diameter of hose clamp to lower the friction between the clamp and hose. Specific requirements are being determined.

3.2.3 WSS-M21P27-A3 Standard Parts Suffix Identifier XC

This specification covers the requirements for a fluorocarbon polymer based coating to be used on fasteners to reduce the adhesion of electrodeposited primers and/or coatings as well as weld splatter particles. The coatings can also reduce the friction, and therefore heat buildup, experienced with long run downs.

The coating shall be applied to the flank surfaces of the threads for both internally and externally threaded product and to the contact surface, or hole, in the case of tapping plates or unthreaded nut product. The presence of absence of the coating at the crests and/or root valleys of the thread is permissible provided it does not interfere with assembly of the fastener. The coating shall have a uniform appearance and be free of tears, runs, and flaked areas.

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