



FLEXIBLE COVERSTOCK, AROMATIC SPRAY POLYURETHANE SKIN, WITH ONE COMPONENT ALIPHATIC WATERBORNE IN-MOLD COATING SYSTEM

WSS-M4D983-A3

1. SCOPE

The material defined by this specification is one component aliphatic waterborne in-mold coating over an aromatic polyurethane sprayable elastomer used for instrument or door panels.

2. APPLICATION

This specification was released originally on the 2010 Taurus to be used as a flexible molded skin for a seamless instrument panel with a foamed plastic substrate. This material must also meet the requirements in WSS-M15P45-A, performance spec for flexible cover skin materials used in an instrument panel assembly.

2.1 LIMITATIONS

- If the plastic substrate is an olefin based material, it must be pretreated with either adhesion promoter, flame or plasma treatment and no slip agent should be present unless validated with the slip agent.
- Validated mold release, in-mold coat, PU skin and foam must be treated as a system as documented on the ASL.
- Humidity and temperature must be tightly controlled in an enclosed chamber as specified by the material supplier.
- Features in the part design such as deep undercuts and deep draws that limit wand access should be avoided.

3. REQUIREMENTS

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).

- 3.1.1 All requirements of this specification, identified by symbol (s), shall be met with data representing 3 sigma values using latest ISO test methods.
- 3.1.2 This specification was developed using virgin material properties. The use of regrind is permitted, for economic/environmental reasons, with compliance as indicated in WSS-M99P1111-A.

Date	Action	Revisions
2008 03 26	Activated	



Documents

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**Critical Process Parameters**

At the request of Ford Materials Engineering the supplier shall be responsible to collect critical process control data on each lot of material produced. Testing required will be jointly developed between Ford Materials Engineering and the supplier based on CP and PFMEA review at the time of initial approval. Annually the supplier will review the in process data with Ford Materials Engineering to show that the process has remained under control. The data needs to be submitted in January for the previous calendar year. Data showing poor quality control measures or lack of submitted data may result in deletion from the Ford Approved Source List.

3.3 TEST SPECIMENS**3.3.1 Preparation of test specimens**

Unless otherwise specified, all tests shall be carried out on specimens die cut from flat ungrained skins.

3.3.2 Density 0.95 – 1.10 g/cm³
(ISO 1183, Method A)

3.3.3 Hardness, Durometer A 70 +/- 5
(ISO 868, 15 s dwell)

(s) 3.3.4 Tensile Strength at Break, min 6.0 MPa
(ISO 37, Type 1, test speed:
500 mm/minute)

(s) 3.3.4.1 Elongation at Break, min 125%
(Test Method according to para 3.3.4)

(s) 3.3.5 Tear Strength, min 20 N/mm
(ISO 34, Method B, Procedure A, 500 mm/minute)

3.3.6 Heat Aging Performance
(ISO 188, except 150 +/- 50 air changes/h,
500 h at 120 °C +/- 2 °C,
Unaged property values shall be
determined at the time of the aged
properties determination)

3.3.6.1 Color Stability, min Rating 4
(AATCC Procedure 1/ISO 105-A02)

3.3.6.2 Cold Flexibility No Cracks
(SAE J323 Method A, -20 °C,
20 mm mandrel, Specimen size,
50 x 150 mm)