ENGINEERING MATERIAL SPECIFICATION

Material Name	Specification Number
SEALER, PVC, PRIMER OVEN CURING, PAINTABLE	ESK-M4G297-A
SEALER, PVC, PRIMER OVEN CURING, PAINTABLE	ESK-M4G297-A2
SEALER, PVC, PRIMER OVEN CURING, PAINTABLE	ESK-M4G297-A3
SEALER, PVC, PRIMER OVEN CURING, PAINTABLE	ESK-M4G297-A4

1. SCOPE

The material defined by this specification is a solvent release, heat curing, stone peck resistant PVC sealer for exterior body areas.

2. APPLICATION

This specification was released originally for material used as a stone peck protective coating for wheel house lip. The material is applied by a foam roller or airless spray on baked electrocoat in a wet film thickness of approx. 160 - 320 micrometre wet on wet with spray primer.

3. REQUIREMENTS

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared and/or thermal analysis of material/parts supplied to this specification. The IR spectra and thermograms established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce IR spectra and thermograms that correspond to the reference standard when tested under the same conditions.

Date	Release No.	Release/Revision
1993 02 01	EP00E10258804000	Revised A 3.9, released A2, A3, A4 W.Scholz
1987-12-18	SM/EQ1579 TP	Release

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3.3 CONDITIONING AND TEST CONDITIONS

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Unless otherwise specified use test panels EC-coated according to FLTM BI 120-1, C. The material must be applied on the cured EC-coated test panel 30 min after oven curing.

3.4	COLOUR	grey or as specified on Eng. drawing
3.5	SOLIDS, min. (FLTM BV 150-10)	97.0 %
3.6	ASH, max. (FLTM BV 150-10)	28.0 %
3.7	FLASH POINT (ASTM D 93, Method A)	above 100 C

Note: In case testing at higher temperatures is not feasible because of gelling of test material, the supplier must certify in writing that each separate volatile ingredient has a flash point >100 C.

3.8	DENSITY AT 20 C, max. (ASTM D 1475)			1.29 g/cm3	
3.9	VISCOSITY AT 20 C, Pas +/- 10 %	A	A2	A3	A4
3.9.1	As received				
	at 2,5/min	25,0	60,0	100,0	130,0
	at 5.0/min	19,0	40,0	60,0	80,0
	at 10,0/min	15,0	30,0	40,0	55,0
3.9.2	After Ageing, max., Pas +/- 20 % (120 h at 35 +/- 2 C)				
	at 2.5/min	33,0	75,0	140,0	220,0
	at 5.0/min	26,0	55,0	85,0	130,0
	at 10,0/min	21,0	40,0	65,0	100,0

Test Method

1. Brookfield viscometer type RVT/D, spindle no. 6.
2. Condition material under test to 20 C.
3. Stir material for 1 min by spatula.
4. Let the material rest for 30 min.

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5. Insert spindle into material and start measuring with undisturbed material at a frequency of 2,5/min; measuring time 3 min.

6. Continue measuring in the same way at frequencies of 5,0/min and 10,0/min.

3.10 SURFACE CONDITION AFTER AGEING

The material shall be dry to touch after cooling to 23 +/- 2 C. It shall be free from cracks or bubbles and shall show a uniform closed paint film without staining or discolouration. After bending 90 deg around a mandrel of 100 mm dia. within 2 s (see FLTM BV 153-4) there shall be no evidence of chipping or loss of adhesion between the various layers.

Test Method

1. Test panels 300 x 100 x 0,8 - 0,9 mm prepared according to FLTM BI 120-1, C, shall be coated with the material under test in such a manner (template 30 mm wide) that after curing a dry coating thickness of 150 - 300 micrometre is obtained.

2. After 10 min at 23 +/- 2, C, coat specimens wet on wet with production epoxy spray primer, to a dry film thickness of 25 - 35 micrometre.

3. After 10 min at 23 +/- 2, C, cure specimens separately according to FLTM BV 150-5, Table 2:

   a) Min. Curing Cycle, Phase 1
   b) Max. Curing Cycle, Phase 1

4. After 10 min at 23 +/- 2 C, spray separate specimens with light coloured standard and metallic top coat enamel to a coating thickness of 30 - 40 micrometre.

5. After 10 min at 23 +/- 2 C, cure specicmens separately according to FLTM BV 150-5, Table 2:

   a) Min. Curing Cycle, Phase 2
   b) Max. Curing Cycle, Phase 2

6. Condition for 2 h at 23 +/- 2 C and expose in mechanical convection oven maintained at 80 +/- 2 C for 120 h.

7. Test and examine after 24 h at 23 +/- 2 C.

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