



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

ADHESIVE, EPOXY, SOLVENT FREE, 180 C CURING
80 C APPLICABLE, METAL/METAL, STRUCTURAL
ADHESIVE, EPOXY, SOLVENT FREE, 180 C CURING
80 C APPLICABLE, METAL/METAL, STRUCTURAL

WSK-M2G329-A

WSK-M2G329-A2

1. SCOPE

The material defined by this specification is an epoxy base, polyester modified, mineral filled, pumpable, solvent-free and heat curing structural metal to metal adhesive. The structural adhesive physical properties are valid for an adhesive thickness from 0.3 to 7.0 mm. Mechanical structural adhesive properties are dependent upon bondline thickness.

2. APPLICATION

This specification was released originally for material used for bonding the roof to the body side panel. Assembling of parts to be bonded has to be possible immediately after adhesive application as well as after cooling of adhesive to 23 +/- 2 C.

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.

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.

Date	Release No.	Release/Revision
1991 03 01	EP00E01089482000	Released A2 B. Lange concurred J Schult
1990 03 01	C01031533	Updating of preliminary spec, source see ASL
1989 07 12	SM/EQ7602 TP	Release of preliminary spec, source see ASL

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3.4 COMPOSITION

Modified Epoxy, based on Bisphenol A and Bisphenol F. Curing mechanism by polyaddition.

3.5 MATERIAL PROPERTIES

3.5.1 Colour As specified on Engineering Drawing

3.5.2 Solids, min (FLTM BV 150-10) 99.0 %

3.5.3 Ash, max (FLTM BV 150-10) 40. %

3.5.4 Weight per Volume, max (ASTM D 792) 1.45 g/cm³

3.5.5 Viscosity at 80 C (FLTM BV 103-01, nozzle 2 mm ID, conditioning time up to measurement: 30 minutes at test temperature)

	A	A2
Line pressure, kPa	280	400
3.5.5.1 As received, s	350 - 550	1600 - 2000
3.5.5.2 After Aging, max (7 d at 40 +/- 2 C)		15 % increase based on original value

All samples shall produce flow diagrams including viscoelasticity established by using rotational test equipment as Physica, Haake, Epprecht, Rheometrix etc. to identify characteristic of material.

	A	A2
3.5.6 Cone Penetration at 23 +/- 2 C (ASTM D 217, total mass 150 g)	7 - 8	5 - 7

3.5.7 Test for Abrasive Content No scratches

Test Method: Dilute a one gram sample of material at 80 +/- 2 C with one gram of Butyrolacetone and mix thoroughly. Rub a portion of the diluted material 100 times between two pieces of flat, clean plate glass. The appearance of scratches on the glass plate will be considered failure.