



ENGINEERING MATERIAL SPECIFICATION

ADHESIVE, TWO PACK, EPOXY, SOLVENT FREE, REPAIR, COMP A
ADHESIVE, TWO PACK, EPOXY, SOLVENT FREE, REPAIR, COMP B

WSK-M2G400-A
WSK-M2G400-B

1. SCOPE

The materials defined by these specifications are the separate parts of a two pack, epoxy base, solvent-free and room temperature curing structural metal to metal adhesive.

WSK-M2G400-A is a modified epoxy resin based on Bisphenol A.

WSK-M2G400-B is a modified polyamine hardener.

2. APPLICATION

These specifications were released originally for materials used for bonding roof to body side panel (cold rolled steel, sanded and wiped by cleaning solvent) only for repair. Mechanical structural adhesive properties are dependent on bondline thickness. In the uncured state, the adhesive can be welded.

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).

3.2 COMPOSITION

3.2.1	Resin WSK-M2G400-A	Modified epoxy, based on Bisphenol A
3.2.2	Hardener WSK-M2G400-B	Modified polyamine
3.2.3	Pigments WSK-M2G400-A/B	Pigments to obtain the desired color

3.3 MATERIAL PROPERTIES

	<u>WSK-M2G400-A</u>	<u>WSK-M2G400-B</u>
3.3.1	Color	undefined
3.3.2	Solids, (FLTM BV 150-10)	97 % min
3.3.3	Ash, (FLTM BV 150-10)	42%
3.3.4	Density, kg/L, (ASTM D 792)	1.2 - 1.5
3.3.5	Mixing Ratio, by Volume	100
3.3.6	Viscosity (FLTM BV 103-01)	< 60s

3.4 FLOW

(Fig. 1 of FLTM BV 153-01, freshly mixed components, test at 23 +/- 2 °C)

less than 3 mm

Date	Action	Revisions	Rev. 3
2014 07 08	Revised	Added Weldability, see Summary of Revision	J.Herl, EU
2002 12 10	Revised	Para 3.0 inserted ; Para 3.1, 3.2, 3.3, 3.11, 3.12, 4 deleted	
1990 06 01	Released	EP00E01031536000	B. Lange, J. Schult, FOE



3.5 PREPARATION OF TEST PANELS

3.5.1 Prior to application, metal surfaces must be cleaned with acetone to remove oils, dirt and moisture before and after sanding (grinding).

3.5.2 Application of Material by Tube Gun or Cartridge

Film Thickness: 0.1 – 0.3 mm

To be Cured: at 23 °C for 48 h or
at 80 °C for 30 minutes

3.6 RESISTANCE PROPERTIES

Test panels and parts prepared with materials according to this specification shall meet all requirements of performance specification WSK-M11P47-A1.

3.7 WELDING ACCEPTANCE TEST

Adhesives released to WSK-M2G400-A/B must be weldable. After application follow up welding operations must be executed within two (2) hours. Within these two (2) hours the adhesive film shall have sufficient conductivity to have a spot weld applied to the metal beneath the film.

The tests must be executed according to FLTM BV 109-01 with the following changes:

- Application of material by gun or cartridge
- 25 coupon assemblies per condition
- Steel substrates only
- Assembly aged at 23 +/- 2 °C for 2 hours
- The investigation (point 6 in FLTM BV 109-01) after 30 days is not required.

3.8 QUALITY

The material shall be a smooth homogeneous mixture, free from foreign materials. It must be adaptable for application in accordance with the appropriate Ford Motor Company Process Specification. The adhesive must be compatible with all related materials.

3.9 STORAGE STABILITY

1 year

(From date of receipt at Ford Motor Company)

During the storage at ambient temperatures between 5 and 32 °C in sealed unopened containers out of direct sunlight the material as supplied shall not liver and must be free from settling. After the storage the material must pass all specification requirements.

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact gmfs@ford.com for questions concerning Engineering Material Specifications.

4.1 POT LIFE, MIXED COMPONENTS,

Greater than
60 minutes

(100 g sample, 23 +/- 2 °C)