



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

PERFORMANCE, SEMISTRUCTURAL ADHESIVE,
POLYURETHANE, METAL TO METAL, TWO COMPONENT

WSK-M11P54-A

1. SCOPE

This specification defines the performance requirements for a solvent free, polyurethane based, semistructural metal-to-metal adhesive.

2. APPLICATION

This specification was released originally to provide life time structural bonding for body components such as car cross beam (e-coated) to brackets (chromated steel, dirt and grease free).

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 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.

3.3 SYSTEMS COMPONENTS

3.3.1 Substrates

Chromated and/or e-coated steel as specified on engineering drawing.

Note: If any other steel, f.e. precoated with Zn, Zn/Ni, Duplex, galvanized, galvanealed, etc. gets relevant for manufacturing, the adhesive has to be tested according to this specification on these substrates.

Date	Release No.	Release/Revision
1993 06 01	EP00E10258817000	Released B. Lange

WP 3948-a

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3.3.2 Preparation of Substrate

Grease free, clean unless otherwise specified.

3.3.3 Adhesive, Two Component (see 5.1)

Suitable to meet the requirements of this specification or as specified on engineering drawing.

3.3.4 Adhesive Application Temperature 23 +/- 2 C

3.3.5 Adhesive Coating Thicknesses

X = 1 mm, unless otherwise specified

3.3.6 Curing Conditions 72 h at 23 +/- 2 C

3.4 PERFORMANCE PROPERTIES

3.4.1 Green Shear Strength, min 0.3 MPa
(FLTM BV 154-03)

Test Method:

- Prepare test specimens (body steel quality; see section 3.3.1 of specification) according to section B, para 1 & 2 of FLTM BV 154-03.
- Cure test specimens for 3 h at 23 +/- 2 C.
- Determine shear strength according to Method B of FLTM BV 154-03.

3.4.1 Hardness Durometer "A"
(ISO 868, 3 s dwell)3.4.1.1 After Room Temperature Curing > 90
(48 h at 23 +/- 2 C)3.4.2 Shear Strength
(FLTM BV 154-03)

Test Method: Prepare samples per 3.4.1 except cure for 48 h at 23 +/- 2 C and expose samples as shown below. Determine shear strength according to Method B.

3.4.2.1 Original

At 23 +/- 2 C, min 9.0 MPa

3.4.2.2 At 90 +/- 2 C*, min 1.5 MPa

3.4.2.3 At - 40 +/- 2 C*, min 4.0 MPa

*Samples shall be conditioned for 30 minutes at the test temperature before measurement.