



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

TAPE, POLYESTER FILM - PRESSURE SENSITIVE

ESA-M3G170-A

1. SCOPE

The material defined by this specification is a pressure sensitive, transparent polyester film that bonds tenaciously to polyethylene and terne coated steel surfaces.

2. APPLICATION

This specification was released originally for temporarily securing fuel system components prior to final assembly.

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

All test values indicated herein are based on materials conditioned in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5 % relative humidity for 24 h prior to testing and tested under the same controlled conditions.

Date	Release No.	Release/Revision
880321	RD-2262202	Released

Page 1 of 3

WP 3948-a

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3.4 TAPE REQUIREMENTS

3.4.1 Appearance

The film and adhesive shall be transparent - clear or tinted.

3.4.2 Thickness, min
(ASTM D 1000)

Tape plus adhesive 0.10 mm

3.4.3 Tensile Strength, min
(ASTM D 1000 and ASTM D 3759)

4.0 N/mm width

3.4.4 Elongation at Break, min
(ASTM D 1000 and ASTM D 3759)

30 %

3.4.5 Adhesion to Steel, min
(ASTM D 1000 and ASTM D 3330
squeegee process)

0.8 N/mm

3.4.6 Adhesion to Terne Coated Steel
(ASTM D 1000 - Use ESA-M1A281-A -
expose surface to 30 s to acetone
and rinse with methyl alcohol prior
to tape application - squeegee process)

1.0 N/mm

3.4.7 Adhesion to Polyethylene
Extruded Sheet
(ASTM D 1000 - Use ESL-M4D197-A2 -
squeegee process)

0.5 N/mm

3.4.8 Breaking Strength, min
(ASTM D 1000)

4180 g/cm

3.4.9 Tear Strength, min
(ASTM D 1000)

0.008 N/mm

3.5.0 Unwind Pull, min
(ASTM D 1000)

0.5 N/mm

3.5.1 Low Temperature Flexibility

Shall not crack nor show
evidence of failure

Test Method: Samples approximately 150 mm in length shall
be conditioned for 16 h at -29 C and shall then be bent 180
deg on itself.