



TAPE, PERFORMANCE, PRESSURE SENSITIVE ADHESIVE, TWO SIDED, EXTERIOR, BODY SIDE MOLDING

WSS-M11P65-A2

1. SCOPE

The material defines performance requirements of adhesive tapes used for exterior automotive applications. The tapes are coated on both sides with a pressure sensitive adhesive and protected with a release liner. The tape carrier may be foam or non-foam type.

2. APPLICATION

This specification was released originally to define adhesion performance requirements to retain exterior body side moldings. Several exterior trim components may be attached using these tapes, including but not limited to fascia/bumper inserts, claddings, wheel flares, appliques, roof ditch moldings, step pads, rocker moldings, and spoilers.

2.1 LIMITATION

- Assembling these parts below 16 °C is not recommended.

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 TAPE PERFORMANCE MANAGEMENT

All tapes evaluated to this specification must have Supplement A completely filled out and signed by Ford Materials Engineering, the tape supplier, and the tier one supplier. Compatibility of the tape with base material is the responsibility of the tier one supplier. Any change will require a resubmission of supplement A.

Tape approved to this specification must be tested to all current production paint systems and any newly developed paint systems as stipulated in VOP PTG-205.

In addition to the requirements listed in this specification, requirements listed in the appropriate SDS for the application must be met, unless otherwise agreed to by Ford engineering.

3.3 FINISHED PARTS

Testing must be conducted at Design Verification (DV) and Process Validation (PV) per Table 1 Unless otherwise agreed to by Materials Engineering, and on actual production parts or a section of the part whenever possible. Where part dimensions limits test equipment access, representative test samples may be substituted. PV Testing must be conducted on actual production parts.

Date	Action	Revisions	Rev. 3
2008 10 29	Revised	Added Hot Pull under 3.5.1, and updated the Supplement A	M. Mehendru, FNA
2008 02 04	Revised	Tablel 1 on page 6	
2007 04 19	Activated		



3.4 TAPE ADHESION REQUIREMENTS

3.4.1 Peel Adhesion, min, N/mm (FLTM BU 112-02, Method A)

The samples shall meet the adhesion requirements as received and after exposure to environmental aging conditions listed below.

- Apply a anodized aluminum (per para 4.1.1) to the unlined adhesive side of the tape before testing and determine adhesion to current exterior body quality painted panels prepared per para 4.2 and emblem/body side molding substrate as identified by Materials Engineering.

- Expose four samples to each of the following conditions:

Room Temperature Aging, min
(Do not precondition for 72 h)

- | | |
|----------|-----|
| • 20 min | 0.8 |
| • 72 h | 1.3 |

Heat Aging, min	1.3
336 hours at 80 +/- 2 °C	

Humidity, min

- | | |
|---|-----|
| • 72 hours at 38 °C and 98 +/- 2% R.H. | 1.3 |
| • 336 hours at 38 °C and 98 +/- 2% R.H. | 1.3 |

Water Immersion, min
(FLTM BI 104-01)

- | | |
|-------------|-----|
| • 240 hours | 1.3 |
|-------------|-----|

Cycle Test, min	1.3
(5 cycles consisting of:)	

- 3 h at 80 +/- 2 °C
- 1 h at 24 +/- 2 °C & 50 +/- 2% RH
- 3 h at -40 +/- 2 °C
- 1 h at 24 +/- 2 °C & 50 +/- 2% RH
- 16 h at 38 +/- 2 °C and 95 +/- 5% RH

Hot pull	1.3
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- 72 h at room temperature,
- 30 min at 80 +/- 2 °C (test at 80 +/- 2 °C)



3.4.2 Shear Adhesion, kPa, min
(FLTM BU 101-06, Method A)

Prepare four 645 mm² overlap shear test specimen using 1 x 3 in (25 x 75 mm) test panels with production paint to anodized aluminum.

- As Received
- 20 min 300
- 72 h 500

3.4.3 Liner Removal, max, N/mm
(ASTM D 1000 with exceptions below)

- As Received 1.0
- 1 h at 54 °C 1.0

ASTM D 1000, except apply the unlined adhesive side of the tape to a clean painted panel with light finger contact and no added roller weight. Measure the force required to peel the liner from the tape.

3.4.4 Holding Power, min, 100h
(FLTM BU 101-06, Method B)

- At 23 +/- 2°C (1000 g weight)
- At 70 +/- 2°C (500 g weight)

Prepare 2 paint/anodized aluminum 645 mm² overlap shear test specimens. After conditioning for 24 h, at 23 +/- 2 °C hang 1 test specimen vertically at 23 +/- 2 °C and one at 70 +/- 2 °C. Gently attach weights as specified to both specimens. Both bonded assemblies must support specified weights for the specified time.

3.4.5 Heat Resistance, max displacement 1.0 mm

Prepare 1 paint/anodized aluminum 645 mm² overlap shear test specimen as described in para 3.3.2. After conditioning for 1 h at 23 +/- 2 °C, attach a 230 g weight to one end of the test specimen and hang it vertically in a mechanical convection oven at 120 +/- 2 °C for 30 minutes. Allow the specimen to cool to 23 +/- 2 °C and determine whether any displacement from the original bonded position has occurred.

3.5 PERFORMANCE REQUIREMENTS FOR ASSEMBLIES

3.5.1 Adhesion Strength, min, N/mm
(FLTM BU 112-02, Method C)

The samples shall meet the adhesion requirements as received and after sample exposure conditions. Samples must be preconditioned for 72 h at 23 +/- 2 °C prior to environmental exposure and tested between 1 and 4 hours after removal from exposure conditions, unless otherwise noted.

Expose duplicate samples to each of the following conditions:

Room Temperature Aging, min
(Do not precondition for 72 h)

