

**COLD ADHESION TEST FOR
DOUBLE FACED PRESSURE SENSITIVE TAPES****Application**

These procedures are used to determine the adhesion properties of double faced pressure sensitive tapes when subjected to impact at a low temperature.

Apparatus Required**Slamming Fixture**

The slamming fixture shown in the attached sketch (Figure 1) is used to deliver a uniform impact to the test panels. Contact area of the panel during slamming test is 12.5 mm on each side and bottom edge of the panel (Figure 5).

Cold Box

The cold box shall be large enough to accommodate the fixture during the slamming test. The box shall be capable of maintaining a temperature of - 40 °C.

Test Bars

The test bar material is a molding and extrusion grade of polyvinyl chloride with a durometer "A" hardness of 96 (Figure 2).

Source: Standard Products Company
2401 South Gulley Rd
Dearborn, Michigan

Foam Damper

The foam damper material is a Scott 3-900 C, 9.5 mm thick.

Source: Scott Paper Company
Livonia, Michigan

Steel Panels

The panels used in this test shall be the following:

Support panel 300 x 300 x 0.9 mm cold rolled steel painted or primed.

Test panel 100 x 300 x 0.9 mm cold rolled steel painted per ESB-M4P4-A using approved production materials or substrate systems as specified.

Roller

Roller described in ASTM D 1000 and modified by the addition of weights to obtain a total roller weight of 6.8 kg.

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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.

Procedure**1. Tape Sample Preparation for Tape Requirements**

Samples shall be applied to all substrates that have been cleaned with a 50/50 solution of distilled water and isopropyl alcohol (including test bars) by rolling once forward and once backward for the full length of the tape with a roller described in ASTM D 1000. The roller shall be modified by the addition of weights to obtain a total roller weight of 6.8 kg. The roller speed shall be 50 mm/s. A 6.8 kg load shall be applied for approximately 3 s on bonded assemblies.

2. Test Bar Preparation

(Test Bars described in Figure 2)

Apply primer (Norton Tite-R-Bond, No. 2287) to the 12.7 mm side of test bar. Allow to dry for 5 minutes.

Apply the non-liner side of the tape to the primer coated side of the test bar. Roll as described in para 1.

3. Test Bar Preparation (Painted Panels)

Apply four 12.7 x 75 mm test bars as described in Figure 2, on a freshly baked painted panel (100 x 300 x 0.9 mm) per ESB-M2P4-A and equally spaced.

4. Condition the bonded assembly for 24 h at 23 +/- 2 °C.
5. Place the panel and the slamming fixture in a cold box maintained at - 29 °C for a minimum of 4 h.
6. Insert the 100 x 300 x 0.9 painted steel panel with the test bars to the 300 x 300 x 0.9 steel panel by means of attachment. See Figure 4.
7. Raise the two slamming panels to the 90 degree level position and release.
8. Allow the panel to strike the fixture once. Perform the slam 10 times in rapid succession.
9. Observe whether any of the test bars have fallen off.
10. Note the mode failure.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.