

TECHNICAL BULLETIN

DOUBLE-COATED FOAM TAPE SYSTEM

PRODUCT:	MUNTIN TAPE – MT Series		
PRIMARY USE:	Provide long-term indoor and outdoor bonding to glass, ceramics, primed, painted, aluminum and plastic surfaces without silane / isopropanol pre-wash. The double-coated tape series was engineered specifically for resistance to air, water, detergents, moisture, light and dust penetration. Foam fills any irregularities and functionally provides cushioning, absorbs vibration and shock, and allows for expansion and contraction due to temperature variations. See associated sheets for specific testing and performance data.		
DESCRIPTION:	A cross-linked polyethylene foam coated on both sides with a high performance acrylic adhesive system developed specifically for extreme environmental exposures that does not require silane / isopropanol pre-treatment for adhesion to glass or ceramic surfaces.		
LINER:	74lb bleached paper liner		
TYPICAL PHYSICAL PROPERTIES:	Thickness	MTLG-190: Gray, 1/32" thick, polyethylene foam	0.03" nominal
		MTB-190: Black, 1/32" thick, polyethylene foam	0.03" nominal
		MTB-290: Black 1/16" thick, polyethylene foam	0.06" nominal
		Liner (nominal)	5.5 mils
	Peel Adhesion	See Attached Data NOTE: Peel tests are performed as per PSTC #101, which states one minute maximum dwell time. In general, for acrylic adhesives, longer residence time yields much higher peel values.	
Shear Adhesion	See Attached Data		

<u>Tests Performed</u>	<u>Condition</u>	<u>Time</u>	<u>Materials</u>
Cleavage Peels Shear Dynamic Shear Aging Fogging	Dry Water Immersion Detergent Immersion Heat Exposure UV	Initial 1 Day 7 Days 10 Days 3 Days 5 Days Failure Point	Vinyl Primed Wood Aluminum

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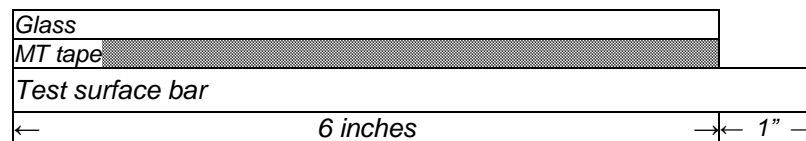
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MUNTIN TAPE – MT Series

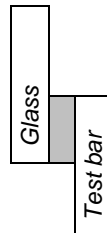
TESTING METHODS:

Peel Adhesion: PSTC #103 modified; backed with 1-mil PET.

Cleavage Test: Figure 1 illustrates the setup of the cleavage test. A 6-inch length of test tape is sandwiched between the glass and test surface bar. Bars are an inch longer than the tape so there is room to hang weight. 1000-gram weights are used for 15-minute dwelled samples and 2000-gram weights are used for 72-hour dwelled samples. Test assemblies are also placed in water or a Windex® solution for 72 hours after they are dwelled at room temperature for 72 hours. 500-gram weights are used for these samples. *Figure 1*



Lap Shear Test: Test specimens are setup in accordance with Figure 2. The test surface bar is assembled with a 1"×1" piece of the test tape and dwelled at room temperature for 15 or 72 hours. In the dynamic lap shear test, the glass and test bar are separated in reverse directions with a constant 2 inch/minute speed and the maximum force that is required to separate the sample is recorded. In the static lap shear test, a 1000 gram weight is hung on the muntin and the time that the test bar fails is recorded. *Figure 2*



Static Shear: PSTC#107 modified; at 158°F.

Fogging tests: Seal 60 in² of MT tape in a test tube, expose the tape to a constant UV source for 21 days at 180°F. Evaluate tape discoloration and residue at 3, 7, 14 and 21 days.

Xenon Weatherometer Exposure Per ASTM G26-96: Expose test bar/tape/glass assembly to intense xenon arc weatherometer with water spray for 30 days. Evaluate adhesion at 7-, 14-, and 30-days exposure.

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TEST RESULTS**

Peels: Dry Peel 180°

	Al	Glass	Primed Pine	Vinyl
RT X 15 min.	3.8 pli	>6.5 pli (foam tear)	1.6 pli	3.0 pli
RT X 72 hrs.	>6.5 pli (foam tear)	>6.5 pli (foam tear)	>6.5 pli (foam tear)	>6.5 pli (foam tear)
120°F X 72 hrs.	>6.5 pli (foam tear)	>6.5 pli (foam tear)	>6.5 pli (foam tear)	>6.5 pli (foam tear)

Peels: Peel Retention To Glass

	Days in H ₂ O	Immed.	1 day	3 day	5 day	7 day	10 day
MT TAPE	Without Silane	12+	12+	12+	12+	12+	12+
Competitor	With Wash	12+	7.3	0.2	-	-	-
	Without Wash		10+	10+	10+	5.3	4.2

Cleavage Tests (Test Condition)	Al	Raw Pine	Treated Wood	Primed Pine
Dry	10+ days	10+ days	10+ days	10+ days
72 hrs water immersion	2+ days	2+ days	10+ days	10+ days
72 hrs windex immersion	10+ days	10+ days	10+ days	10+ days

Lap Shears: Dynamic Lap Shear, Of Aluminum And Pine To Glass, max load (lbs) at failure, 1" X 1" overlap at 2 ipm separation speed, dwelled 15 min or 72 hrs prior to test.

	Aluminum	Primed Wood
Dwelled 15 min.	65 lbs.	74 lbs.
Dwelled 72 hrs.	73 lbs.	79 lbs.

Static Lap Shear, Of Aluminum, Pine, Treated Pine, and Primed Pine To Glass, Days to failure, 1" X 1" X 1 kg loading, samples are dwelled 15 min or 72 hours prior to test

	Aluminum	Primed Wood	Treated Pine	Primed Pine
Dwelled 15 min	3.5 days	5.8 days	2.1 days	4.9 days
Dwelled 72 hrs	7+ days	7+ days	7+ days	7+ days

Static Shear - Test A: Creep at 158°F Dwelled 10 days at RT 1" X 1" between glass and aluminum	Static Shear - Test B: Holding power at 150°F exposed side/liner side, No dwell, 1" X 1" X 1 kg
128.5 hrs	14+/14+ days

Fogging Test (Exposure Period)	3 days	7 days	14 days	21 days	Residue	Color Change	Final Evaluation
MT Tape	No visible deposit	No visible deposit	No visible deposit	No visible deposit	None	None	Pass

Weatherometer Exposure (exposure period)	7 days	14 Days	30 days
MT Tape	No adhesion loss; Test bars stay intact	No adhesion loss; Test bar stay intact	

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PRODUCT FEATURES:	<ul style="list-style-type: none">. Excellent water and detergent resistance.. No silane / isopropyl pre-wash required.. Acrylic adhesive system developed for extreme environmental applications.. Excellent UV resistance.. Excellent quick stick.. Moderate shear strength.. Bonds well to irregular surfaces.
SERVICE TEMPERATURE:	-30° F to 220° F. NOTE: This information is provided as a means to help characterize the adhesive's temperature resistance. Note that this data is based on limited testing and under no load. The practical service temperature of this or any adhesive system is dependent on many variables including the substrates being bonded, environmental conditions, and the loading and method of application. The purchaser is responsible for determining the suitability of this or any product for their particular purpose and process. The recommended application temperature is 68°F to 100°F.
NOTES:	Surfaces to be bonded should be dry, clean and free from grease and oil. Products should not be laminated to any material that contains migrating plasticizer.
SHELF LIFE:	One year from date of shipment when stored under cool, dry conditions.

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