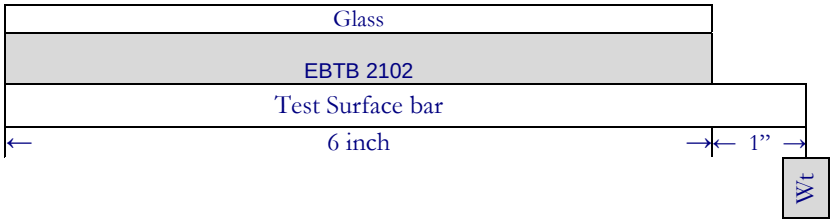
EXTREME ENVIRONMENT TAPE

DESCRIPTION: A cross linked polyethylene foam coated on both sides with a high performance acrylic adhesive system developed specifically for extreme environmental exposures. It does not require silane/isopropanol pre-treatment for adhesion to glass or ceramic surfaces.

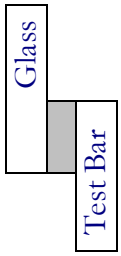
TESTING METHODS

Peel Adhesion: PSTC #3 modified; backed with 1 mil PET.

Cleavage Test: Figure 1 illustrates the setup of cleavage test: A 6" long length of test tape is sandwiched between 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 min dwelled samples. A 2000 gram weight are used for 72 hours dwelled samples. Test assemblies are also placed in water or Windex solution for 72 hours after they are dwelled at room temperature for 72 hours. A 500 gram weight is used for testing water immersed samples.



Lap Shear Test: Test specimens are setup in accord with the sketch below. The test surface bar is assembled with a 1"×1" piece of test tape and dwelled at room temperature for 15 or 72 hours. In dynamic lap shear test, the glass and test bar are separated at reverse direction with a constant 2 ipm speed. The maximum force that is required to separate the sample is recorded. The static lap shear test uses a constant 1000 gram weight on the test bar. The time of test bar failure is recorded.



Static Shear: PSTC#7 modified; at 158°F.

Fogging tests: (performed at independent lab): seal 60 in^2 MT290 tape in a test tube, expose the tape to a constant UV source for up to 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 bar/tape/glass assembly to intense xenon arc weatherometer with water spray. Evaluate adhesion at 7, 14 and 30 days exposure.

FOAMTAPES.NET

Peel Values

Peels: Dry peel (180°)

	Al	Glass	Primed Pine	Vinyl
RT×15 min	3.8 pli	>6.5 pli(foam tear)	1.6 pli	3.0 pli
RT×72 hrs	>6.5 pli(foam tear)	>6.5 pli(foam tear)	>6.5 pli(foam tear)	>6.5 pli(foam tear)
120°F ×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_2O	Immed.	1 day	3 day	5 day	7 day	10 day
MT290	without silane	12+	12+	12+	12+	12+	12+
Competitor	Without wash	12+	7.3	0.2	—	—	—
	With wash		10+	10+	10+	5.3	4.2

Cleavage Values

Cleavage Tests Test condition	Painted Al	Raw Pine	Treated Wood	Primed Pine
Dry	10+days	10+days	10+days	10+days
72 hrs water immersion	10+days	10+days	10+days	10+days
72 hrs Windex immersion	10+days	10+days	10+days	10+days

Shear Values

Lap Shears: Dynamic Lap Shear, of aluminum and pine to glass, max load (lbs) at failure, 1"×1" overlap at 2 ipm separation speed, dwelled 15 min or 72 hrs prior to test

	Painted 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"×"1×1 kg loading, samples are dwelled 15 min or 72 hours prior to test

	Painted 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

Long Term Heat Exposure

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

Exposure Values

Fogging Test Exposure period	3 days	7 days	14 days	21 days	Residue	Color change	Final evaluation
MT290	no visible deposit	no visible deposit	no visible deposit	no visible deposit	none	none	pass

Weatherometer exposure Exposure period	7 days	14 days	21 days
MT290	No adhesion loss; test bars stay intact	No adhesion loss; test bars stay intact	No adhesion loss; test bars stay intact

PRODUCT FEATURES:

- 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

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. Recommended application temperature for all substrates is above 50 degrees Fahrenheit.

SHELF LIFE: One year when stored under cool, dry conditions.