

**Product:** **MUNTIN BAR ACRYLIC ADHESIVE TAPE  
MT 190**

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

**MT-190:** Gray, 1/32" thick, 6 lb. density polyethylene foam.  
Note: Other foams available on special request.

**Primary Use:** Provide for long term indoor and outdoor bonding of glass, ceramics, primed, painted, aluminum and plastic muntin bars without silane enhanced isopropanol pre wash. The double-coated tape was engineered specifically resistance to air, water, detergents, moisture, light and dust penetration. Foam is also used to fill any irregularities and functionally provide cushioning, absorb vibration and shock, and allow for expansion and contraction due to temperature variations. See associated sheets for specific testing and performance data.

**Liner:** Available 74 lb bleached paper liner.

**Testing:**

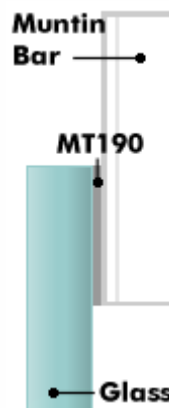
Tests Performed	Condition	Time	Materials
Cleavage	Dry	Initial	Vinyls
Peels	Water Immersion	1 Day	Primed
Shear	Detergent	7 Days	Wood
Dynamic Shear	Immersion	10 Days	Aluminum
Aging	Heat Exposure	3 Days	
Fogging	UV	5 Days	
		Failure Point	

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

**Cleavage:** The following diagram illustrates the setup of cleavage test: glass/muntin sample with a 6" long MT 290 tape sandwiched between glass and muntin bar. Muntin 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 is 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 specimens are setup in accord with the sketch below. The muntin bar is assembled with a 1"x1" of MT tape and dwelled at room temperature for 15 or 72 hours. In dynamic lap shear test, the glass and muntin 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 muntin. The time of muntin failure is recorded.



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

**Fogging:** (performed at independent lab): seal 60 in2 MT-290 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:** (ASTM G26-96, performed at independent lab): Evaluate muntin bar/tape/glass assembly under intense xenon arc weatherometer with water spray. Evaluate adhesion at 7, 14 and 30 days exposure.

**Test Results:**

Dry Peel (180°)				
	Aluminum	Glass	Primed Pine	Vinyl
RT x 15 min.	3.8 pli	>6.5 pli(foam tear)	Primed 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)

Peel Retention to Glass							
Days Submerged:	Immediately	1	3	5	7	10	
MT190 No Silane	12+	12+	12+	12+	12+	12+	
Competitor (no silane)	12+	7.3	0.2	--	--	--	
Competitor (w/ silane)	12+	10+	10+	10+	5.3	4.2	

Cleavage Values	Cleavage Tests				
	Conditions	Painted Aluminum	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&trade Immersion	10+ days	10+ days	10+ days	10+ days

Shear Values	Dynamic Lap Shear				
	Bonded to glass, max load (lbs.) at failure, 1" x 1" overlap at 2 ipm separation speed, dwelled prior to testing				
		Painted Aluminum		Primed Wood	
	15 minute dwell	65 lbs.		74 lbs.	
	72 hour dwell	73 lbs.		79 lbs.	
	Static Lap Shear				
	Bonded to glass, days to failure, 1" x 1" overlap at 1 kg load, dwelled prior to testing				
		Painted Aluminum	Primed Wood	Treated Pine	Primed Pine
	15 minute dwell	3.5 days	5.8 days	2.1 days	4.9 days
	72 hour dwell	7+ days	7+ days	7+ days	7+ days
Long Term Heat Exposure					
Static Shear - Creep Test			Static Shear - Holding Power		
Tested at 158°F, dwelled 10 days at room temperature, 1" x 1" sample between glass and aluminum			Tested at 150°F, no dwell, 1" x 1" sample with 1 kg load, exposed side/liner side		
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	
	MT190	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			
MT190	No adhesion loss; muntin bar intact		No adhesion loss; muntin bar intact		No adhesion loss; muntin bar 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
- MT Series complies with AAMA 810.1-92 for Glazing

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**Notes:**

Surfaces to be bonded should be dry, clean and free from grease and oil. Commercial window cleaners are recommended. Products should not be laminated to any material that contains migrating plasticizer.

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**Shelf Life:**

One year when stored under cool, dry conditions.

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