

3M Automotive and Aerospace solutions Div.
Technical Data Sheet

3M™ Acrylic Foam Tape RT8000 Series

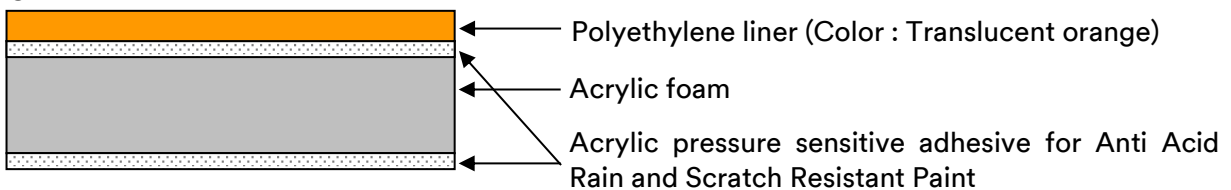
General Description:

3M™ Acrylic Foam Tape RT8000 Series, which is made by a special process, has a superior adhesion performance and high flexibility. This tape is specially designed for exterior and interior parts attachments of automobiles. 3M™ Acrylic Foam Tape RT8000 series can work well on the TOYOTA Anti Acid Paint and Scratch Resistant Paint.

Features:

- (1) To the TOYOTA Anti Acid Rain Paint and Scratch Resistant Paint surface
 - a) Meets the TOYOTA Engineering Standard “Pressure sensitive adhesive double coated tape for exterior parts”, and has a superior initial adhesion performance and durability.
 - b) Has the same workability as the standard type on the conventional paint.
 - c) Doesn’t detach from the paint surface because of a superior stress relaxation properties.
 - d) Still has a superior adhesion performance on the conventional paint surface, and can be used for the same applications as the standard type acrylic foam tape.
- (2) Follows the shrinkage and elongation of the plastic part caused by the temperature change, and has good stress relaxation properties which are very important for the automotive parts attachments.
- (3) Provides a very high final adhesion and peeling strength.
- (4) Excels in a variety of weather, solvent and high temperature resistance.

Configuration:



3M™ Acrylic Foam Tape

Product No.	Thickness	Color
RT8002	0.2mm	Gray
RT8004	0.4mm	
RT8006	0.6mm	
RT8008	0.8mm	
RT8010	1.0mm	
RT8012	1.2mm	
RT8016	1.6mm	
RT8020	2.0mm	
RT8025	2.5mm	White
RT8030	3.0mm	
RT8035	3.5mm	
RT8040	4.0mm	

* Liner thickness isn't included.

* The adhesive of the liner side is same as the non-liner side.

Usage: Several kinds of parts attachment, i.e. Body side molding, Emblem, Cladding panel, Spoiler, etc.

Test Result :

		Product No.	RT8008	#5521
Items	Substrate	Thickness (mm)	0.8	0.8
180 degree Peel strength (N/cm)	Painted panel	Initial	12.7	12.5
		Normal state	13.8	14.0
		High temperature	5.8	5.3
		Warm water deterioration	17.0	15.8
		Thermal deterioration	21.3	20.9
	PVC panel	Initial	17.7	18.2
		Normal state	17.8	18.2
		High temperature	8.9	8.6
		Warm water deterioration	15.8	16.7
		Thermal deterioration	16.7	17.0
Shear strength (MPa)	Painted panel and PVC panel	Initial	0.65	0.68
		Normal state	0.68	0.69
		High temperature	0.23	0.20
		Warm water deterioration	0.45	0.51
		Thermal deterioration	0.75	0.82
		Immersion in gasoline	0.47	0.45
Stress model test (mm)		Painted panel and Duralumin panel	2.0	1.5

* Painted panel : Anti Acid Rain Painted Panel

* PVC panel : 3M™ Adhesion Promoter N-200 is applied on the panel.

* Duralumin panel : 3M™ Adhesion Promoter N-200 is applied on the panel.

		Product No.	RT8002	RT8004	RT8006	RT8008	RT8010	RT8012
Items	Substrate	Thickness (mm)	0.2	0.4	0.6	0.8	1.0	1.2
180 degree Peel strength (N/cm)	Painted panel	Initial	6.3	8.7	10.7	12.7	13.1	13.5
		Normal state	6.9	9.2	12.1	13.8	14.5	14.7
		High temperature	2.7	4.1	5.2	5.8	6.2	6.4
		Warm water deterioration	9.7	13.4	16.1	17.0	18.0	19.0
		Thermal deterioration	10.5	15.7	19.0	21.3	22.4	22.9
	PVC panel	Initial	13.6	15.0	16.6	17.7	18.3	18.6
		Normal state	12.8	14.5	16.4	17.8	18.6	18.9
		High temperature	5.2	6.7	8.1	8.9	9.0	9.1
		Warm water deterioration	5.8	11.3	13.9	15.8	16.4	17.1
		Thermal deterioration	5.3	7.1	10.7	16.7	16.8	17.1
Shear strength (MPa)	Painted panel and PVC panel	Initial	0.92	0.87	0.79	0.65	0.61	0.57
		Normal state	0.91	0.89	0.83	0.68	0.63	0.59
		High temperature	0.22	0.23	0.24	0.23	0.22	0.21
		Warm water deterioration	0.62	0.58	0.51	0.45	0.42	0.39
		Thermal deterioration	0.89	0.90	0.80	0.75	0.71	0.66
		Immersion in gasoline	0.66	0.63	0.57	0.47	0.42	0.38

		Product No.	RT8016	RT8020	RT8025	RT8030	RT8035	RT8040
Items	Substrate	Thickness (mm)	1.6	2.0	2.5	3.0	3.5	4.0
180 degree Peel strength (N/cm)	Painted panel	Initial	14.3	15.0	16.3	17.9	19.4	20.4
		Normal state	15.9	17.7	19.9	21.6	22.7	23.2
		High temperature	6.7	7.0	7.4	7.9	8.2	8.5
		Warm water deterioration	20.6	22.0	23.2	23.8	24.5	25.2
		Thermal deterioration	23.8	24.5	25.2	25.9	26.8	27.2
	PVC panel	Initial	18.9	19.4	20.2	20.9	21.7	22.3
		Normal state	18.9	19.4	20.3	20.9	21.7	22.2
		High temperature	9.9	10.4	10.6	10.7	10.5	10.6
		Warm water deterioration	17.8	18.6	18.9	19.8	20.8	23.6
		Thermal deterioration	17.5	17.8	18.9	20.3	22.2	24.0
Shear strength (MPa)	Painted panel and PVC panel	Initial	0.46	0.41	0.36	0.34	0.32	0.32
		Normal state	0.47	0.41	0.36	0.34	0.33	0.32
		High temperature	0.17	0.14	0.12	0.11	0.10	0.10
		Warm water deterioration	0.36	0.33	0.31	0.30	0.29	0.29
		Thermal deterioration	0.56	0.50	0.46	0.44	0.42	0.41
		Immersion in gasoline	0.32	0.28	0.27	0.25	0.24	0.23

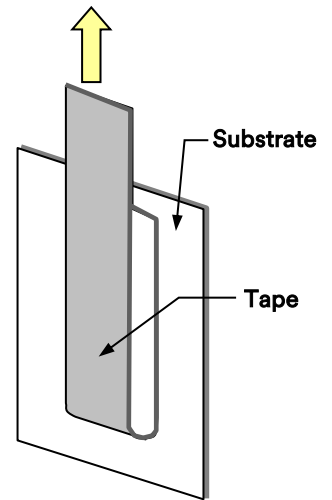
Test Methods : Based on TOYOTA Engineering Standard “Pressure sensitive adhesive double coated tape for exterior parts”

(1) Thickness : Measured by a thickness gauge

(2) 180 degree peel strength : Peel off the tape in 180 degree direction and measure the adhesion to the substrate with a tensile strength test machine after the exposures in the following conditions.

- a) Initial : 23 deg C x 20 min.
- b) Normal state : 23 deg C x 24 hrs.
- c) High temperature : b)→ at 80 deg C
- d) Warm water deterioration : b)→ 40 deg C water x 336 hrs. →b)
- e) Thermal deterioration : b)→ 80 deg C x 336 hrs. →b)

- * Substrate : Painted panel and PVC panel
- * Tape size : 25 mm width
- * Tape backing : 50 μm PET film
- * Rolling pressure : 5 kg roller one-way
- * Peeling speed : 50 mm/min.

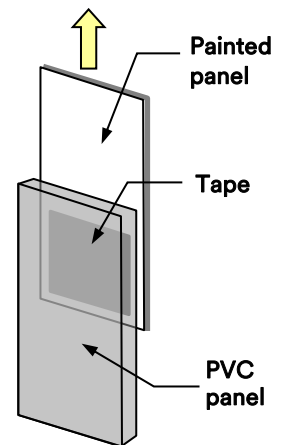


180 degree peel strength

(3) Shear strength : Measure the strength needed to shear.

- a), b), c), d), e) : as same as the conditions of 180 degree peel strength
- f) Immersion in gasoline : b)→ gasoline x 1 hr. →b)

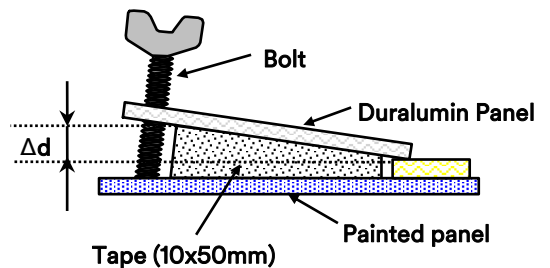
- * Substrate : Painted panel and PVC panel
- * Tape size : 25 mm x 25 mm
- * Rolling pressure : 5 kg roller one-way
- * Tensile speed : 50 mm/min.



Shear strength

(4) Stress model test : After the exposure the sample at 23 deg C x 24 hours, turn the bolt and add the distance Δd . After the warm water immersion of the sample in the water tank (40 deg C x 100 hours), take it out and check the tape detachment 20 minutes later.

- * Substrate : Painted panel and Duralumin panel
- * Tape size : 10 mm x 50 mm
- * Rolling pressure : 5 kg roller one-way



Stress model test

[Notice]

- In order to maintain superior performance , please store the tape under normal room temperature and humidity conditions.
- The data cited in the tables is the actual test data, and not a guaranteed value.
Please test to see if it can work well for the application which is under consideration.

Issue	2020-01	RT80_E-2
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