Acrylic *Plus* Tape Series EX4000

Technical Data Sheet **October 2009**

Supersedes technical data sheet dated October 2008

General Description

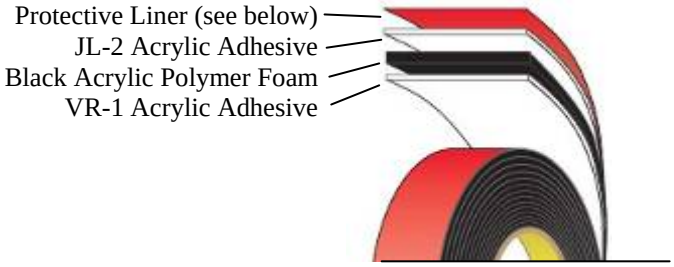
3M™ Acrylic *Plus* Tape Series EX4000 is a black, double-coated acrylic foam tape designed for the attachment of automotive exterior trim parts such as body side moldings and claddings. 3M Series EX4000 tape offers an advanced adhesive system that adheres well to traditional, low surface energy, and scratch- and mar-resistant automotive paint systems.

3M Series EX4000 tape offers the following key features:

- Excellent adhesion to traditional, low surface energy, and scratch- and mar-resistant automotive paint systems.
- Unique foam core that provides stress relaxation when high application loads are encountered, while maintaining tight bond-line aesthetics under normal conditions.
- Excellent resistance to impact in cold weather.
- Black color provides good bond-line appearance.

Some typical applications for 3M Series EX4000 tape include body side moldings, claddings, roof ditch moldings and wheel flares.

Product Construction



Shelf Life

One year from date of receipt by customer when stored at 4° C - 30° C (40° F - 100° F) and 0 - 95% relative humidity. Optimum storage conditions are 22° C (72° F) and 50% relative humidity.

Liner Options

Liner	Configuration	Heat-Bond Tab Compatibility
KL-1 Available on T versions	Red Polyethylene 1-side silicone-coated with secondary liner	Yes (3M™ Tabbing Tape 5400)
KL-2	Red Polyethylene 2-side silicone-coated	No Contact Technical Service for options

Physical Properties

	EX4008	EX4011	EX4015
Thickness Range	0.76 mm (0.030 in.) +/- 0.10 mm (0.004 in.)	1.14 mm (0.045 in.) +/- 0.13 mm (0.005 in.)	1.52 mm (0.060 in.) +/- 0.13 mm (0.005 in.)
Density Range	633 kg/m^3 (39.5 lb/ft^3) +/- 56 kg/m^3 (3.5 lb/ft^3)	545 kg/m^3 (34 lb/ft^3) +/- 56 kg/m^3 (3.5 lb/ft^3)	529 kg/m^3 (33 lb/ft^3) +/- 56 kg/m^3 (3.5 lb/ft^3)

Roll Width and Length

3M™ Acrylic *Plus* Tapes are available in the following standard widths. Millimeter widths are rounded to the nearest whole numbers and 1/8-inch increments starting with 1/4 inch.

Minimum widths:
4 mm Levelwound
5 mm Planetary (Standard versions)
6 mm Planetary (T versions)

Planetary

EX4011

Roll Width	Roll Width Tolerance	Roll Length (max)
< 8 mm (< 0.276 in)	+/- 0.40 mm (+/-0.015 in.)	66 meters (72 yards)
8 - 9 mm (0.276 - 0.375 in)	+/- 0.40 mm (+/-0.015 in.)	99 meters (108 yards)
10 - 18 mm (0.394 – 0.709 in)	+/- 0.40 mm (+/-0.015 in.)	132 meters (144 yards)
> 18 mm (> 0.709 in.)	+/- 0.80 mm (+/- 0.031 in.)	132 meters (144 yards)

EX4015

Roll Width	Roll Width Tolerance	Roll Length (max)
< 10 mm (< 0.315 in)	+/- 0.40 mm (+/-0.015 in.)	66 meters (72 yards)
> 10 mm (0.394)	+/- 0.40 mm (+/-0.015 in.)	99 meters (108 yards)

EX4011 T

Roll Width	Roll Width Tolerance	Roll Length (max)
< 8 mm (< 0.276 in)	+/- 0.40 mm (+/-0.015 in.)	66 meters (72 yards)
8 - 9 mm (0.276 - 0.375 in)	+/- 0.40 mm (+/-0.015 in.)	99 meters (108 yards)
10 – 18 mm (0.394 – 0.709 in)	+/- 0.40 mm (+/-0.015 in.)	132 meters (144 yards)
> 18 mm (> 0.709 in.)	+/- 0.80 mm (+/- 0.031 in.)	132 meters (144 yards)

EX4015 T

Roll Width	Roll Width Tolerance	Roll Length (max)
< 10 mm (< 0.315 in)	+/- 0.40 mm (+/-0.015 in.)	66 meters (72 yards)
> 10 mm (0.394)	+/- 0.40 mm (+/-0.015 in.)	99 meters (108 yards)

Levelwound

EX4011 – EX4011 T

Roll Width	Roll Width Tolerance	Roll Length (max)
4 - 14 mm (0.157 – 0.551 in)	+/- 0.40 mm (+/-0.015 in.)	900 meters (984 yards)
15 - 16 mm (0.591 – 0.630 in)	+/- 0.40 mm (+/-0.015 in.)	700 meters (765 yards)

EX4015 – EX4015 T

Roll Width	Roll Width Tolerance	Roll Length (max)
4 – 16 mm (0.157 – 0.630 in)	+/- 0.40 mm (+/-0.015 in.)	500 meters (545 yards)

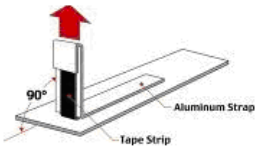
Performance Properties

Typical performance of 3M™ Acrylic *Plus* Tape Series EX4000 is shown below. Peel values depend on paint composition. These values are for reference only.

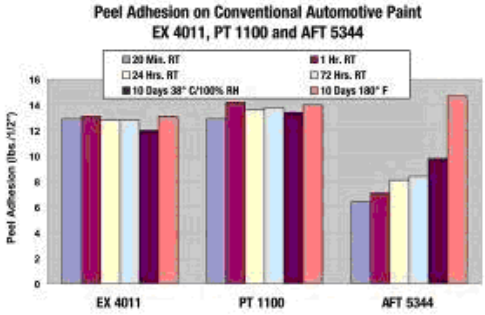
Note: Care should be taken to make sure the surface is clean and dry prior to application of the tape and to not saturate the tape with strong polar solvents, like alcohols, after initial application. After adhesion build, the JL-2 adhesive is durable to typical automotive environmental conditions and chemicals and provides a robust attachment solution. If this is a concern, please contact your 3M Technical Representative.

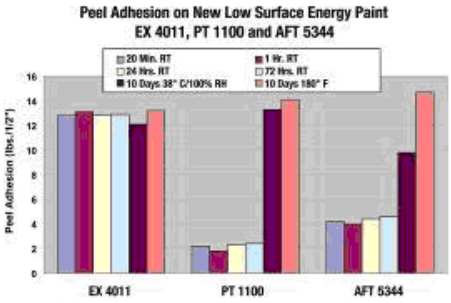
When using solvents, extinguish all ignition sources, including pilot lights and follow the manufacturer's precautions and directions for use.

90° Peel Adhesion Testing (Typical Results)



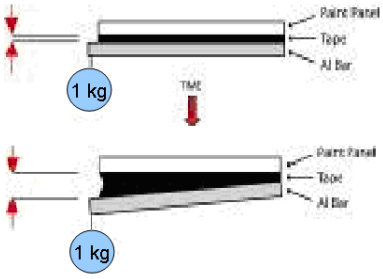
*** Test is performed on a Paint Panel**



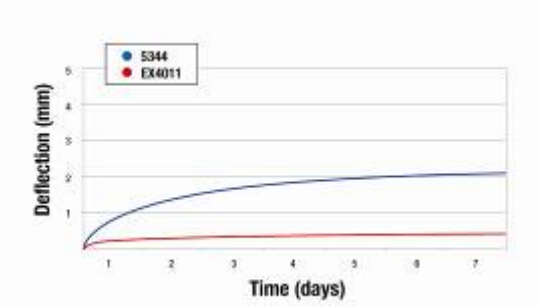


Static Break Away (Typical Results)

Deflection (Bondline Elongation)

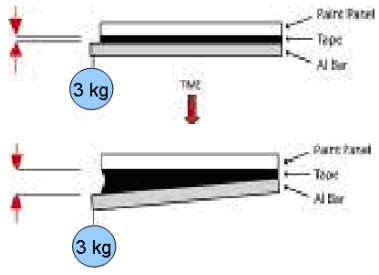


Low Static Load (1 kg)

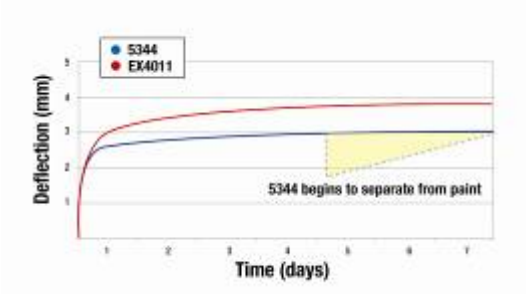


3M™ Acrylic *Plus* Tape EX4011 demonstrates low elongation properties under low load conditions for good bondline aesthetics.

Deflection (Bondline Elongation)



High Static Load (3 kg)



3M™ Acrylic *Plus* Tape EX4011 demonstrates high elongation properties under high load conditions to relieve stress for good durability.

Contact Information	The information provided in this technical document is intended as a guide for this product. For more information, and help selecting a 3M product for an application, please contact a 3M technical service representative.
Regulatory	Materials Safety Data Sheet (MSDS) available at 3M.com/msds International Material Data System Information • 3M™ Acrylic *Plus* Tape EX4008 IMDS# 82343678 • 3M™ Acrylic *Plus* Tape EX4011 IMDS# 65335482 • 3M™ Acrylic *Plus* Tape EX4015 IMDS# 82343784 These are published material entries on www.mdsystem.com.

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3M
Automotive Division
3M Center, Building 223-1S-02
St. Paul, MN 55144-1000
www.3M.com/autosolutions

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