

3M™ Acrylic Foam Tape Series PX5000

Technical Data Sheet



3M™ Acrylic Foam Tape Series PX5000 tapes are dark gray, double-coated acrylic foam tapes designed for attachment of automotive exterior trim parts such as body side moldings and claddings – without the use of adhesion promoter. 3M Series PX5000 tapes offer an advanced ZX adhesive system on both sides of the tape that adheres well to MSE and LSE substrates – as well as medium to difficult automotive clear coat systems.

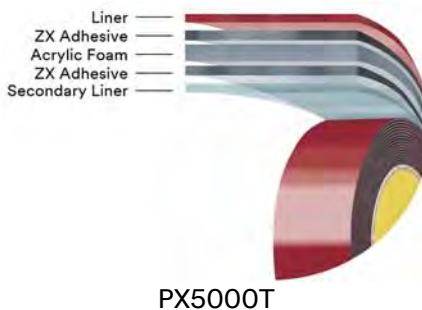
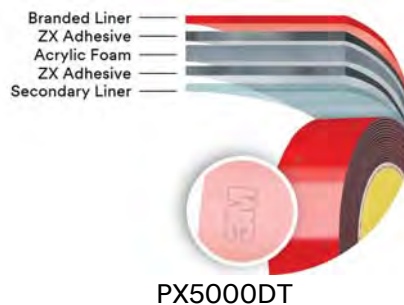
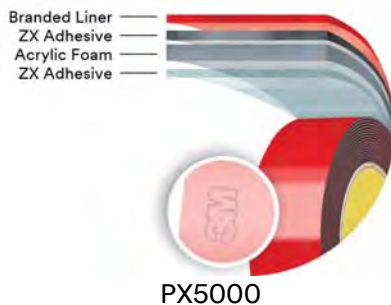
3M Series PX5000 tapes offer the following key features:

- Excellent primerless adhesion to medium and low surface energy plastics. Features high temperature (up to 80°C*) holding power on LSE plastics such as TPO, PP & PP/EPDM.
- Unique foam core provides stress relaxation when high application loads are encountered, while maintaining tight bond-line aesthetics under normal conditions.
- Very good adhesion to easy and medium difficulty paint systems. Capable of bonding to difficult paint systems depending upon the application. Speak to a 3M technical service representative.

Some typical applications for 3M Series PX5000 tapes include sensor bonding, body side moldings, claddings, and pillar garnishes.

* Applications demanding greater than 80°C holding require additional testing.

Product Construction



Liner Options

See the technical update "[3M™ Acrylic Foam and Acrylic Plus Tapes: Product Constructions](#)" for liner and tabbing information.

Physical Properties

	PX5005	PX5008	PX5011	PX5015
Thickness Range	0.51 mm (0.020 in) +/- 0.08 mm (0.003 in)	0.76 mm (0.030 in) +/- 0.08 mm (0.003 in)	1.14 mm (0.045 in) +/- 0.13 mm (0.005 in)	1.52 mm (0.060 in) +/- 0.15 mm (0.006 in)
Density Range	688 kg/m ³ (43 lb/ft ³) +/- 56 kg/m ³ (3.5 lb/ft ³)	688 kg/m ³ (43 lb/ft ³) +/- 56 kg/m ³ (3.5 lb/ft ³)	688 kg/m ³ (43 lb/ft ³) +/- 56 kg/m ³ (3.5 lb/ft ³)	688 kg/m ³ (43 lb/ft ³) +/- 56 kg/m ³ (3.5 lb/ft ³)
Color Range	32 +/- 5 L units	32 +/- 5 L units	32 +/- 5 L units	45 +/- 5 L units

Roll Width and Length

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

Minimum widths: 4 mm Levelwound, 5 mm Planetary (Standard versions). Maximum width for PX5000DT (log roll) is 600 mm (24 in) & maximum length depends on product.

Planetary - PX5000, PX5000DT and PX5000P

PX5005 and PX5008

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

PX5011 and PX5015

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

Levelwound – PX5000T

PX5005 and PX5008

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

PX5011 and PX5015

Roll Width	Roll Width Tolerance	Roll Length (max)
4 - 16 mm (0.157 - 0.630 in)	+/- 0.40 mm (+/-0.015 in)	500 M (545 yds)

Performance Properties

Typical performance of 3M™ Acrylic Foam Tape Series PX5000 is shown below. Peel and shear values depend on plastic substrate characteristics and/or 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. After adhesion build, the ZX adhesive is durable to typical automotive environmental conditions and chemicals and provides a robust attachment solution. For more details and application guidance, please contact your 3M Technical Representative.

Peel Performance

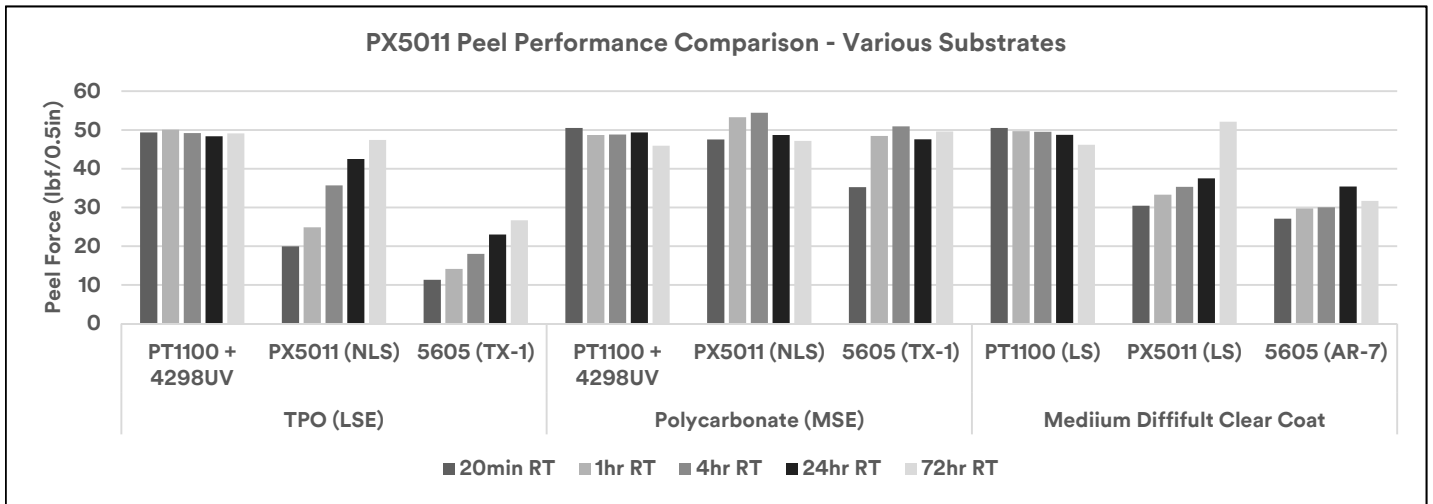


Fig. 1 – PX5011 Peel Adhesion Performance. Cohesive failure (foam split) values designated with solid bars. Test results dependent upon substrate grade.

Per the comparison in Fig. 1 above, PX5011 exhibits clear peel adhesion benefits on TPO – with values well over existing 3M™ Acrylic Foam Tape Technology (TX-1 adhesive layer on AFT 5605 Tape). Also, the peel performance of the PX5011 series after 24hrs RT dwell is roughly equivalent to that of 3M™ Pressure Sensitive Acrylic Plus Tape PT1100 used in conjunction with 3M™ Adhesion Promoter 4298UV.

High Temperature Holding Performance

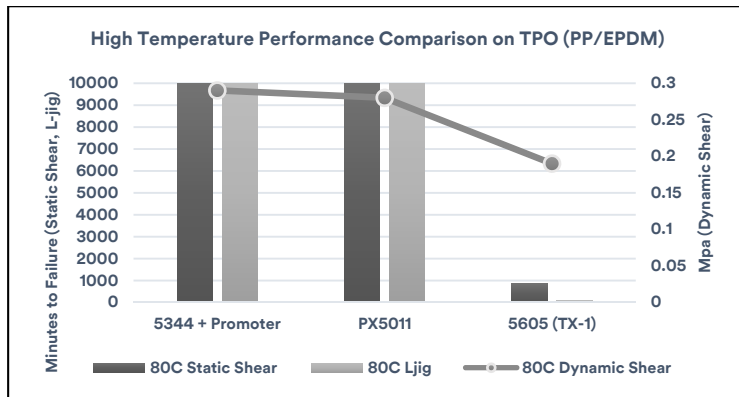


Fig. 2 – High Temperature Static Holding Performance Comparison

The chart in Fig. 2 provides a clear indication of the high temperature holding performance of the new PX5000 series product in comparison to existing products used in conjunction with adhesion promoter – as well as previous 3M primerless tape offerings.

As tested, the high temperature holding power of the PX5000 shows equivalent performance to standard 3M AFT products used in conjunction with adhesion promoters. Performance of the PX5000 series in high temperature static holding testing exhibits an order of magnitude improvement over previous 3M primerless tapes.

Products Tested per Schedule Below

Testing	Sample Size	Dwell	Load / Condition
Static Shear	25mm x 25mm	24hours @ 22C, 50% RH	500g @ 80C
Static L-jig			500g @ 80C
Dynamic Shear			50mm/min @ 80C

Product	Test Substrate	Adhesion Promoter	Failure Mode
3M AFT 5344 NLS (DS4 adhesive)	TPO (PP/EPDM) – Performance across full range of TPO, PP, PP/EPDM dependent upon material grade, surface, etc.	4298UV	Cohesive (Foam Split)
3M AFT PX5011 NLS (ZX adhesive)		N/A	Cohesive (Foam Split)
3M AFT 5605 NLS (TX-1 adhesive)		N/A	Adhesive (POP)

Performance to Automotive Clear Coat

With regard to clear coat performance, the 3M™ Acrylic Foam Tape Series PX5000 tapes will offer a general performance increase over existing AR7 products on most automotive clear coats – especially on more difficult clear coats. Work with your 3M Tech Service Engineer to develop testing specific to the requirements of your applications and clear coats to understand how the ZX adhesive system can perform.

Shelf Life

One year from date of receipt by customer when stored at 4°C - 38°C (40°F - 100°F) and 0 - 95% relative humidity. Optimum storage conditions are 22°C (72°F) and 50% relative humidity.

Regulatory Information

Please refer to the product label and Safety Data Sheet (SDS) for health and safety information before using. Observe proper handling precautions as outlined in the SDS, which is available on request or at www.3M.com/msds.

The product is published as a material entry and is available for access on www.mdssystem.com. For product IMDS I.D. number, email requests to 3M-IMDSrequest@mmm.com.

Contact Information

The information provided in this technical document is intended as a guide for this product. For more information or help in selecting a 3M product for an application, please contact your 3M technical service representative or call 1-800-328-1684.

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