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3M™ Acrylic Foam Tape PX5000 Series

Technical Data Sheet

General Description

3M™ Acrylic Foam Tape PX5000 Series tapes are gray, double-coated acrylic foam tapes designed for attachment of automotive parts without the use of an adhesion promoter. 3M PX5000 Series tapes feature an advanced ZX adhesive system on both sides of the tape that offers compatibility with adhesion to medium surface energy and low surface energy substrates – as well as a variety of automotive clear coat systems.

Some typical applications for 3M PX5000 Series tapes include sensor brackets, body side moldings, and pillar garnishes. Please work with a 3M application engineer to determine feasibility for your application.

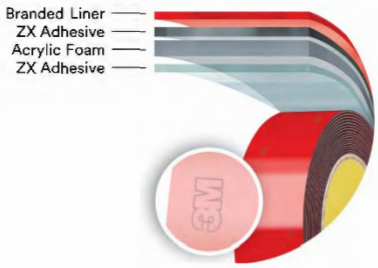
Product Features

- Primerless adhesion to medium and low surface energy plastics
- High temperature holding power (up to 90°C*) on low surface energy plastics such as thermoplastic olefin (TPO), polypropylene (PP), and polypropylene/ethylene propylene diene monomer (PP/EPDM), although application demanding greater than 80°C holding require additional testing
- Unique foam core provides stress relaxation when high application loads are encountered, while maintaining tight bond-line aesthetics under normal conditions
- Compatible with several high and medium surface energy paint systems

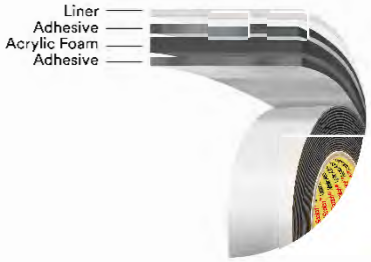
General 3M™ Acrylic Foam Tape Benefits

- Viscoelastic flexibility: unique formula for excellent adhesion and stress relaxation qualities that deliver conformability during thermal expansion and in periods of high stress
- Ease of use: tape can be die-cut into intricate shapes allowing for easy peel and stick bonding
- Design freedom: enables easy differentiation of vehicle models by providing flexibility to respond quickly to changes in design and materials

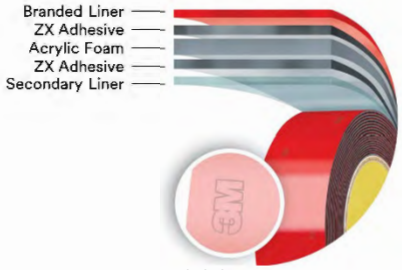
Product Construction



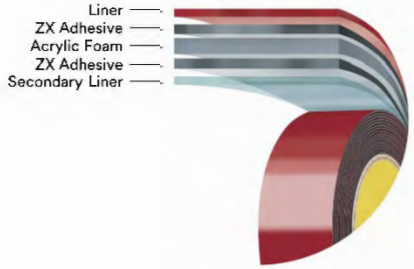
PX5000 / PX5000F*



PX5000P



PX5000DT



PX5000T

* PX5000F is the European Number for PX5000

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) +/- 0.10 mm (0.004 in)	1.52 mm (0.060 in) +/- 0.15 mm (0.006 in)
Density Range	780 kg/m^3 (48.7 lb/ft^3) +/- 56 kg/m^3 (3.5 lb/ft^3)	730 kg/m^3 (45.6 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)
Core/Color	Dark Gray, Acrylic Foam			
Adhesives	• ZX pressure sensitive adhesive for adhesion to LSE plastics without primer and compatible with many paint systems			
Liner	• PX5000/PX5000F: 3M Branded, red polyethylene, 2-sided-silicone-coated on both sides for easy release, 0.11 mm ± 0.01 mm (4.5 mils ± 0.4 mils) thick • PX5000DT: 3M Branded, red polyethylene, 1-sided silicone-coated liner on Planetary Rolls that enables heat-bond tabbing with secondary liner on non-liner side, 0.11 mm ± 0.01 mm (4.5 mils ± 0.4 mils) thick • PX5000T: Brick polyethylene, 1-sided silicone-coated liner on Levelwound Rolls that enables heat-bond tabbing, 0.097 mm ± 0.01 mm thick • PX5000P: White glassine paper, silicone coated on both sides, approximately 0.09 mm ± 0.01 mm thick, 90 gsm weight			

Tabbing

An extended liner tab is recommended

Tabbing Method and Liner Types	Tabbing Tape	Regional Availability
Heat-Bond Tabbing for DT and T Liner Versions	3M™ Tabbing Tape 5081 or 5082	EMEA
	3M™ Tabbing Tape 5400	USAC, LatAm
PSA Tabbing for Non-Silicone Coated Liners	3M™ Tabbing Tape 5300	Global
PSA Tabbing for Silicone Coated Liners	3M™ Tabbing and Splicing Tape 5699	Global

Consult application guidelines for detailed product use instructions.

Performance Properties

3M understands that development of automotive applications is typically driven by specification requirements and performance. Each OEM has their own unique criteria, and 3M continues to develop products to meet those demands. Test reports are available upon request. Please contact your 3M application engineer for support and to obtain specific test data.

Typical performance of 3M™ Acrylic Foam Tape PX5000 Series is shown below. Peel and shear values depend on substrate characteristics and/or paint composition. These values are for reference only, and not to be used for specification purposes. For 3M product specification values please see the certificate of analysis.

Floating Roller Peel, v=50 mm/min		
Substrate	**Conditioning**	**PX5011 Typical Performance Value (N/cm)**
Axalta Supermar MSE Clearcoat	24 h Room Temperature	40
	240 h 90°C	37
	240 h 70°C 100% RH	41
	48 h -40°C	40
TPO (Hifax779x)	Initial State, 24 h, Room Temperature	41
	240 h 90°C	34
	240 h 70°C	47
	48 h -40°C	39
Dynamic Shear, v=50 mm/min		
Substrate	**Conditioning**	**PX5011 Typical Performance Value (N/cm²)**
TPO (Hifax 779X) to Axalta Supermar Clearcoat	Initial State, 24 h, Room Temperature	108
	240 h 90°C	158
	240 h 40°C 100% RH, 8 h 70°C	100
	48°C -40°C	110

Static Shear Holding Power		
Substrate	**Conditioning**	**PX5011 Typical Performance Value**
TPO (Hifax 779X) to Axalta Supermar Clearcoat	Area 3 cm², 6 N/cm², Room Temperature	>30 Min
	Area 3 cm², 2 N/cm², 70°C	>30 Min
MSE Automotive paint Aluminum	Area 2.5 cm², 200 g/cm², Room Temperature	>100 h
	Area 2.5 cm², 100 g/cm², 90°C	>100 h

Shelf Life

Two years from date of manufacturing when stored in general indoor warehouse conditions, defined as approximately 4°C-38°C(40°F-100°F) and 30-70% relative humidity. The optimum storage conditions are 22°C (72°F) and 50% relative humidity.

3M Acrylic Foam Tape PX5000 SEries should be stored in typical storage conditions for pressure-sensitive adhesives used within the automotive industry.

Levelwound rolls should be stored horizontally. During transportation, storage conditions are uncontrolled for a short period of time (a few days or weeks). This should not impact product performance. However, materials should not be stored in excess of the recommended conditions for extended periods.

Regulatory Information

The product is published as a material entry and is available for access on www.mdsystem.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 application engineering representative or connect with a 3M expert.

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