



Bumpon™ Protective Products

Clear Polyurethane Rollstock

SJ-5632 • SJ-5616 • SJ-5608

Technical Data

April, 2005

Product Description

3M™ Bumpon™ Protective Products SJ-5632, SJ-5616 and SJ-5608 are resilient 70 durometer clear polyurethane sheet product utilizing an aggressive acrylic-based, pressure sensitive adhesive. These products have a high strength acrylic adhesive that provides excellent shear properties at elevated temperatures. The adhesive adheres well to glass, many metal surfaces, some paints, and many high surface energy plastics (Formica®, ABS, polycarbonate, etc.). **Note:** This adhesive is not recommended for use on low surface energy plastics (polypropylene, polyethylene, etc.)

Construction

Products	Bumpon protective product SJ-5632	Bumpon protective product SJ-5616	Bumpon protective product SJ-5608
Material:	Clear polyurethane		
Release Liner:	White 80 lb./ream silicone coated paper, printed 3M logo.		
Adhesive:	A-20 (acrylic)		
Color:	Transparent		
Thickness:*	1/32 in. 0.031 in. (0.8 mm)	1/16 in. 0.062 in. (1.6 mm)	1/8 in. 0.125 in. (3.2 mm)
Thickness Tolerance: ± (inches) ± (mm)	0.010 0.25	0.015 0.38	0.020 0.51
Roll Length:	72 yds.	36 yds.	36 yds.
Roll Widths:	4.5 in. (114.3 mm)	4.5 in. (114.3 mm)	4.5 in. (114.3 mm)
Slitting Tolerance: ± inches ± (mm)	0.031 (0.8)		

*ASTM-D-D-3767 procedure A (3.2 psi) measured without liner.

Special Products of the Design-A-Bump Program

3M can customize thickness to your specifications. Call your 3M sales representative for details. Custom products require a minimum order quantity.

The thickness capability range for 3M™ Bumpon™ 5600 series rollstock is 1/32 in. minimum and 1/8 in. maximum.

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Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Property	Test Method	Test Results
Hardness, Shore A	ASTM-D-2240	70
Approximate Density, lb./ft. ² (gm/cm ³)		70 (1.1)
Resilience, %	ASTM-D-2632	6
Kinetic Coefficient of Friction*	ASTM-D-1894 Glass, Stainless Steel Formica®	> 1 > 1
Abrasion Resistance, gm/1000 cycles	ASTM-C-501; Tabor H, 1 kg	0.13
Tensile, lb./in. ² (kPa)	ASTM-D-412, Die A	740 (5100)
Elongation, %	ASTM-D-412, Die A	65
Stain Resistance	3M - 24 hrs. at 158°F against white paint, 7 days, 7 days exposed to UV	No staining
Solvent Resistance	3M - 24 hr. immersion 5% Detergent in water 25% Detergent in water 5% Bleach in water Gasoline Motor Oil Isopropyl Alcohol	No apparent effect No apparent effect No apparent effect Slight swelling No apparent effect Slight swelling

*Two important laws of friction applicable to 3M™ Bumpon™ Rollstock Protective Products are (1) friction is independent of the area of contact between solids and (2) friction is proportional to the load between solids surfaces. Thus, if the load (weight) is doubled the force required to cause surface sliding is also doubled. This is expressed mathematically as follows:

$$\text{Slide force} = (\text{kinetic coefficient of friction}) \times (\text{weight})$$

Load Tolerance: The "recommended" maximum load which 3M™ Bumpon™ Protective Product 5600 series rollstock will support is 100 psi (690 kPa) at 70°F (21°C) to 120°F (49°C).

Application Temperature: 40°F (4°C) to 125°F (52°C)

Service Temperature: -30°F (-34°C) to 150°F (66°C); 225°F (107°C) intermittent exposure

Typical Adhesive Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Static Shear Adhesive Performance

Temperature Tested at:	Time to Failure, minutes
75°F (24°C)	> 10,000
120°F (49°C)	> 10,000
158°F (70°C)	> 10,000
180°F (82°C)	> 10,000

One in. overlap shear test; ASTM-D-3654-M (1000 gram); testing completed on stainless steel test panels using 3M™ Bumpon™ Protective Product SJ-5616.

90° Peel Adhesion Performance

Substrate	Peel Force, oz. per 1/2 in.
Polypropylene	3
Polystyrene	11
ABS	25
Stainless Steel	25
Aluminum	25
Glass	25

3M Test Method TM-2011; 72 hour dwell, 1/2 in. wide samples pulled at 12 in. per minute. Testing completed using Bumpon protective product SJ-5616.

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Environmental Exposure

3M™ Bumpon™ Protective Products Clear Polyurethane Rollstock is intended for interior applications where resilience and all other physical properties will remain unchanged. When exposed to UV light for extended periods, some discoloration may occur. Bumpon clear rollstock may be used outdoors in a protected area with some discoloration possible. Simultaneous exposure to high humidity and temperature may degrade (soften) the product composition.

Features

- Transparent – universal color match.
- Excellent resistance to yellowing.
- Can be die cut to a variety of shapes and sizes.
- Excellent resistance (Resulting from a urethane composition which contains no plasticizers.) to marring or staining.
- Long aging resiliency – will not crack or harden.
- Excellent cushioning properties.
- Excellent abrasion resistance.
- Vibration and shock damping.
- Easy application – pressure sensitive adhesive backing.

Application Ideas

- Die cut shapes for glass table tops, cushioning glass from metal and wood frames.
- Die cut shapes for use as cushions and spacers on cabinet doors, drawers, and lids.
- Die cut shapes for use as skid-resistant feet on small appliances and desk top equipment.
- Die cut shapes for use as cushions and pads on glass or clear plastic shelves.
- Strips or pads for use as skid-resistant surfaces on glass or clear plastic shelves.
- Antichafe protection.
- Corner protection strips.
- Door kick pads.

Application Techniques

To obtain maximum adhesion, surfaces must be unified, dry, and free of contaminants. Surface contact is fundamental to adhesive performance. To maximize contact on a substrate:

- Clean surfaces with low strength solvents such as isopropyl alcohol (rubbing alcohol) or heptane.

Note: Be sure to follow the solvent’s manufacturer’s precautions and directions for use when using solvents.

- Apply firm pressure to increase the cold flow and contact of the adhesive with the substrate.
- Allow time (dwell) to increase the surface contact and adhesion.

Note: Product selection is ultimately the user’s responsibility. Users should conduct their own tests under actual use and storage conditions to determine whether the product is fit for a particular purpose and method of application.

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Storage Store in original cartons at 60-80°F (16-27°C) and 40-50% relative humidity.

Shelf Life To obtain best performance, use this product within 18 months from date of manufacture.

Product Use All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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ISO 9001:2000

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