



# Bumpon™ Protective Products

## Clear Polyurethane Rollstock

### 5600 Series

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**Technical Data**

**March, 1995**

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|                            |         |                   |
|----------------------------|---------|-------------------|
| <b>Product Description</b> | SJ-5632 | 1/32 in. (0.8 mm) |
|                            | SJ-5616 | 1/16 in. (1.6 mm) |
|                            | SJ-5608 | 1/8 in. (3.2 mm)  |
|                            | SJ-5608 |                   |

Resilient 70 durometer clear polyurethane sheet product utilizing an aggressive acrylic-based, pressure sensitive.

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#### **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.
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#### **Application Ideas**

- Die cut shapes for glass table taps, 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 in glass or clear plastic shelves.
- Strips or pads for use as skid-resistant surfaces in glass or clear plastic shelves.
- Antichafe protection.
- Corner protection strips.
- Door kick pads.

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| Product Constructions           | Products                          | SJ-5632                           | SJ-5616                           | SJ-5608 |
|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|---------|
| Material:                       | Clear polyurethane                |                                   |                                   |         |
| Release Liner:                  | White 110 lb./ream silicone paper |                                   |                                   |         |
| Adhesive:                       | A-20 (acrylic)                    |                                   |                                   |         |
| Color:                          | Transparent                       |                                   |                                   |         |
| Thickness:*                     | 1/32 in.<br>0.031 in.<br>(0.8 mm) | 1/16 in.<br>0.062 in.<br>(1.6 mm) | 1/8 in.<br>0.125 in.<br>(3.2 in.) |         |
| Thickness Tolerance: ± (inches) | 0.010                             | 0.015                             | 0.020                             |         |
| ± (mm)                          | 0.25                              | 0.38                              | 0.51                              |         |
| Roll Length:                    | 72 yds.                           | 36 yds.                           | 36 yds.                           |         |
| Roll Widths:                    | 4.5 in.<br>(114.3 mm)             | 4.5 in.<br>(114.3 mm)             | 4.5 in.<br>(114.3 mm)             |         |
| Slitting Tolerance: ± inches    |                                   | 0.031                             |                                   |         |
| ± (mm)                          |                                   | (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 industrial Tape and Specialties Division Sales Representative for details. Custom products require a minimum order quantity.

The thickness capability range for 5600 series Rollstock is 1/32 in. minimum and 1/8 in. maximum

### Typical Physical Performance Characteristics

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

Acrylic (A-20) – This high strength adhesive 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®, ABC, polycarbonate, etc.) **Note:** This adhesive is not recommended for use on use on low surface energy plastics (polypropylene, polyethylene, etc.)

#### 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 SJ-5616 protector.

#### 90°C 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 SJ-5616 protector.

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

\* Two important laws of friction applicable to Bumpon brand Rollstock 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 5600 series Rollstock will support is 100 psi (690 kPa) at 70°F (21°C) to 120°F (46°C).

**Shelf Life:** Shelf life is 18 months from date of manufacture when stored in original cartons at 60-80°F (15-27°C) and 40-50% relative humidity.

**Environmental Exposure:** Clear 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. 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.

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### Application Ideas

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.

Application Temperature: +40°F (5°C) to 125°F (52°C)

Service Temperature: -30°F (-34°C) to 150°F (66°C)

225°F (107°C) intermittent exposure

**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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### For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-227-5085. Address correspondence to : 3M, Industrial Tape and Specialties Division, 3M Center, Building 220-8E-04, St. Paul, MN 55411-1000. Our fax number is 612-733-9175. in Canada, phone: 1-519-451-2500. in Puerto Rico, phone:1-809-750-3000. in Mexico. Phone: 5-728-0400.

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This Industrial Tape and Specialties Division product was manufactured under a 3M quality system registered to ISO 9002 standards.

# 3M

### Industrial Tape and Specialties Division

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70-0705-7643-7