

# 3M

## Scotchmate™

### Nylon Reclosable Fasteners

Product Selection Guide

July, 2002

#### Products

#### Plainbacked Products

##### Loop

SJ3401

SJ3418FR

##### Hook

SJ3402

SJ3419FR

#### Pressure Sensitive Adhesive Products

##### Unnapped Loop

SJ3595

SJ3529

##### Napped Loop

SJ3518FR

SJ3523

SJ3527

SJ3571

SJ3531

SJ3533

##### Hook

SJ3519FR

SJ3522

SJ3526

SJ3572

SJ3530

SJ3532

#### Product Description

3M™ Scotchmate™ reclosable fasteners consist of two strips of fabric which mate together with light finger pressure. The hook strip is covered with tiny, stiff hooks, about 300 hooks per square inch (46/sq. cm.). The loop strip is covered with thousands of soft, pliable loops. When pressed together by hand, the hooks and loops mate to form a secure fastening attachment. Simply pull the strips apart by hand to unfasten. These Scotchmate hook and loop fasteners are made of 100% nylon. They are preshrunk to provide dimensional stability and flatness.

#### Plainbacked Products

##### **SJ3402 Hook • SJ3401 Loop**

**Standard Sew-on:** These standard products provide a tailored appearance for garments and fabrics. They provide adjustable closure, and are washable and dry cleanable.

##### **SJ3419FR Hook • SJ3418FR Loop**

**Flame Resistant Sew-on:** Improved flame resistance compared to SJ3402/01 hook and loop fasteners, meets F.A.R. 25.853 paragraph (a)(1)(i) and (a)(1)(ii). These are 60 and 12 second vertical burn tests.

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### Product Description (continued)

#### Pressure Sensitive Adhesive (PSA) Products

These products allow hook and loop fasteners to be attached to substrates with the convenience and ease of adhesive attachment. Simply peel off the liner and press in place.

##### **SJ3526 Hook • SJ3527 Loop**

**General Purpose Rubber PSA:** These general purpose products offer high adhesive bond to a wide variety of materials, especially low surface energy materials such as polyethylene and polypropylene while providing excellent moisture resistance. When supporting static loads, temperature should not exceed 120°F (49°C) to avoid slippage or movement of the fastener in the direction of the static force due to softening of the adhesive.

##### **Operating Temperature Range:**

-20°F to 120°F (-29°C to 49°C)

##### **SJ3572 Hook • SJ3571 Napped Loop • SJ3595 Unnapped Loop**

**Premium Performance Acrylic PSA:** For many static load applications where temperatures may reach 200°F (93°C). Provides reliable performance over a wide range of temperature and environmental extremes.

##### **Operating Temperature Range:**

-20°F to 200°F (-29°C to 93°C)

##### **SJ3522 Hook • SJ3523 Loop**

**Plasticizer Resistant Acrylic PSA:** A unique pressure sensitive adhesive which resists adhesive softening or oozing caused by most plasticizer oils in flexible vinyl. This offers convenient attachment to many flexible, plasticized vinyls.

##### **Operating Temperature Range:**

-20°F to 158°F (-29°C to 70°C)

##### **SJ3519FR Hook • SJ3518FR Loop**

**Flame Resistant Synthetic Rubber PSA:** A high performance flame resistant adhesive, enabling these hook and loop fasteners to meet the requirements of F.A.R. 25.853 paragraph (a)(1)(i) and (a)(1)(ii). These are 60 and 12 second vertical burn tests.

##### **Operating Temperature Range:**

-20°F to 120°F (-29°C to 49°C)

##### **SJ3530 Hook • SJ3531 Napped Loop • SJ3529 Unnapped Loop**

**High Tack Synthetic Rubber PSA:** Suitable for many indoor applications, especially to low surface energy materials.

##### **Operating Temperature Range:**

-20°F to 100°F (-29°C to 38°C)

##### **SJ3532 Hook • SJ3533 Loop**

**Medium Tack Synthetic Rubber PSA:** Suitable for indoor applications requiring higher temperature performance than SJ3529/30 or 31.

##### **Operating Temperature Range:**

-20°F to 110°F (-29°C to 44°C)

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## Nylon Reclosable Fasteners

### Typical Physical Properties

**Note: The following technical information and data was collected under controlled laboratory conditions and should be considered representative or typical only and should not be used for specification purposes.**

	Plainbacked		Pressure Sensitive Adhesive Coated					
Hook:	SJ3402	SJ3419FR	SJ3526	SJ3572	SJ3522	SJ3519FR	SJ3530	SJ3532
Loop:	SJ3401	SJ3418FR	SJ3527	SJ3571	SJ3523	SJ3518FR	SJ3531	SJ3533
Unnapped Loop:				SJ3595			SJ3529	
Adhesive Type:	None	None	Rubber <sup>a</sup>	Acrylic	Acrylic	Rubber <sup>a</sup>	Rubber <sup>a</sup>	Rubber <sup>a</sup>
Liner on Adhesive <sup>b</sup> :	None	None	White PE & Red 3M Logo	Clear 3.5 mil PP & White 3M Logo	Clear PE	White PE & Red 3M Logo	Yellow PE	Yellow PE
Width, Inches (mm) <sup>c</sup> : ± 1/16 in. (1.6 mm)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51) 3 (76)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51) 4 (102)	5/8 (16) 3/4 (19) 1 (25) 1 1/4 (32) 1 1/2 (38) 2 (51)	5/8 (16) 3/4 (19) 1 (25) 1 1/2 (38) 2 (51) 4 (102)
Standard Colors <sup>d</sup> :	Black Beige White	Black Beige	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White
Roll Length <sup>e</sup> , yds. (m):	50 (45.7)	50 (45.7)	50 (45.7)	50 (45.7)	50 (45.7)	50 (45.7)	50 (45.7)	50 (45.7)
Fabricated Forms Available:	Cut Pieces	Cut Pieces	Cut Pieces	Cut Pieces	Cut Pieces	Cut Pieces	Cut Pieces	Cut Pieces
Shelf Life <sup>f</sup> :	2 Years	2 Years	1.5 Years	2 Years	2 Years	1.5 Years	1.5 Years	1.5 Years

a. All of our rubber adhesives contain synthetic rubber with no added latex.

b. PP: Polypropylene; PE: Polyethylene.

c. Not all widths for all products or colors may be available.

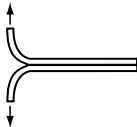
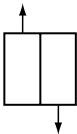
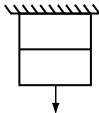
d. White color not available on Flame Resistant products due to possible discoloration. All products are available in additional non-standard colors. Contact your 3M sales representative or 3M authorized distributor for minimum quantities and lead times.

e. Under packaging conditions 70°F (21°C) and 50% R.H.

f. From date of manufacture, when stored in original packaging at 70°F (21°C), 50% R.H.

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<div> <div>Typical Closure Performance Characteristics</div> </div>	<div> <div>Note: The following technical information and data was collected under controlled laboratory conditions and should be considered representative or typical only and should not be used for specification purposes.</div> <div> <div> <div>Scotchmate reclosable fasteners derive their strength from the area of engagement as well as closure pressure. Vibration or side to side movement tends to improve closure performance. Closure characteristics are indicated by typical values.</div> <div> <div>Closure Performance<sup>a</sup></div> <div>Typical</div> </div> </div> </div> </div>
<div> <div>Dynamic T-Peel, lb./inch width (N/100 mm); ASTM D5170:</div> <div>  </div> </div>	<div> <div>2.6 (46)</div> </div>
<div> <div>Dynamic Shear, pounds force/square inch (k Newtons/m²); ASTM D5169:</div> <div>  </div> </div>	<div> <div>10 (69)</div> </div>
<div> <div>Dynamic Tensile, pounds force/square inch (k Newtons/m²):</div> <div>  </div> </div>	<div> <div>8 (55)</div> </div>

a. Hook and loop products were disengaged at a rate of 12" (305 mm)/minute.

# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

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### Attachment Techniques

The following information is intended to assist the designer considering the use of Scotchmate Reclosable Fasteners. Final product performance depends on actual conditions, including the fastener selected, the conditions in which the fastener is applied and the time and environmental conditions in which it is expected to perform. Because many of these factors are uniquely within the user's knowledge and control, it is required 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 and desired end use.

As a general rule, four square inches of fastener area per pound of static load to be supported is suggested as a starting point for evaluation. More or less area may be needed depending on specific conditions or end use applications.

There are typically six different methods for attaching Scotchmate to various surfaces. For complete details on techniques and options for attaching Scotchmate or Dual Lock Reclosable Fasteners please see the technical bulletin "Attachment of 3M Scotchmate™ and Dual Lock™ Reclosable Fasteners." The most important techniques for these Scotchmate products are summarized below.

**Pressure Sensitive Adhesive attachment:** The fasteners and substrate surfaces should have equilibrated for a minimum of 1 hour at temperatures of 68°F (20°C) or greater before application. These adhesive backed fasteners should be applied to surfaces that are smooth, dry and free of oils, mold release agents or other surface contaminants.

The substrate should be cleaned to remove any surface contaminants with an appropriate cleaning method for the customer's substrate, type and quantity of surface contaminants that need to be removed. **Note:** Follow the manufacturer's precautions and directions for use of the cleaning method(s) chosen.

After the substrate is clean, the liner is removed from the fastener and without touching the adhesive, the fastener is applied to the surface using firm roller pressure to help ensure complete adhesive contact to substrate. Adhesive bond strength increases with time, as the adhesive flows into the substrate structure. Handling strength is achieved immediately. Approximately 50% of ultimate bond strength is achieved at room temperature in the first 20 minutes, 90% after about 24 hours and 100% after about 72 hours for acrylic adhesives. For the rubber based adhesives, 100% bond strength is obtained in about 24 hours.

**Heat (Press) Bonding:** Scotchmate SJ3526, SJ3530, SJ3519FR and SJ3532 hook and SJ3527, SJ3529, SJ3518FR, SJ3531 and SJ3533 loop can be attached to many fabric and foam articles with a technique called press bonding. The fastener is adhered to the article, as indicated above, and bond strength is increased by typically applying heat and pressure to the adhesive side of the fastener through the fabric or foam article. Equipment can range from a simple household laundry iron to commercial press units. Product performance will depend on the nature of the fabric or foam and other conditions within any specific application. For this reason it is essential that the user evaluate the Scotchmate product to determine if it is fit for a particular purpose and suitable for the user's method of application.

Typical press bonding conditions:

Bonding Temperature:	250 to 425°F (121 to 218°C)
Bonding Pressure:	30 to 100 psi (207 to 690 kPa)
Bonding Time:	3 to 30 seconds

**Mechanical Attachment:** The bond strength can be increased by mechanically attaching it to difficult to adhere to surfaces such as textured plastics and wood by using staples. Alternatively wood products can be sealed and pressure sensitive adhesive backed fastener applied as discussed above.

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## Nylon Reclosable Fasteners

### Application Techniques (continued)

#### Sewing

Plainbacked Scotchmate reclosable fasteners can be attached with manual or semi-automatic sewing machines, generally utilizing the same thread used in the garment or fabric. Six to ten stitches per inch (25.4 mm) is suggested. These products are washable and dry cleanable.

#### Ultrasonic Bonding

Plainbacked Scotchmate reclosable fasteners can be bonded to themselves or other nylon fabrics with ultrasonic sealing equipment. This method can be used to provide straps and other fabricated forms.

### General Information

Pressure Sensitive Scotchmate reclosable fasteners can be bonded to a wide variety of materials. Some are listed below. Because product performance will depend on actual conditions within any specific application, it is essential that the user evaluate the Scotchmate product to determine if it is fit for a particular purpose and suitable for the user's method of application.

	Hook: Loop: Unnapped Loop:	SJ3526 SJ3527	SJ3572 SJ3571 SJ3595	SJ3522 SJ3523	SJ3519FR SJ3518FR	SJ3530 SJ3531 SJ3529	SJ3532 SJ3533
Bare Metals:		✓	✓	✓	✓	✓	✓
Painted Metals:		✓	✓	✓	✓	✓	✓
Powder Paint:		✓	—	—	✓	✓	✓
Fiberglass:		✓	—	—	✓	✓	✓
Structural Composites:		✓	—	—	✓	✓	✓
Glass:		✓	✓	✓	✓	✓	✓
Sealed Wood:		✓	✓	✓	✓	✓	✓
Plastics —							
ABS:		✓	✓	✓	✓	✓	✓
Acrylic:		✓	✓	✓	✓	✓	✓
Polycarbonate:		✓	✓	✓	✓	✓	✓
Polystyrene		✓	✓	✓	✓	✓	✓
Rigid Vinyl:		✓	✓	✓	✓	✓	✓
Plasticized Vinyl <sup>a</sup> :		—	—	✓	—	—	—
Polypropylene:		✓	—	—	✓	✓	✓
Polyethylene:		✓	—	—	✓	✓	✓

a. When attaching to plasticized vinyl (flexible PVC), evaluation for plasticizer migration is recommended. Adhere the fastener to the vinyl and age for seven days at 158°F (70°C) and inspect for signs of migration of plasticizer oils indicated by softness or oozing of the adhesive.

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### Certification/ Recognition

**MSDS:** 3M has not prepared a MSDS for this product which is not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

**TSCA:** This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

**Military Spec. MIL-F-21840:** All of our nylon products described in this publication meet the physical requirements of MIL-F-21840, Type IA, II and III Class 3. Note that Class 5 requirements are met by mating SJ3571 to SJ3576 or SJ3586FR.

**CID A-A-55126A:** CID A-A-55126A supersedes Mil-F-21840. All of our nylon products described in this publication meet the physical requirements of CID A-A-55126A, Type II, Class 1.

**GM 2743M Type II:** SJ3571 and SJ3572 meet the requirements of GM2743GM Type II.

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### For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit [www.3M.com/adhesives](http://www.3M.com/adhesives). Address correspondence to: 3M Engineered Adhesives Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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### Important Notice

3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which 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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### Limitation of Remedies and Liability

If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.

ISO 9002

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



#### Engineered Adhesives Division

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10% post-consumer

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