

3M Scotchmate™ Industrial Fasteners

Technical Data

March, 1996

Products	Plainbacked Products	<ul style="list-style-type: none"> SJ 3402 Hook SJ 3401 Loop 	<ul style="list-style-type: none"> SJ 3419 Hook SJ 3418 Loop
	Pressure Sensitive Adhesive Products	<ul style="list-style-type: none"> SJ 3526 Hook SJ 3519 Hook SJ 3537 Loop SJ 3572 Hook SJ 3571 Loop 	<ul style="list-style-type: none"> SJ 3536 Hook SJ 3527 Loop SJ 3518 Loop SJ 3522 Hook SJ 3523 Loop

Product Description Scotchmate industrial 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 pre-shrunk 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.
SJ3419 Hook • SJ3418 Loop
Flame Resistant Sew-on: Improved flame resistance compared to SJ3402/01 hook and loop fasteners, meets F.A.R. 25.853 paragraph (a). This is a 60 second vertical burn test.

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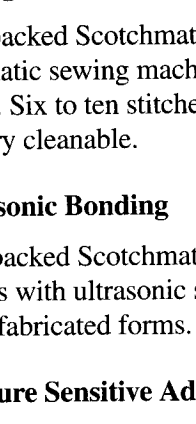
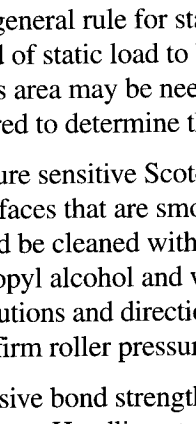
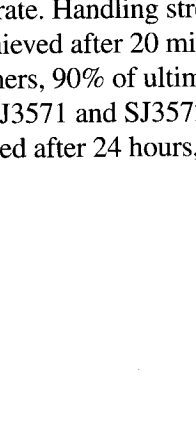
Product Description <i>(continued)</i>	Pressure Sensitive Adhesive (P/S) Products
	<p>SJ3526 Hook • SJ3527 Loop General Purpose P/S: These products allow hook and loop fasteners to be attached to substrates with the convenience and ease of adhesive attachment. Simply peel off the liner and press in place. These general purpose products offer high adhesive bond to a wide variety of materials, and provide 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.</p> <p>Operating Temperature Range: -20°F to 120°F (-29°C to 49°C) Continuous -20°F to 158°F (-29°C to 70°C) Intermittent</p> <p>SJ3572 Hook • SJ3571 Loop Premium Performance VHB™ P/S: 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.</p> <p>Operating Temperature Range: -20°F to 200°F (-29°C to 93°C) Continuous</p> <p>Pressure Sensitive Adhesive Coated Products (continued)</p> <p>SJ3536 Hook • SJ3537 Loop Limited Purpose P/S: For adoption in applications not appropriate for SJ3526/27 or SJ3571/72 hook and loop fasteners. These would be for evaluation in applications supporting static loads, involving BOTH (a) difficult surfaces such as polypropylene, AND (b) temperatures up to 158°F (70°C).</p> <p>Operating Temperature Range: -20°F to 120°F (-29°C to 49°C) Continuous -20°F to 158°F (-29°C to 70°C) Intermittent</p> <p>SJ3522 Hook • SJ3523 Loop Plasticizer Resistant P/S: Coated on the backside with a unique pressure sensitive adhesive which resists attack from most plasticizer oils in flexible vinyl. This offers convenient P/S attachment to many flexible, plasticized vinyl fabrics.</p> <p>Operating Temperature Range: -20°F to 120°F (-29°C to 49°C) Continuous -20°F to 158°F (-29°C to 70°C) Intermittent</p> <p>SJ3519 Hook • SJ3518 Loop Flame Resistant P/S: Coated on the backside with a high performance flame resistant adhesive, enabling these hook and loop fasteners to meet the requirements of F.A.R. 25.853 paragraph (a). This is a 60 second vertical burn test.</p> <p>Operating Temperature Range: -20°F to 120°F (-29°C to 49°C) Continuous -20°F to 160°F (-29°C to 71°C) Intermittent</p>

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Typical Physical Properties	Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.							
		Plainbacked				Pressure Sensitive Adhesive Coated		
Hook:	SJ3402	SJ3419	SJ3526	SJ3572	SJ3536	SJ3522	SJ3519	SJ3518
Loop:	SJ3401	SJ3418	SJ3527	SJ3571	SJ3537	SJ3523	SJ3518	SJ3517
Fastener Fabric:	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon
Adhesive Type:	None	None	Rubber	Acrylic	Rubber	Acrylic	Rubber	Rubber
Liner on Adhesive ^a :	None	None	White PP	Clear PE	Blue PP	Clear PE	White PP	White PP
Width, Inches (mm): ± 1/16 in. (1.6 mm)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)	5/8 (16) 3/4 (19)
	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)	1 (25) 1 1/2 (38) 2 (51)
Standard Colors ^b :	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White	Black Beige White
Roll Length ^c , 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 ^d :	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year

a. PP: Polypropylene; PE: Polyethylene
 b. White color not available on flame resistant products due to discoloration. All products are available in twenty additional non-standard colors. Minimum quantities and lead times are listed on the price page.
 c. Under packaging conditions 70°F (21°C) and 50% R.H.
 d. One year from date of receipt by customer, when stored in original packaging at 70°F (21°C), 50% R.H.

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Typical Performance Characteristics	Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.		
	Scotchmate industrial fasteners derive their strength from the area of engagement as well as closure pressure. Vibration or side to side movement tends to help improve closure performance. Closure characteristics are indicated by both minimum and typical values.		
Closure Performance ^a		Minimum	Typical
Dynamic Peel, lb./inch width (N/100 mm):		1.25 (22)	2.6 (46)
			
Dynamic Shear, lb./square inch (kPa):		9 (62)	21 (145)
			
Dynamic Tensile, lb./square inch (kPa):		4 (28)	8 (55)
			

a. Hook and loop products are engaged with firm pressure and disengaged at a rate of 12" (305 mm)/minute.

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Attachment Guide	Sewing
	Plainbacked Scotchmate industrial 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 industrial 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.
	Pressure Sensitive Adhesive Attachment
	As a general rule for static load applications, four square inches of fastening 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. Evaluation by the user is required to determine the optimum fastening area for any particular application.
	Pressure sensitive Scotchmate industrial fasteners should be applied above 68°F (20°C) to surfaces that are smooth, dry and free of oils, grease or mold release agents. Surfaces should be cleaned with an appropriate cleaning solvent such as rubbing alcohol (mix of isopropyl alcohol and water) or heptane. Note: Be sure to follow the manufacturer's precautions and directions for use when using solvents. Apply the fastener to the substrate with firm roller pressure to help ensure complete adhesive contact on the substrate.
	Adhesive bond strength increases with time, as the adhesive flows onto the surface of the substrate. Handling strength is achieved immediately and 50% of ultimate bond strength is achieved after 20 minutes. For all products except SJ3571 and SJ3522 hook and loop fasteners, 90% of ultimate bond strength is reached after one hour, 100% after 24 hours. For SJ3571 and SJ3522 hook and loop fasteners, 90% of ultimate bond strength is reached after 24 hours, 100% after 72 hours.

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Attachment Guide <i>(continued)</i>	Pressure Sensitive Scotchmate industrial 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:	SJ3526	SJ3572	SJ3536	SJ3522	SJ3519
Loop:	SJ3527	SJ3571	SJ3537	SJ3523	SJ3518	
Bare Metals:	✓	✓	✓	—	✓	
Painted Metals:	✓	✓	✓	—	✓	
Powder Paint:	✓	—	✓	—	✓	
Fiberglass:	✓	✓	✓	—	✓	
Structural Composites:	✓	✓	✓	—	✓	
Glass:	✓	✓	✓	—	✓	
Sealed Wood:	✓	✓	✓	—	✓	
Plastics —						
ABS:	✓	✓	✓	—	✓	
Acrylic:	✓	✓	✓	—	✓	
Polycarbonate:	✓	✓	✓	—	✓	
Polystyrene:	✓	✓	✓	—	✓	
Rigid Vinyl:	✓	✓	✓	—	✓	
Plasticized Vinyl ¹ :	—	—	—	✓	—	
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.

Press Bonding
 Scotchmate SJ3526 hook and SJ3527 loop can be attached to many fabric and foam articles with a technique called press bonding. The fastener is adhered to the article, and bond strength is achieved by applying heat and pressure. 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 - 425°F (121 - 218°C)
 Bonding Pressure: 30 - 100 psi (207 - 690 kPa)
 Bonding Time: 3 - 30 seconds

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Attachment Guide <i>(continued)</i>	Flame Resistance Properties					
	Flame resistant plainbacked SJ3419 hook and SJ3418 loop, regular plainbacked SJ3402 hook and SJ3401 loop, and flame resistant pressure sensitive SJ3519 hook and SJ3518 loop were tested by themselves, not being attached to any substrate. The other Scotchmate products were tested when attached to a substrate, to simulate an actual application. It is recommended that the user perform the appropriate flammability tests on their finished article or subassembly. The results of this flammability testing are summarized below:					
		Plainbacked		Pressure Sensitive Adhesive Coated		
	Hook:	SJ3419	SJ3402	SJ3519	SJ3526	SJ3572
	Loop:	SJ3418	SJ3401	SJ3518	SJ3527	SJ3571
F.A.R. 25.853 paragraph: ¹	(a) ¹	(b-3) ¹	(a) ¹	(b)2&(b-2)2	(b)2&(b-2)2	(b)2&(b-2)2
FMVSS 302.2**	Yes ¹	Yes ¹	Yes ¹	Yes ²	Yes ²	Yes ²

1. When tested alone, unattached to any substrate.
 2. When tested attached to metal panels, to simulate an actual application.
 SJ3522 hook and SJ3523 loop were not tested.
¹ Scotchmate industrial fasteners have been tested for flammability requirements in Federal Aviation Regulation F.A.R. 25.853. This includes:
 (a): 60 second vertical burn test.
 (b): 12 second vertical burn test.
 (b-2): 15 second horizontal burn test.
 (b-3): 15 second horizontal burn test.
² Scotchmate industrial fasteners have also been tested for requirements of Federal Motor Vehicle Safety Standard FMVSS 302, a 15 second horizontal burn test.

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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. Address correspondence to: 3M Bonding Systems Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-0000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-809-750-3000. In Mexico, phone: 6-728-2180.
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