



Dual Lock™ Low Profile Reclosable Fastener

SJ4570

Technical Data

July, 2004

Product Description

3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4570 can replace conventional fasteners, such as screws, clips, rivets, snaps, hook and loop and bolts in many applications where access or repositioning is needed. Dual Lock low profile reclosable fastener SJ4570 consists of continuous strips of plastic backing, with tiny plastic mushroom shaped stems protruding up from the backing strip. When two pieces of 3M™ Dual Lock™ Low Profile Reclosable Fasteners are pressed together, the “mushroom heads” interlock with one another creating an audible snap, indicating the fastener is engaged. The Dual Lock low profile reclosable fastener is thinner allowing it to be more flexible than similar reclosable fasteners. In addition, the Dual Lock low profile reclosable fastener offers intermediate strength between regular 3M™ Dual Lock™ and 3M™ Scotchmate™ Reclosable Fasteners, with all of the advantages of a self-mating product.

Product Construction

Material of Construction:	Polypropylene
Backing Color:	Clear
Adhesive: Color:	Clear
Type:	300 LSE (Acrylic)
Liner Type:	6.5 mil 86# Polycoated Kraft

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.

Weight, ounce/1 in. ² (grams/cm ²):	0.012 (0.044)
Operating Temperature Range:	-20°F (29°C) and up to 158°F (70°C)
Engaged Thickness, inch (mm) ± 15%: (without liner)	0.107 (2.7)
Plasticizer Resistance:	No
Closure Cycle Life:	25-100

- Cycle Life is the number of cycles (openings and closings) that the fastener is subjected to while maintaining ≥ 50% of the original values for tensile, shear or peel.

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Typical Performance Characteristics

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(Closure Performance)

Dynamic Tensile Engagement Strength, lbs/sq. inch (kNewtons/m ²):	26 (179)	
Dynamic Tensile Disengagement Strength, lbs/sq. inch (kNewtons/m ²):	42 (289)	
Dynamic Shear (1" x 1" overlap) Strength, lbs/sq. inch (kNewtons/m ²):	32 (220)	
90° Angle T-Peel Lbs/inch width (N/cm)	1.2 (2.1)	
Static Shear Holding Power on Stainless Steel	Lbs./sq. in. (g/cm²) 2.2 (70.3)	Lbs./sq. in. (g/cm²) 1.1 (35.2)
- at -20°F:	10,000 minutes	10,000 minutes
- at 72°F/50% relative humidity:	10,000 minutes	10,000 minutes
- at 158°F:	NA	10,000 minutes
Static Tensile Holding Power on aluminum		
- at -20°F:	10,000 minutes	10,000 minutes
- at 72°F/50% relative humidity:	10,000 minutes	10,000 minutes
- at 158°F:	NA	10,000 minutes

(Adhesive Performance)

	To Stainless Steel	To Polypropylene	To ABS
90° Angle Peel Adhesion: Lbs/inch width (N/cm)			
- after 1 week at 72°F/50% relative humidity:	9.1 (15.9)	6.5 (11.4)	8.9 (15.6)
- after 1 week at 158°F:	6.2 (10.9)	4.6 (8.1)	5.0 (8.8)
- after 1 week at 100°F/100% relative humidity:	5.9 (10.3)	6.3 (11.0)	6.6 (11.6)

- Disengaged or peeled at the rate of 12 inches (305 mm) per minute.

Note: In long term static load applications, conditions such as temperature variation, jarring, vibration, etc., can affect long term performance. The user should design the amount of fastening area based on the specific conditions in the application. Four square inches of fastening area per pound of static load is suggested as a starting point for such evaluations.

Available Sizes

Standard Widths (inches ± 1/32"):	Standard Roll Length:
5/8"	25 yds & 50 yds
1"	25 yds & 50 yds
2"	50 yds
4"	50 yds & 75 yds
6"	75 yds

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Attachment Guide

PRESSURE SENSITIVE ADHESIVE ATTACHMENT:

The adhesive system provides reliable bonding to a wide variety of materials:

Bare Metals	Many Plastics: ABS
Painted Metals	Acrylic
Glass	Polycarbonate
Fiberglass	Polystyrene
Sealed Wood	Rigid Vinyl
Structural Composites	Powder Coated Paints
Glass	

Attachment Techniques

The following information is intended to assist the designer considering the use of 3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4570. Final product performance depends on actual conditions, such as fastener selected, the conditions in which the fastener is applied, 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 (57.3 square centimeters per kilogram) 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 6 different methods for attaching Dual Lock low profile reclosable fasteners to various surfaces. The most important technique for Dual Lock low profile reclosable fastener SJ4570 is summarized below. For complete details on techniques and options for attaching 3M™ Scotchmate™ or 3M™ Dual Lock™ Reclosable Fasteners please see the technical bulletin "Attachment of 3M™ Scotchmate™ and 3M™ Dual Lock™ Reclosable Fasteners."

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 with an appropriate cleaning method for the customer's substrate(s) and surface contaminant(s) and amount that need to be removed.

NOTE: Be sure to follow the manufacturer's precautions and directions for use when using solvents, or other cleaning method.

The liner is removed and without touching the adhesive, the fastener is applied to the surface using firm roller pressure to help ensure complete adhesive contact to the substrate. The pressure-sensitive adhesive bonds on contact and parts can be handled immediately. Adhesive bond strength increases with time, pressure and temperature. A minimum of twenty four (24) hours dwell is recommended before applying a load or disengaging. Recommended time to achieve maximum bond strength is 72 hours (3 days).

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Application Ideas Backed with 3M™ Laminating Adhesive 300LSE, 3M™ Dual Lock Low Profile Reclosable Fastener SJ4570 is designed for powder-coated paint, polypropylene, and surfaces lightly contaminated with oil as well as acrylic, sealed wood, glass, metal, foam and fiberglass. Used in POP (point of purchase), trade show exhibition and electronics, Dual Lock low profile reclosable fastener SJ4570 attaches ceiling tiles, carpet, seat cushions, trade show graphics, access panels, wall panels and small electronic devices.

Storage Store in original package at 72°F (22°C) and 50% relative humidity.

Shelf Life If stored under proper conditions, product retains its performance and properties for two years 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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