



## Technical Data Sheet

### 3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4580

#### **Product Description**

3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4580 has a clear 15 mil acrylic adhesive system with approximately 705 stems per square inch (109 stems/cm<sup>2</sup>). Dual Lock low profile reclosable fasteners can reduce the number of or replace conventional fasteners such as screws, clips, rivets, snaps and bolts in many applications.

Dual Lock low profile reclosable fasteners consist of continuous plastic strips with stems protruding from a plastic backing with mushroom shaped tops. When two pieces of Dual Lock low profile reclosable fasteners are pressed together, the mushroom heads interlock with one another giving an audible snap, providing a fast reclosable attachment system. To open, simply pull or peel apart.

Dual Lock low profile reclosable fastener SJ4580 is designed to function over a range of temperatures and humidity. The adhesive is especially suited for attachment to bare metals and a variety of substrates. For attachment to powder coated paints or other low surface energy substrates such as polyethylene or polypropylene, 3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4570 and 3M™ Dual Lock™ SJ3540 family of products or our line of 3M™ Scotchmate™ Reclosable Fasteners with a rubber based adhesive should be evaluated.

Dual Lock low profile reclosable fasteners can be mated to each other forming a reusable attachment system. In some cases, this fastener may be mated with 3M™ Scotchmate™ Loop Fasteners giving high peel and very high shear strength, but with fewer cycles than self-mated Dual Lock low profile reclosable fastener.

#### **Product Features**

- Easy Alignment: Dual Lock fasteners engage in any direction or position. The mushroom stems slide into position until they are engaged by snapping together applying firm pressure, this eliminates concerns about misalignment or spontaneous engagement.
- Positive Locking: Dual Lock fasteners engage/fasten with an audible snap and detectable movement assuring complete and secure closure.
- Reclosability: Dual Lock fasteners can be opened and closed for multiple closure applications (high cycle life).
- Blind Attachment: Dual Lock fasteners can be attached on the backside of substrate (i.e. trim piece) where it will not interrupt the show surface.
- Rattle-Free: Dual Lock fasteners will not rattle loose.
- Ease of Assembly: Dual Lock fasteners can be used to attach components before they enter the final assembly plant, reducing the number of parts and the assembly time. No tools are required.
- Adjustable Strength: By selecting different combinations of the various stem densities of the Dual Lock the fastener can be designed to meet the strength needs of the designer.
- Product Forms: Dual Lock fasteners come in a variety of forms: Backed with Pressure Sensitive adhesive, Non-woven, Rigid backed, Die Cut Shapes, and low profile.
- Attachment Methods: The wide varieties of Dual Lock fasteners allow a design engineer flexibility to be able use and attach Dual Lock to just about any substrate or application. Peel and stick pressure sensitive adhesive backed is quick and easy yet strong and secure. Non-woven backed can be used with a variety of adhesive choices such as hot melt, liquid, epoxies, sealants, etc. We have parts that can be attached with a screw or rivet; rigid and plain backed for developing your own special device.

#### **General Information**

This product is half the thickness of standard 3M™ Dual Lock™ Reclosable Fasteners, providing a low profile attachment. An alternative to screws and bolts, this hidden fastener provides a snug fit and smooth aesthetic appearance.

#### **Technical Information Note**

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

## Typical Physical Properties

Attribute Name	Test Condition	Value
Color		Clear
Adhesive Type		High Temperature Acrylic
Material		Polypropylene
Backing		Polypropylene
Weight (Without liner)		0.057 g/cm <sup>2</sup>
Thickness	Maximum unmated without liner	1.88 mm <sup>1</sup>
Engaged Thickness		3.00 mm <sup>1</sup>
Liner		Red, non-silicone liner
Thickness Tolerance		± 15 %

<sup>1</sup> Thickness depends upon the amount of compression load on the pieces.

## Typical Performance Characteristics

Attribute Name	Temperature	Substrate	Value
90° Peel Adhesion	23 °C	Flexible to Rigid	300 g/cm width <sup>1</sup>
Overlap Shear Strength		Rigid to Rigid	28 N/cm <sup>2</sup> <sup>2</sup>
T-Peel Adhesion		Flexible to Flexible	80 g/cm width <sup>1</sup>
Dynamic Tensile (Engage)		Rigid to Rigid	18.6 N/cm <sup>2</sup> <sup>1</sup>
Dynamic Tensile (Disengage)		Rigid to Rigid	28 N/cm <sup>2</sup> <sup>1</sup>
Cleavage Strength		Low Profile to Low Profile	7.1 N/cm <sup>3</sup>

<sup>1</sup> 304 mm/min (12 in/min)

<sup>2</sup> 25 x 25 mm (1 in x 1 in) overlap; engaged with firm pressure and disengaged, peeled or cleaved at the rate of 304 mm/min (12 in/min)

<sup>3</sup> Rigid backed from Rigid backed

### Static Shear

Temperature	Value
104 °C	10,000 min <sup>1</sup>
93 °C	10,000 min <sup>1</sup>

<sup>1</sup> Holds 155 g/cm<sup>2</sup> (2.2 lb/in<sup>2</sup>) for indicated Time and Temperature  
If no failure at 10,000 minutes, test is discontinued

### Static Tensile

Temperature	Value
93 °C	10,000 min <sup>1</sup>
104 °C	10,000 min <sup>1</sup>

<sup>1</sup> Holds 15.5 g/cm<sup>2</sup> (0.22 lb/in<sup>2</sup>) for indicated time and temperature

Attribute Name	Value
Long Term Temperature Resistance	104 °C <sup>1</sup>
Cycle Life	50 <sup>2</sup>

<sup>1</sup> Long Term (day, weeks)

<sup>2</sup> Cycle life is the number of cycles (openings and closings) that the fastener is subjected to while maintaining 50% or greater of the 2nd closure peel values. Initial peels are slightly higher

Attribute Name	Value
Note	Typical performance characteristics shown below were measured under controlled laboratory conditions of 72°F (22°C) and 50% Relative Humidity when adhered to 1/16 in. aluminum panels unless stated otherwise to obtain maximum reliability. The user should evaluate products in the actual application to ensure suitable performance for the intended use. (Long Term Static Load: Conditions such as temperature variations, engagement area, closure pressure and vibrations or side to side movement after engagement or exposure to prolonged periods of moisture or other environmental factors can affect the closure strength and long term static load performance. Fasteners may slip or creep in the direction of the static load forces when subjected to static loads at temperatures or weights greater than indicated. The user is responsible for designing the amount of fastening area based upon the specific conditions for the application. Four square inches of fastening area per pound of static load is suggested as a starting point for such evaluations. )

### **Typical Environmental Performance**

Temperature: 38 °C  
Environmental Condition: 100%RH

Attribute Name	Value
Static Shear	10,000 min <sup>1</sup>
Static Tensile	10,000 min <sup>2</sup>

<sup>1</sup> Holds 155 g/cm<sup>2</sup> (2.2 lb/in<sup>2</sup>) for indicated Time and Temperature  
If no failure at 10,000 minutes, test is discontinued

<sup>2</sup> Holds 15.5 g/cm<sup>2</sup> (0.22 lb/in<sup>2</sup>) for indicated time and temperature

### **Handling/Application Information**

#### **Application Examples**

Dual Lock low profile reclosable fasteners SJ4580 and SJ4580C can provide a firm adhesive bond to a wide variety of surfaces, including, but not limited to those listed below. Because product performance will depend on actual conditions within any specific application, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular material purpose and suitable for the user's method of application.

Plastics  
CARC Paint Alkyd Enamel Paint Acrylic ABS  
Glass Painted or Sealed Wood Polycarbonate Polystyrene  
Bare Metal Rigid Vinyl  
Not suggested for powder coated paints or low surface energy materials.

#### **Dual Lock low profile reclosable fastener SJ4580 has shown to be useful for:**

Automotive interiors Attaching accessories and equipment  
Watercraft and Marine applications Interior mutin bar attachment  
Attaching Exhibit and Display Graphics Outdoor sign attachment

## Application Techniques

The following information is intended to assist the designer considering the use of 3M™ Dual Lock™ Low Profile 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.

Dual Lock low profile reclosable fasteners SJ4580 and SJ4580C are typically attached to various surfaces using the supplied adhesive.

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

It is recommended to remove any surface contaminants using the method suited for the type and quantity of surface contaminants present. NOTE: Follow the manufacturer's precautions, and direction for use and government requirements. The liner is removed from Dual Lock low profile reclosable fastener SJ4580 or SJ4580C 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 time is recommended before applying a load or disengaging. Recommended time to achieve maximum bond strength is 72 hours (three days).

Heat (Press) Bonding: Because of the higher temperature rating of 3M™ Dual Lock Low Profile Reclosable Fastener SJ4580 or SJ4580C, adhesive attachment using press bonding to gain improved strength to fabrics and similar substrates is not suggested.

**Mechanical Attachment:**Mechanical attachment, such as staples, screws, etc. is not recommended due to the thin backing which may be damaged in application or use.

## Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

## Available Sizes - Detailed

	Standard Widths in. ± 1/16" (mm) ± 1.6	Roll Length Yards (Meters)
	3/4" (19.1 mm)	50 yds. (45.7 meters)
	1" (25.4 mm)	50 yds. (45.7 meters)
	2" (50.8 mm)	50 yds. (45.7 meters)
	6" (152.4 mm)	50 yds. (45.7 meters)
<b>Fabricated Forms<sup>b</sup></b>	See Below for Special Sizes	Cut Pieces

a) 3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4580 and SJ4580C are available on 3" core. Contact your 3M authorized distributor or 3M representative for details on special sizes.

b) 3M™ Reclosable Fasteners can be fabricated into many custom shapes and sizes to fit your product design and manufacturing process. Please contact your local 3M authorized converter or 3M representative for additional options, configurations and ordering information.

## Recognition/Certification

**MSDS:**3M has not prepared a MSDS for these products which are 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, these products should not present a health and safety hazard. However, use or processing of the products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

**TSCA:**These products are defined as an article under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

Mil Spec. MIL-F-21840: This Mil Spec. does not apply to 3M™ Dual Lock™ Low Profile Reclosable Fastener SJ4580, please refer to our line of Scotchmate Reclosable Fasteners.

CID A-A-55126A: This commercial item description does not apply to Dual Lock SJ4580 or SJ4580C.

**Automotive Specifications:**The product has been tested to the following specifications and results are available upon request.

General Motors GM2743M  
Ford WSB M15P35  
Chrysler PF 8543

## **Automotive Disclaimer**

### **Select Automotive Applications:**

This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

## **Information**

Precautionary Information: Refer to product label and Material Safety Data Sheet for health and safety information before using the product. For information, please contact your local 3M Office. You can click or scan QR code to see contact detail or visit [www.3M.com](http://www.3M.com) Important Information: 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 or application. All questions of liability relating to this product are governed by the terms of the sale subject, where applicable, to the prevailing law. Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

## **ISO Statement**

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

## **For Additional Information**

To request additional product information or to arrange for sales assistance, please contact your local 3M office.

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