



# Dual Lock™ Reclosable Fasteners

## SJ3758 (Type 250)

*Dual Lock Reclosable Fastener Black with very thick white acrylic adhesive*

### Product Information

December, 2007

#### Product Description

3M™ Dual Lock™ Reclosable Fasteners are comprised of a continuous thick film backing with stems protruding from one side of the backing. The self supporting flexible stems have mushroom shaped heads. The base film, the stems and mushroom heads are manufactured from black polyolefin materials. One type, 3M™ Dual Lock™ Reclosable Fastener SJ3758 which is a type 250. The type refers to the approximate number of stems per square inch.

The thick conformable white acrylic adhesive allows for applications requiring joining two pieces with large gaps between the surfaces. Additionally this adhesive conforms easier to textured surfaces. The acrylic adhesive is well suited for applications exposed to high temperatures, humidity or for most metals and materials with high surface energy.

These Dual Lock reclosable fasteners can be engaged in the following combinations of increasing strength: Dual Lock reclosable fasteners type 170 to type 250, type 170 to type 400, type 250 to type 250 and type 250 to type 400. Currently only the type 250 is a standard item with the adhesive. Dual Lock reclosable fasteners can also engage with many loop materials, such as 3M™ Scotchmate™ Reclosable Fasteners. This combination allows a quick grab closure with high strength, but reduced cycle life. See the technical bulletin, *3M™ Dual Lock™ and Scotchmate™ Reclosable Fastener Combinations* (70-0709-3929-6).

When two pieces of Dual Lock reclosable fasteners are pressed together, the stems flex and the mushroom heads slide past each other. After passing the mushroom heads on the opposing mating piece, the stems snap back into their original position, interlocking with the mushroom heads on the opposing piece. The audible SNAP indicates engagement has occurred. This provides a strong reclosable attachment system. These Dual Lock reclosable fasteners can provide high tensile strength but the Dual Lock reclosable fasteners can easily be opened by simply cleaving or peeling open the closure.

Dual Lock reclosable fasteners can reduce the number of, or replace, conventional fasteners such as screws, clips, rivets, snaps and bolts in many applications. This product construction is especially suited for outdoor applications, where elevated temperatures, the potential for direct exposure to sunlight or ultra-violet light may occur, presence of high moisture levels may occur.

#### Product Construction

**Note:** The following information is not product release requirements, nor product specifications. Rather this data represents typical performance using standard test methods. This is intended for use as a guide to assist in selection of 3M™ Reclosable Fasteners for further evaluation. Customer specifications should not be based solely on the data presented in this document. It is recommended that the customer test the product under expected use conditions in the desired application to determine actual suitability and performance.

Fastener Products	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)
<b>Material of Construction</b>	
Stems/Heads	Black Polypropylene
Backing	Black Polypropylene
Adhesive	White Acrylic Adhesive
<b>Standard Color</b>	Black
<b>Thickness<sup>(a)</sup> Unmated ± 15%</b>	0.23" (5.7 mm)
<b>Selvage Edges</b>	None
<b>Weight<sup>(a)</sup></b>	0.055 oz/in <sup>2</sup> (0.243 g/cm <sup>2</sup> )
<b>Liner</b>	Clear 4 mil (0.10 mm) thick silicone treated polyolefin liner printed with 3M Dual Lock in red.

a) All thickness and weight values are with the liner removed.

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## Typical System Performance Characteristics

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Unless stated differently, typical system performance characteristics were measured under controlled laboratory conditions of 72°F (22°C) and 50% relative humidity when attached to 1/8" thick non-anodized aluminum panels. It is recommended that the customer test the product under expected use conditions to determine actual suitability and performance.

Typical System Performance <sup>(a)</sup>				
	3M™ Dual Lock™ Reclosable Fastener SJ3752 (Type 170)	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)
	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)	3M™ Dual Lock™ Reclosable Fastener SJ3751 (Type 400)	3M™ Scotchmate™ Reclosable Fastener Loop SJ3571 <sup>(b)</sup>
<b>INITIAL TENSILE (Rigid to Rigid Substrates)</b>				
Dynamic Tensile Engagement Force	16 (11)	Pounds <sub>F</sub> /sq inch (Newtons/cm <sup>2</sup> ) @ 72°F (22°C)/50% RH		
Dynamic Tensile Disengagement Force <sup>(c)</sup>	38 (26)	25 (17)	48 (32)	<1.0 (0.7)
Static Tensile Holding Strength		52 (36)	76 (52)	42 (29)
100°F/100% RH	10,000	Minutes holding 2.2 #/in <sup>2</sup> (155 grams/cm <sup>2</sup> ) for indicated time and temperature		
158°F	10,000	10,000	10,000	10,000
200°F	7,000	9,000	10,000	10,000
220°F	10,000	4,500	10,000	10,000
<b>INITIAL SHEAR (Rigid to Rigid Substrates)</b>				
Dynamic Shear (1" x 1" overlap) <sup>(c)</sup>	24 (17)	Pounds <sub>F</sub> /sq inch (Newtons/cm <sup>2</sup> )		
Static Shear Holding Strength		18 (12)	71 (49)	89 (61)
100°F/100% RH	7,500	Minutes holding 2.2 #/in <sup>2</sup> (155 grams/cm <sup>2</sup> ) for indicated time and temperature		
158°F	10,000	3,000	3,500	7,500
220°F	400	4,000	4,800	10,000
220°F	200	100	200	800
		30	100	100
<b>INITIAL DYNAMIC PEEL AND CLEAVAGE<sup>(c)</sup></b>				
Cleavage Strength (Rigid to Rigid)	9.4 (1.7)	Pounds <sub>F</sub> /inch width (Kilograms/cm width)		
"T" Peel Force (Flexible to Flexible: Peel Initiation)	1.2 (0.21)	14 (2.4)	27 (4.8)	16 (2.9)
"T" Peel Force (Flexible to Flexible: Continue Peel)	0.61 (0.11)	3.4 (0.59)	6.0 (1.1)	5.2 (0.91)
90° Peel Force (Flexible to Rigid): Peel Initiation	2.7 (0.47)	1.3 (0.23)	2.0 (0.36)	2.1 (0.37)
90° Peel Force (Flexible to Rigid): Continue Peel	1.3 (0.23)	5.3 (0.93)	12 (2.2)	11 (1.9)
		2.9 (0.52)	5.1 (0.89)	5.3 (0.93)
<b>ENGAGED THICKNESS<sup>(d)</sup></b>				
Nominal without liner: inches (mm)	0.31 (8.0)	0.40 (10.2)		
<b>CLOSURE CYCLE LIFE<sup>(e)</sup></b>	1,000	1,000		
<b>SHELF LIFE</b>	24 months from date of manufacture when stored in original packaging between 60° to 80°F (16° to 27°C) and 40 to 60% relative humidity.			

**Note: Long Term Static Load:** Conditions such as engagement area, supported weight, forces on the closure, vibrations or side to side movement, as well as prolonged periods of exposure to environmental factors such as temperature, ultraviolet light or humidity plus other factors beyond the control of 3M can affect the closure strength and long term performance. Dual Lock re closable fasteners may slip or creep in the direction of the applied forces when subjected to loads at temperatures, times, force or weights greater than indicated. The user is responsible for designing the amount of fastening area based upon the expected use conditions for the intended application. Four square inches of fastening area per pound (57.3 sq. cm./kilogram) of static load is suggested as a starting point for such evaluations.

a) Dual Lock reclosable fastener SJ3758 in widths less than 0.75" should not be engaged with other type 250 Dual Lock reclosable fasteners with widths less than 0.75". Doing so may create a closure with low disengagement strength.

- a) Scotchmate reclosable fastener loop engaged to Dual Lock reclosable fastener may provide increased closure strength over standard Dual Lock to Dual Lock reclosable fastener combinations. Due to this increased strength, extra care should be given to ensure the maximum bond strength obtained to the substrates being joined. Failure to obtain bond strengths to the substrate that are sufficiently high may cause the fastener to release from the substrate upon disengagement.
- b) Scotchmate reclosable fastener loop engaged to Dual Lock reclosable fastener may provide increased closure strength over standard Dual Lock to Dual Lock reclosable fastener combinations. Due to this increased strength, extra care should be given to ensure the maximum bond strength obtained to the substrates being joined. Failure to obtain bond strengths to the substrate that are sufficiently high may cause the fastener to release from the substrate upon disengagement.

c) Dual Lock reclosable fastener was engaged to Dual Lock reclosable fastener or Scotchmate reclosable fastener loop SJ3571 with firm pressure and disengaged at the rate of 12 inches (305 mm) per minute.

d) Engaged thickness is measured with a  $1/2''$  diameter pressure foot with a 34 gram weight and will decrease if a load is applied or increase if a separation (tensile) force is applied.

e) Cycle Life is the number of cycles (openings and closings) that the fastener is subjected to while maintaining 50% or greater of the original peel value.

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### Additional Performance Characteristics

**Note:** The following information is not product release requirements, nor product specifications. Rather this data represents typical performance using standard test methods. This is intended for use as a guide to assist in selection of 3M™ Reclosable Fasteners for further evaluation. Customer specifications should not be based solely on the data presented in this document. It is recommended that the customer test the product under expected use conditions in the desired application to determine actual suitability and performance.

**Resistance to Chemicals:** The polypropylene components and the acrylic adhesive on these products have not been tested but should resist contact with most common solvents, acid and alkaline solutions when exposed for short time periods.

**Resistance to Environmental Exposure:** Temperatures at -20°F (-29°C) increase the typical closure strength. System performance is reduced at temperatures above 158°F (70°C) and significantly above 220°F (105°C). These products perform well under long term exposure to sunlight or ultraviolet radiation. Specific testing under the expected environmental conditions is recommended.

**Resistance to Water or Humidity:** Closure strength should not be affected after prolonged exposure to water or humidity. Once bonded to the substrate, the adhesive has excellent resistance to moisture on most surfaces under typical use conditions. Exposure to elevated heat and chlorine or bromine may compromise the adhesive performance of the 3M™ Dual Lock™ Reclosable Fasteners.

**Volatile Outgassing:** Volatile outgassing, per ASTM E595, is one important test in determining the suitability of materials for spacecraft. Generally products with no adhesive or those with acrylic adhesives such as these have lower volatile outgassing values. 3M™ Dual Lock Reclosable Fasteners SJ3758, SJ3551CF and SJ3552CF have not been tested to ASTM E595. Products tested at the Goddard Space Flight Center can be found at the following web site:  
<http://outgassing.nasa.gov/>.

**Washing and Dry Cleaning:** The thick adhesive present on these Dual Lock reclosable fastener products typically makes them unsuitable for washing and dry cleaning processes. The adhesive may soften, leaving adhesive residues on other materials during the cleaning process. The mushroom topped stems may also be easily entangled with loop or fabric present, potentially damaging these materials when separated from the Dual Lock reclosable fastener.

These Dual Lock reclosable fastener products have not been tested for appearance or performance after exposure to the following conditions:

- **Gas or steam sterilization or autoclaving processes.**
- **Resistance to plasticizers or low molecular weight additives.**
- **Common fungus growth tests (ASTM G21 or MIL Std 810F Method 508.5).**
- **Static discharge during application, use or removal.**
- **Flammability Resistance** to common flammability tests such as FMVSS-302, FAR 25.853, ASTM E162, ASTM E662 or UL94.

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Available Sizes	Standard Widths <sup>(a)</sup> in. ± 1/16" (mm) ± 1.6	Roll Length Yards (Meters)	3M™ Dual Lock™ Reclosable Fastener SJ3758 (Type 250)
	1" (25.4 mm)	36 yds. (32.9 m)	✓
<b>Fabricated Forms<sup>(c)</sup></b>		Cut Pieces	

- a) 3M™ Dual Lock™ Reclosable Fastener SJ3758 products are available on 3" ID fiber core. All of these products are supplied with the liner to the edge of the adhesive. There are no extended liners or selvage edges with any of the standard products listed above. Contact your 3M authorized distributor or 3M representative for details on supplying special sizes or configurations.
- b) It is not recommended to mate Dual Lock reclosable fastener SJ3758 with any Type 250 3M™ Dual Lock Reclosable Fastener products for widths less than 0.75". If narrow widths are required, it is suggested that any of the following combinations be evaluated: Dual Lock reclosable fastener SJ3758 engaged to a type 170 or a type 400 Dual Lock reclosable fastener, or a type 170 engaged with a type 400 Dual Lock reclosable fastener.
- c) Dual Lock reclosable fasteners can be fabricated in many custom shapes and sizes to fit your product design and manufacturing process. Contact your local 3M authorized converter or 3M representative for additional options, configurations and ordering information.

### Design Considerations

The following information is intended to assist the designer considering the use of 3M™ Dual Lock™ Reclosable Fasteners with a pre-applied pressure sensitive adhesive. Product performance depends upon a number of factors, including the fastener selected, the conditions in which the Dual Lock reclosable fastener is applied, the time and environment 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 substrates, method of application or desired end use.

Many factors can affect the application, engagement and use of Dual Lock reclosable fasteners. Before applying, engaging or using the Dual Lock reclosable fasteners, the customer should consult the technical bulletin, *3M™ Dual Lock™ Reclosable Fasteners - Roll Goods Design Criteria* (70-0709-4009-6).

### Surface Preparation

The amount and type of surface preparation required will depend upon the surfaces to which Dual Lock reclosable fastener SJ3758 is attached and the expected product use exposure conditions. Refer to the technical bulletin below for surface preparation requirements when using pressure sensitive adhesives.

### Attachment Techniques

The most common technique for attaching Dual Lock reclosable fastener SJ3758 is direct attachment using its pre-applied pressure sensitive adhesive. Complete details to consider before attaching these products using this method are found in the technical bulletin, *3M™ Dual Lock™ Reclosable Fasteners – Attachment using Pressure Sensitive Adhesives or Heat Bonding* (70-0709-4006-2).

# 3M™ Dual Lock™ Reclosable Fasteners

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**Application  
Ideas**

3M™ Dual Lock™ Reclosable Fastener SJ3758 can replace conventional mechanical fasteners in a wide range of assembly and attachment applications where reclosability is desired. They provide a thick, conformable adhesive for joining two materials with a large gap between the surfaces. Dual lock reclosable fastener SJ3758 bonds 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.

**Metals**

Aluminum      Steel  
Not suitable for powder coated paints.

**Plastics**

Acrylic      Rigid Vinyl  
Polycarbonate      Polystyrene  
Not suitable for low surface energy plastics  
such as polyethylene or polypropylene.

**Miscellaneous Materials**

Glass      Sealed Wood  
Gel Coated Finishes

Dual Lock reclosable fastener SJ3758 can be evaluated in some of the following applications:

- |                        |                                       |
|------------------------|---------------------------------------|
| Removable equipment    | Vibration and sound dampening control |
| Equipment access doors | Attachment of computer accessories    |

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### Certification/ Recognition

**MSDS:** 3M has not prepared an 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 or 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 or safety hazards.

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

**Automotive Standards:** This product has been tested to and have passed the following automotive specification – Ford WSB-MI5P35 Type III.

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### 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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### Warranty and Limited Remedy

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### Limitation of Liability

Except where prohibited by law, 3M and seller will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

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ISO 9001:2000 - ISO/TS 16949:2002

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This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 and ISO/TS 16949:2002 standards.



#### Industrial Adhesives and Tapes Division

3M Center, Building 21-1W-10, 900 Bush Avenue  
St. Paul, MN 55144-1000  
800-362-3550 • 877-369-2923 (fax)  
www.3M.com/industrial



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