



# Reclosable Fastener SJ3000

## Thin Hook and Loop Back-to-Back

Product Information

September, 2010

### Product Description

3M™ Reclosable Fastener SJ3000 is a thin back-to-back fastener that offers closure alternatives to plastic wire, tape, string, rubber bands and other types of closure systems used to secure bundles of items. Reclosable Fastener SJ3000 offers design flexibility, fast product assembly and improved product performance in many applications.

One side of the thin fastener strip is covered with tiny translucent polypropylene hooks, approximately 1400 per square inch (220/sq. cm.). These hooks can engage with thousands of soft, pliable, thin polyester loops on the reverse side providing for a limited number of openings and closings (cycles). The thin loop is designed to easily engage with reclosable fastener SJ3000 hook and possibly other small hooks. The hook may also engage with many other loop materials. This forms a quick fastening attachment system. Simply pull the strips apart to disengage.

### Product Construction

**Note:** The following information is not product release requirements, nor product specification limits. 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 Product                               |          | 3M™ Reclosable Fastener SJ3000                      |
|------------------------------------------------|----------|-----------------------------------------------------|
| Material of Construction                       | Hook     | Polypropylene                                       |
|                                                | Loop     | Polyester                                           |
|                                                | Adhesive | None                                                |
| Standard Colors                                |          | Red, Black, White                                   |
| Thickness - unmated<br>- engaged               |          | 0.027" (0.69 mm)<br>0.061" (1.55 mm)                |
| Weight oz/in <sup>2</sup> (g/cm <sup>2</sup> ) |          | 0.005 oz/in <sup>2</sup> (0.021 g/cm <sup>2</sup> ) |

Thickness was measured using a 0.5" diameter pressure foot supporting a 34 gram weight. Actual thickness will decrease when a load is applied or the product is compressed and will increase if a load is removed.

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## Typical Performance

### Properties and Characteristics

Unless stated, typical system performance characteristics were measured under controlled laboratory conditions of 72°F ± 5°F (22°C ± 2.7°C) and 50% ± 10% relative humidity. The user should evaluate products in the actual application to ensure suitable performance for the intended use.

| Fastener Product                                                                                                                                                                                | 3M™ Reclosable Fastener SJ3000                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance tests are determined by measuring the performance of the entire reclosable fastener when the hook on one side is engaged to the loop on the other side of the fastener.             |                                                                                                                                                |
| <b>CLOSURE SHEAR (Rigid to Rigid Substrates)</b>                                                                                                                                                | Pounds <sub>F</sub> /inch <sup>2</sup> (Newtons/cm <sup>2</sup> )                                                                              |
| Dynamic Shear (1/2" x 1" overlap)                                                                                                                                                               | 31 (21.6)                                                                                                                                      |
| Static Shear Holding Strength                                                                                                                                                                   | Holds 1.1#/in <sup>2</sup> (77.5 grams/cm <sup>2</sup> ) for indicated time and temperature                                                    |
| 100°F (38°C)/100% R.H.                                                                                                                                                                          | 10,000 minutes                                                                                                                                 |
| 120°F (49°C)                                                                                                                                                                                    | 10,000 minutes                                                                                                                                 |
| 158°F (70°C)                                                                                                                                                                                    | 10,000 minutes                                                                                                                                 |
| 200°F (93°C)                                                                                                                                                                                    | 10,000 minutes                                                                                                                                 |
| <b>PEEL at 12 inches (305mm) per minute</b>                                                                                                                                                     | Pounds <sub>F</sub> /inch width                                                                                                                |
| "T" Peel Force (Flexible to Flexible)                                                                                                                                                           | 2.2                                                                                                                                            |
| 90° Peel Force (Flexible to Rigid) - Average                                                                                                                                                    | 3.0                                                                                                                                            |
| <b>CLOSURE CYCLE LIFE</b>                                                                                                                                                                       | 15                                                                                                                                             |
| 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 |                                                                                                                                                |
| <b>SHELF LIFE</b>                                                                                                                                                                               | Twenty four months from date of manufacturing when stored in original packaging at 70°F ± 10°F (21°C ± 5.5°C) and 50% ± 10% relative humidity. |

**Note: 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, ultraviolet or other environmental factors can affect the closure strength and long term static load performance. Reclosable 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 (57.3 sq. cm/kilogram) of static load is suggested as a starting point for such evaluations.

### Additional Performance Characteristics

**Chemical Resistance:** The polypropylene hook and polyester loop resist incidental attack by most common solvents and alkaline solutions. Acid solutions may cause deterioration of the loop. Small amounts of oils, mold release agents would not be expected to cause performance issues when in contact with 3M™ Reclosable Fastener SJ3000, except for the possible difficulty in starting a wrap.

**Plasticizer Resistance:** The polypropylene hook and polyester loop should have good resistance to direct contact with most plasticized materials.

**Flammability Resistance:** Reclosable Fastener SJ3000 will not pass common flammability tests when tested unattached to an substrate. If you need reclosable fasteners to meet many of the standard flammability tests (such as FAR 25.853, FMVSS-302), you may want to consider using 3M™ Reclosable Fasteners SJ3418FR/19FR, SJ3518FR/19FR and SJ3486FR/87FR.

**Water (Humidity) Resistance:** Closure strength should be minimally affected by high humidity conditions.

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### Attachment Techniques

The following information is intended to assist the designer considering the use of 3M™ Reclosable Fastener SJ3000. It is recommended that the user evaluate 3M products to determine whether they are fit for a particular purpose and suitable for the user's materials, method of application and desired end use.

Reclosable fastener SJ3000 can easily be cut to desired dimensions and shapes per application need. The product is often used in rectangular strips 1/2" width by appropriate length required to wrap at least one and one half times around item(s) being bundled plus a 0.5 inch (1.3 cm) tab or flag. A common formula for determining desired length is:

$$(\text{Bundle or item circumference in inches}) \times (1.5) + 0.5 \text{ inch}$$

$$(\text{Bundle or item circumference in centimeters}) \times (1.5) + 1.3 \text{ cm}$$

While reclosable fastener SJ3000 is more flexible than many common bundling materials, care should be exercised in wrapping bundles that have very small diameters, lest flagging of the end will occur, possibly leading to premature disengagement. To prevent premature or undesirable flagging a small quantity of a curable liquid adhesive, hot melt, epoxy or similar material could be applied joining the exposed end of the fastener with the underlying fastener. This method will make it more difficult to easily disengage the fasteners.

Rounding the corners can reduce the possibility of edge lifting or flagging while improving the overall appearance of the fastener on the finished product. Mechanically securing the corners of the fastener with rivets, staples, screws, etc. may reduce the closure performance.

**Material Surface Preparation:** Textured or rough surfaces, especially those that may engage with a hook or loop can allow easier starting of a wrap around an object(s). Very smooth surfaces may cause slippage or difficulty in starting the wrap. In that case the surface could be roughened, or small strips of 3M™ Reclosable Fasteners SJ3506 or SJ3507 could be first applied to the surface.

Surfaces containing oils, mold release agents or other coatings and materials that can create a slippery surface should be avoided due to possible difficulty in getting the wrap started, or slipping in usage. It is recommended to remove any surface contaminants that may cause slippage or problems with starting the wrap by using a method suited for the type and quantity of surface slip agent present.

**Engagement Procedure:** Highly porous, soft or fragile materials such as some vegetables or foam materials may crush or collapse if too high of a pressure is applied during bundle wrapping. Approximately 2 pounds per inch width (0.4 kilograms per centimeter width) is required for engaging reclosable fastener SJ3000 to itself. For all applications, it is important to ensure that an acceptable amount of overlap at the end of the fastener is provided to prevent premature unwrapping or flagging.

The most common technique for attaching reclosable fastener SJ3000 is to wrap the product upon itself, forming the closure system to bundle items together, provide surface protection or to secure items during transport. To ensure full fastener strength the fastener should be completely overlapped, not spiral would unless the reduced engaged surface area is taken into account.

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## Application Ideas

3M™ Reclosable Fastener SJ3000 can provide a firm closure system used to secure bundles of items or hold items in packaging during shipping or storage. Additionally, this product, in combination with 3M™ Reclosable Fasteners SJ3506 or SJ3507 could be used as a removable roll wrap for starting pull through of textile and similar materials. Wrapping a variety of surfaces can provide a removable protection. 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.

### Reclosable Fastener SJ3000 can be evaluated for use in:

Securing wire bundles

- During assembly, inspection, repair
- Abrasion protection (loop against wires)

Labeling garden plants/temporary identification

- Write-on loop for weather resistant label

Box Closures

Securing light-weight items in shipping containers

## Certification/ Recognition

**MSDS:** This product 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) and therefore 3M has not prepared a MSDS for this product. 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.

## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

## Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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