Reclosable Fasteners

Replaces conventional fastening methods to add greater convenience and easier accessibility, while saving steps and costs in the production process. Fast, easy open-and close action makes these products ideal for dozens of applications where hooks, latches, snaps, zippers, dials, screws, bolts and other fastening methods once prevailed.

Application
- Used in electronics, transportation, military, recreational equipment, safety equipment, marine, sporting goods and manufacturing industries.

<table>
<thead>
<tr>
<th>Waytek Stock No.</th>
<th>Type</th>
<th>Material</th>
<th>Color</th>
<th>Size</th>
<th>engaged thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hook-and-Loop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Rolls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92000</td>
<td>Hook</td>
<td>PSA Nylon hook</td>
<td>Black</td>
<td>1&quot; x 50 yd roll</td>
<td>.15 in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>with rubber adhesive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92001</td>
<td>Loop</td>
<td></td>
<td>Black</td>
<td>1&quot; x 50 yd roll</td>
<td>.15 in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PSA rubber adhesive backed with nylon hook and loop fastener</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mini-Packs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92004</td>
<td>Hook &amp; loop</td>
<td>PSA rubber adhesive backed with nylon hook and loop fastener</td>
<td>Black</td>
<td>1&quot; x 4.9 yd roll</td>
<td>.15 in</td>
</tr>
<tr>
<td>92005</td>
<td>Hook &amp; loop</td>
<td>PSA rubber adhesive backed with nylon hook and loop fastener</td>
<td>White</td>
<td>1&quot; x 4.9 yd roll</td>
<td>.15 in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waytek Stock No.</th>
<th>Stems per inch</th>
<th>Color</th>
<th>Size</th>
<th>engaged thickness</th>
<th>Maximum Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reclosable Fastener</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Rolls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92002</td>
<td>170</td>
<td>Black</td>
<td>1&quot; x 50 yd roll</td>
<td>.23 in</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>92003</td>
<td>400</td>
<td>Black</td>
<td>1&quot; x 50 yd roll</td>
<td>.23 in</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>Mini-Packs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92006</td>
<td>170 &amp; 400</td>
<td>Black</td>
<td>1&quot; x 4.9 yd roll</td>
<td>.23 in</td>
<td>-20°F (-29°C) to 120°F (49°C)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waytek Stock No.</th>
<th>Stems per inch</th>
<th>Color</th>
<th>Size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Adhesive DualLock Rounds</td>
<td></td>
<td></td>
<td></td>
<td>13/16&quot; diameter</td>
</tr>
</tbody>
</table>

Features
- Save production costs
- Pressure sensitive woven strips with general purpose adhesive backing
- Stiff hook strip presses together with pliable loop strip
- For high-strength fastening, Stock No. 92001 can mate with Dual Lock Stock No. 92002

Features
- Stem/head backing: Polypropylene
- Adhesive: Synthetic Rubber or Polyethylene Foam
- Saves production costs
- Can mate to itself
- 5 times more holding power than hook & loop
- For indoor use

UNCONTROLLED DOCUMENT
All information is provided by manufacturer.
Updated 7/21/2010
Hook & Loop Attachment Techniques

The following information is intended to assist the designer considering the use of adhesively coated 3M™ Scotchmate™ Reclosable Fasteners. System product performance depends upon a number of factors, including the fastener (material, adhesive and area), application method, adherend surface characteristics (material, texture and cleanliness), environmental conditions (moisture, ultraviolet and temperature exposure) plus the time it is expected to support a given load. Because many of these factors are uniquely within the user’s knowledge and control, it is required that the user evaluate 3M products to determine whether they are fit for a particular purpose and suitable for the user’s substrates, method of application and desired end use.

**Design Considerations:** 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. Rounding the corners, slightly recessing the product into the substrate or providing raised edges around the reclosable fastener can reduce the possibility of edge lifting and improve the overall appearance of the fastener on the finished product. Mechanically securing the corners of the fastener with rivets, staples, screws, etc. may also reduce the possibility of edge lifting, but may reduce the closure performance.

1) **Pressure Sensitive Adhesive attachment:** The use of pressure sensitive adhesives eliminates or reduces the need for sewing, solvent activation, dielectric or ultrasonic bonding or bulk adhesive bonding. This can result in simplicity, improved safety and lower installation costs. Pressure sensitive adhesive products can be applied manually or automatically using a variety of equipment choices.

**Attachment Procedure:** To obtain an optimum bond to any surface, both the fasteners and the target surfaces should have equilibrated for a minimum of 1 hour at temperatures between 68°F (20°C) to 100°F (38°C) before application. The liner protecting the adhesive is removed and preferably without touching the adhesive, the fastener is applied to the adherend to obtain initial contact between the adhesive and adherend. Exposure of the adhesive to ambient conditions without the protective liner, before applying to the surface, should be minimized as initial adhesive tack may decrease. Flexible adherends should be lying on a hard flat surface so as to permit uniform adhesive contact with the surface. Use of a rubber hand roller, press platen or similar device is recommended to ensure full adhesive contact with the adherend surface. Approximately 4.5 pounds of force per square inch, (310 grams per square centimeter) is recommended to increase adhesive contact, improving bond strength. For all adhesive applications, it is important to ensure that the edges are rolled down to reduce the chance of edge lifting.

**Dwell Time before Handling or Applying a Load:** Parts with properly chosen and applied pressure sensitive adhesive reclosable fasteners can be handled immediately. As the adhesive further wets-out the adherend surface, adhesive bond strength increases after application with time, pressure and/or temperature. Once attached to the adherend, a 1-hour minimum dwell time is recommended before applying a load or disengaging mated Scotchmate reclosable fastener pieces. This dwell time is important for achieving a firm adhesive bond before applying a load or using. The adhesive on 3M™ Scotchmate™ Reclosable Fasteners of products achieves approximately 50% of the ultimate bond strength within 20 minutes, 90% after 1 hour and the ultimate bond strength of properly applied fasteners is obtained within 24 hours at 72°F (22°C) and 50% relative humidity. Primers or adhesion promoters may reduce the time required to achieve the ultimate bond strength.

2) **Heat (Press) Bonding:** Scotchmate reclosable fasteners can be attached to many fabric and foam articles by a process called heat or press bonding. The fastener is initially adhered to the article using finger pressure. The fastener is held in place with the pre-applied adhesive and bond strength is increased by applying heat and pressure through the adherend to the adhesive side of the fastener at previously determined pressure, times and heating periods. For properly chosen press bonding conditions, the product can be used immediately after cooling, usually a matter of minutes. Once applied these fasteners should not be washed or dry cleaned. Product performance will depend upon the nature of the fabric or foam as well as other conditions within any specific application. For this reason it is essential that the user evaluated the 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 to 425°F (121 to 218°C)
Bonding Pressure: 30 to 100 psi (207 to 690 kPa)
Bonding Time: 3 to 30 seconds
3) Mechanical Attachment: Scotchmate reclosable fasteners may also be mechanically attached to difficult to adhere to surfaces such as textured plastics and wood by using staples, screws, rivets and similar methods. The head of the mechanical fastener should be flat and large enough to resist pull through when the fastener is disengaged. The head of the fastener should also be recessed as much as possible below the surface of the hook or loop to prevent interference with (dis) engagement properties. The use of resin coated chisel divergent staples appear to provide excellent attachment to thick sections of soft and hardwood surfaces.

Adherend Surface Preparation: Highly textured adherend surfaces may reduce the ultimate adhesion levels and care should be given to minimize the surface texture or roughness. Adhesive backed Scotchmate reclosable fasteners should be applied to surfaces that are clean, dry and free of oil, grease, dust, mold release agents or surface contaminants that could reduce the adhesion. It is recommended to remove any surface contaminants that may reduce adhesion by using a method suited for the type and quantity of surface contaminants present.

Note: It is important for the customer to follow all manufacturer’s precautions and directions for use as well as any specific government regulations or customer and supplier requirements for the method(s) used to remove any contamination on the surface of the adherend or preparing the surface for attaching the fastener(s). In exceptional cases, especially when removing silicone mold release agents or on rough, porous surfaces, it may be necessary to lightly abrade the surface, use an adhesion promoter, or surface sealer to optimize the adhesive bond to the adherend. The selection of abrasion, priming or sealing methods will depend upon the adherends and the environmental conditions the product will be exposed to during use.

Application Ideas Reclosable Fasteners 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 product to determine whether it is fit for a particular material purpose and suitable for the user’s method of application.

Plastics
- Acrylic
- ABS
- Polycarbonate
- Polystyrene
- Polypropylene
- Rigid Vinyl
- Polyethylene
- Paper and cardboard
- Glass
- CARC Paint
- Fabrics
- Powder Paint
- Sealed Wood
- Bare and painted Metal
- Fiberglass

92004 is not recommended for attaching to flexible vinyl or plasticized substrates. Products has shown to be useful for:
- Anti-scratch surface
- Attaching accessories and equipment
- Vibration and sound dampening control
- Attaching Exhibit and Display Graphics
Attachment Techniques
The following information is intended to assist the designer considering the use of 3M™ Dual Lock™ Reclosable Fasteners. Final product performance depends on actual conditions, including the 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 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.

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. 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. The substrate surface should be cleaned to remove any surface contaminants with an appropriate cleaning method for the customer’s substrate, type and quantity of surface contaminants that need to be removed. Note: Be sure to follow all government regulations and the manufacturer’s precautions and directions for use when using solvents or other cleaning methods. After the substrate has been cleaned and dried, the liner is removed from the fastener’s adhesive and without touching the adhesive, the fastener’s adhesive is applied to the surface using light finger pressure. The fastener can then be rolled down, to increase contact of the adhesive with the substrate’s surface, by one of two methods. Extra care must be exercised when rolling down the product to prevent bending of the stems which can compromise the closure strength. The following methods allow adequate pressure to be applied to the Dual Lock without damaging the stems.

The first method uses a hand roller with the roller wheel covered 92002. The Dual Lock covered roller is rolled over the Dual Lock applied to the substrate, engaging and disengaging the two Dual Lock pieces while being rolled down.

These products 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
Paper Cardboard
Acrylic
Rigid Vinyl
Glass
Sealed Wood
Polycarbonate
Polystyrene
Fabrics
Bare and Painted Metal
Polyethylene
Polypropylene
Powder Coated Paints

Dual Lock products have shown to be useful for:
- Access panels on exercise equipment
- Attaching accessories to computer monitors
- Interior signage
- Decorative trim attachment
- Kick plates on office partitions
- Window valences