



Dual Lock™ Reclosable Fasteners Trial Bags

TB3540 (250/250), TB3541/TB3542 (400/170)

TB3550 (250/250), TB3551/TB3552 (400/170)

TB3560 (250/250), TB3561/TB3562 (400/170)

TB3870 (250/250), TB3871/TB3872 (400/170)

TB4570, TB4575

Technical Data

June, 2010

Product Description

3M™ Dual Lock™ Reclosable Fasteners are positive locking, hidden fasteners designed for use in a variety of attachment solutions. They consist of continuous strips of polyolefin stems with a mushroom shaped top protruding up from the backing. When snapped together the mushroom shaped caps interlock producing a strong reliable fastener.

There are three different stem densities of these fasteners (170, 250 and 400) that refer to the approximate number of stems per square inch. By inter-locking different stem density combinations you can create the strength that suits your application--more total stems produces higher strength.

The Dual Lock reclosable fasteners can be mated in the following combinations of increasing closure strength: Type 170 to Type 250, Type 170 to Type 400, Type 250 to Type 250 and Type 250 to Type 400. We do not recommend using the type 170 to 170 because it does not have good strength. We do not recommend using the type 400 to 400 because it is too strong and may cause stems and heads to rip out when prying apart--rendering the fastener no longer reclosable.

There are a variety of pressure sensitive adhesives available with Dual Lock reclosable fasteners to cover most application needs. The pressure sensitive adhesive makes the Dual Lock reclosable fasteners easy to use. Simply remove the liner, place the Dual Lock reclosable fasteners, and apply firm, consistent pressure to assure good contact with the substrate you are adhering.

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Product Construction

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

| Adhesive Type | Product Number | 3M™ Dual Lock™ Reclosable Fastener Trial Bag Description | Dual Lock Color Adhesive Color | Engaged Thickness inches | Thickness Unmated Inches ± 15% | Liner Type Thickness | Full Roll Product Number |
|----------------------------------|----------------|--|--------------------------------|--------------------------|--------------------------------|---|------------------------------|
| Rubber Based Adhesive | TB3540 | 250/250, 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Black/Black | 0.23 | 0.14 | 5 mil White silicone treated Polyolefin | SJ3540 |
| | TB3541/TB3542 | 400/170, 1 in. (25.4mm) x 10 ft. (3.05m), 1 strip of each, pre-mated per bag | | | | | SJ3541 (400) SJ3442 (170) |
| General Purpose Acrylic Adhesive | TB3550 | 250/250, 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Black/White | 0.23 | 0.14 | 4 mil Clear silicone treated Polyolefin with Red Printing | SJ3550 |
| | TB3551/TB3552 | 400/170, 1 in. (25.4mm) x 10 ft. (3.05m), 1 strip of each, pre-mated per bag | | | | | SJ3551 (400) SJ3552 (170) |
| Clear Acrylic Adhesive | TB3560 | 250/250, 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Clear/Clear | 0.23 | 0.14 | 4 mil Clear silicone treated Polyolefin with Red Printing | SJ3560 |
| | TB3561/TB3562 | 400/170, 1 in. (25.4mm) x 10 ft. (3.05m), 1 strip of each, pre-mated per bag | | | | | SJ3561 (400) SJ3562 (170) |
| Modified Acrylic Adhesive | TB3870 | 250/250, 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Black/Grey | 0.24 | 0.14 | 5 mil Red silicone treated Polyolefin | SJ3870 |
| | TB3871/TB3872 | 400/170, 1 in. (25.4mm) x 10 ft. (3.05m), 1 strip of each, pre-mated per bag | | | | | SJ3871 (400) SJ3872 (170) |
| Low Surface | TB4570 Clear | 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Clear/Clear | 0.098 | 0.065 | 6.5 mil 86# silicone treated Polycoated Kraft | SJ4570 |
| | TB4575 Black | 1 in. (25.4mm) x 10 ft. (3.05m), 1 mated strip per bag | Black/Clear | | | | SJ4575 |

*All thickness values are with the liner removed.

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System Performance

Note: The following technical information and data is intended as a guideline to assist customers in selecting 3M™ Reclosable Fasteners for further evaluation. This technical information is not product release specifications or standards. Unless stated differently, the typical system performance and product properties were obtained using specific test methods under controlled laboratory conditions of 72°F ± 5°F and 50% ± 10% relative humidity. The user is responsible for evaluating 3M reclosable fasteners under expected use conditions to ensure suitable performance for the intended application.

| Typical Test values for 3M™ Dual Lock™ | type 170 to 250 | type 170 to 400 | type 250 to 250 | type 250 to 400 | Low Profile to Low Profile |
|--|-----------------|-----------------|-----------------|-----------------|----------------------------|
| Dynamic Tensile LbsF/in ² (N/cm ²) Engage | 13 (9) | 21 (14.5) | 22 (15.2) | 31 (21.4) | 27 (18.5) |
| Disengage | 27 (18.5) | 43 (29.6) | 43 (29.6) | 60 (41.4) | 40 (27.5) |
| Dynamic Shear Lbs/in ² | 14 (9.8) | 21 (14.5) | 22 (15) | 59 (41.3) | 41 (28.2) |
| Cleavage Strength Lbs/inch width (N/cm width) Rigid backed from Rigid backed | 12 (21) | 20 (35) | 24 (42) | 32 (56) | 4 (7.1) |
| “T” Peel (Lbs/inch width (N/cm width) Flexible from flexible | 0.7 (1.2) | 1.4 (2.5) | 1.9 (3.3) | 1.5 (2.6) | 0.5 (.9) |
| 90° Peel lbs/inch width (N/cm width) Flexible from rigid | 1.8 (3.2) | 3.1 (5.4) | 4.1 (7.2) | 4.6 (8.1) | 1.7 (2.9) |
| Cycle life # of closures before losing 50% of original strength | 1000 | 1000 | 1000 | 1000 | 100 |

****Tests were run at 12 inches per minute****

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Product Performance

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

This guide should assist you in determining which product will adhere best to your substrate for your application.

| 3M™ Dual Lock™ Reclosable Fasteners Trial Bags | Poly-propylene (29) Low Surface Energy | Poly-ethylene (31) | Acrylic (38) Medium Surface Energy | PC (42) | ABS (42) | Aluminum (840) High Surface Energy | Stainless Steel (700-1100) | Temperature Resistance °F |
|---|---|--------------------|---------------------------------------|---------|----------|---------------------------------------|----------------------------|---------------------------|
| TB3560 TB3561/TB3562 Clear Acrylic Adhesive | | | X | X | X | X | X | 220 |
| TB3550 TB3551/TB3552 General Purpose Acrylic Adhesive | | | X | X | X | X | X | 200 |
| TB3870 TB3871/TB3872 Modified Acrylic Adhesive | | | X | X | X | X | X | 180 |
| TB4570 Clear TB4575 Black LSE Acrylic #1 | X | X | X | X | X | X | X | 158 |
| TB3540 TB3541/TB3542 Rubber Based Adhesive | X | X | X | X | X | X | X | 120 |
| X-substrates that will typically adhere to without the use of primer | | | | | | | | |

Design Considerations

As a general rule, four square inches of fastener area per pound of static tensile or shear 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. 3M™ Dual Lock™ Reclosable Fasteners Type 250 less than 0.75" (19 mm) width should not be engaged to other Dual Lock reclosable fastener type 250 because low disengagement values may occur.

Note

Final product performance depends upon a combination of factors: the substrate and its surface characteristics, the fastener selected, the application method and conditions, the time and environmental conditions required for the application. Because these factors are unique to each application, the user must evaluate the Dual Lock reclosable fastener and do any testing required to determine Dual Lock reclosable fasteners suitability for the end-user's application.

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Printed in U.S.A.
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