Technical data sheet

Product: SJ3541

Manufacturer: 3M DEUTSCHLAND GMBH

Product group: KLEBEBAND

Article group: DUAL LOCK

Download: 28.04.2024

3M™ DUAL LOCK™ SJ3541

This data sheet was provided to you by Tewipack Uhl GmbH. The company tewipack Uhl GmbH assumes no responsibility for the topicality and the Accuracy of the information contained. The properties of the products can vary due to various influences such as composition and condition of the Substrate, impurities in or on the substrate, temperature and humidity at the Change storage and environmental conditions during use. Using this product in combination with other material, the customer is responsible for to check through our own tests whether the product is suitable for the planned combination and whether this combination delivers the expected results

Tewipack Uhl GmbH
Industriestraße 15
D-75382 Althengstett

Telephone:
+49(0)7051/9297-0
Fax:
+49(0)7051/9297-99

E-Mail:
info@tewipack.de
Website:
www.tewipack.de

Managing director:
Alexander Uhl,
Michael Uhl
HRB 330424
Amtsgericht
Stuttgart

Bank details:
Sparkasse
Pforzheim
Calw
BLZ 666 500
85
Konto 17 787

Commerzbank
Sindelfingen
BLZ 603 400 71
Konto 8 001 166

Vereinigte
Volksbank AG
Böblingen
BLZ 603 900 00
Konto 80 089
003

Postbank
Stuttgart
BLZ 600 100
70
Konto 146
294 708

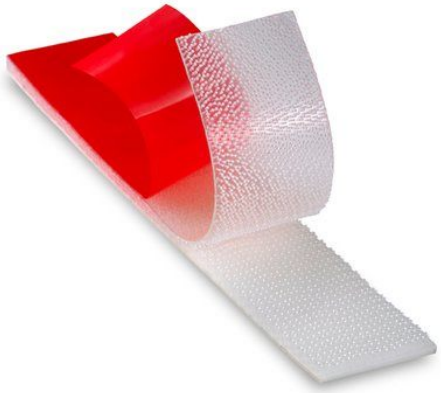
Science.
Applied to Life.™

ASK A 3M EXPERT

June, 2014

3M™ Dual Lock™ Reclosable Fastener SJ3541

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.
The standard Dual Lock fasteners are available in three different stem densities (170, 250 and 400) referring to the approximate number of stems per square inch. (26, 39, 62 stems per square centimeter) By inter-locking different stem density combinations you can create the strength that suits your application; more total stems give 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 enough strength for a good connection. We do not recommend using the Type 400 to 400 because it is too strong and may cause stems and heads to rip out rendering the fastener no longer reclosable.
The Dual Lock Low Profile has one stem density of approximately 705 stems per square inch and they interlock to themselves. The low profile products are not intended to mate to the standard size Dual Lock.
There are a variety of pressure sensitive adhesives available with Dual Lock to cover most application needs. The pressure sensitive adhesive makes the Dual Lock easy to use, simply remove the liner, place the Dual Lock and apply firm consistent pressure to assure good contact with the substrate you are adhering. We also offer non-adhesive backed Dual Lock for applications where the PSA does not meet your needs.

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.

3M™ Dual Lock™ Reclosable Fastener SJ3541

General Information

Pressure Senstive Adhesive backed product
Product Family: Rubber based PSA foam backing, general purpose and low surface energy attachment

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

Property	Values	
Dual Lock Color	Black	
Adhesive Color	Black	
Thickness	3.51 mm	138 mil
Engaged to itself or to one of the same family	5.74 mm	226 mil
Stems	62 Stems/cm²	400 Stems/in²
Liner Material	Silicone treated Polyolefin	
Liner Thickness	0.13 mm	5 mil
Liner Color	White	

Typical Performance Characteristics

Property	Values	
Temperature Resistance	60 °C	140 °F

Dynamic Tensile (Engage)		Substrate
9 N/cm²	13 lb/in²	Type 170 to 250
14.5 N/cm²	21 lb/in²	Type 170 to 400
15.2 N/cm²	22 lb/in²	Type 250 to 250
21.4 N/cm²	31 lb/in²	Type 250 to 400
18.5 N/cm²	27 lb/in²	Low Profile to Low Profile

Property: Dynamic Tensile (Engage)

Dynamic Tensile (Disengage)		Substrate
18.5 N/cm²	27 lb/in²	Type 170 to 250
29.6 N/cm²	43 lb/in²	Type 170 to 400
29.6 N/cm²	43 lb/in²	Type 250 to 250
41.4 N/cm²	60 lb/in²	Type 250 to 400

Property: Dynamic Tensile (Disengage)

Typical Performance Characteristics (continued)

Dynamic Shear		Substrate
9.8 N/cm²	14 lb/in²	Type 170 to 250
14.5 N/cm²	21 lb/in²	Type 170 to 400
15 N/cm²	22 lb/in²	Type 250 to 250
41.3 N/cm²	59 lb/in²	Type 250 to 400

Property: Dynamic Shear

Cleavage Strength		Substrate
21 N/cm width	12 lb/in width	Type 170 to 250
35 N/cm width	20 lb/in width	Type 170 to 400
42 N/cm width	24 lb/in width	Type 250 to 250
56 N/cm width	32 lb/in width	Type 250 to 400

Property: Cleavage Strength
notes: Rigid backed from Rigid backed

T-Peel Adhesion		Substrate
1.2 N/cm width	0.7 lb/in width	Type 170 to 250
2.5 N/cm width	1.4 lb/in width	Type 170 to 400
3.3 N/cm width	1.9 lb/in width	Type 250 to 250
2.6 N/cm width	1.5 lb/in width	Type 250 to 400

Property: T-Peel Adhesion
notes: Flexible from Flexible

90° Peel Adhesion		Substrate
3.2 N/cm width	1.8 lb/in width	Type 170 to 250
5.4 N/cm width	3.1 lb/in width	Type 170 to 400
8.1 N/cm width	4.1 lb/in width	Type 250 to 250
8.1 N/cm width	4.6 lb/in width	Type 250 to 400

Property: 90° Peel Adhesion
notes: Flexible from Rigid

Cycle Life	Substrate
1000	Type 170 to 250
1000	Type 170 to 400
1000	Type 250 to 250
1000	Type 250 to 400

Property: Cycle Life
notes: Number of closures before losing 50% of original strength

Typical Performance Characteristics (continued)

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.
These are typical values which were gathered from testing the PSA backed materials. Similar values can be expected when the Dual Lock is held securely in a rigid fashion.
Tests were run at 12 inches per minute

Product Performance:

Dual Lock Product Number	Low Surface Energy Materials Polyethylene, Polypropylene, etc., < 35 Dynes/cm^2	Medium Surface Energy Materials ABS, Polycarbonate, Acrylic, etc., 35-45 Dynes/cm^2	High Surface Energy Materials Aluminum, Steel, other metals, etc., > 45 Dynes/cm^2	Temperature Resistance °F (°C)
SJ3244				
SJ3245	X	X	X	120
SJ3246				
SJ3540				
SJ3541	X	X	X	140
SJ3542				
SJ3550				
SJ3551		X	X	200
SJ3552				
SJ3550CF				
SJ3551CF		X	X	220
SJ3552CF				
SJ3557				
SJ3558		X	X	200
SJ3559				
SJ3560				
SJ3561		X	X	220
SJ3562				
SJ3773	X	X	X	158
SJ3782				
SJ3870				
SJ3871	X	X	X	140
SJ3872				
SJ3962		X	X	180

Additional Information
notes: This guide should assist you in determining which product will adhere best to your substrate for.

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. Type 250 Dual Lock Reclosable fasteners less than 0.75" (19 mm) width should not be engaged to other type 250 Dual Lock Reclosable fastener as low disengagement values may occur.
• Whenever possible design one side of the Dual Lock reclosable fasteners to be larger than the mating side. This will allow for variability or mismatch in Dual lock alignment positions, and ensure 100% fastening area contact. Another approach would be to design two rectangular shaped fastener pieces so that they can be engaged in a cross web/perpendicular pattern (crossed).
• Dual Lock strength is proportional to the fastening contact area, and the number of stems in combination used. More stems and more Dual Lock used gives you more strength, less stems combined and using less Dual Lock will give you less strength.
• Dual Lock disengagement strength/performance is strongest in direct tensile. Peel/cleavage mode is where it is most easily removed.
• 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 Dual Lock and do any testing required to determine Dual Lock's suitability for the user's desired end use.

Storage and Shelf Life

To obtain best performance, use this product within 18 months from date of manufacture.

Family Group

	SJ3540	SJ3541	SJ3542
Thickness (mm)	3.51	3.51	3.51
Liner Material	Silicone treated Polyolefin	Silicone treated Polyolefin	Silicone treated Polyolefin
Liner Thickness (mm)	0.13	0.13	0.13
Liner Color	White	White	White

References

1. 3m.com Product Page
   Url: https://www.3m.com/3M/en_US/company-us/all-3m-products/~/3M-Dual-Lock-Reclosable-Fastener-SJ3541?N=5002385+3293242271&rt=rud
2. Safety Data Sheet
   Url: https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=SJ3541

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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.

Warranty, Limited Remedy, and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability

Except where prohibited by law, 3M 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.

Industrial Adhesives and Tapes Division
3M Center
St. Paul, MN 55144-1000
800-362-3550
www.3m.com

Please recycle.

© 3M 2018. All Rights Reserved.

The brands listed above are trademarks of 3M.