



Extreme Sealing Tape

4412N

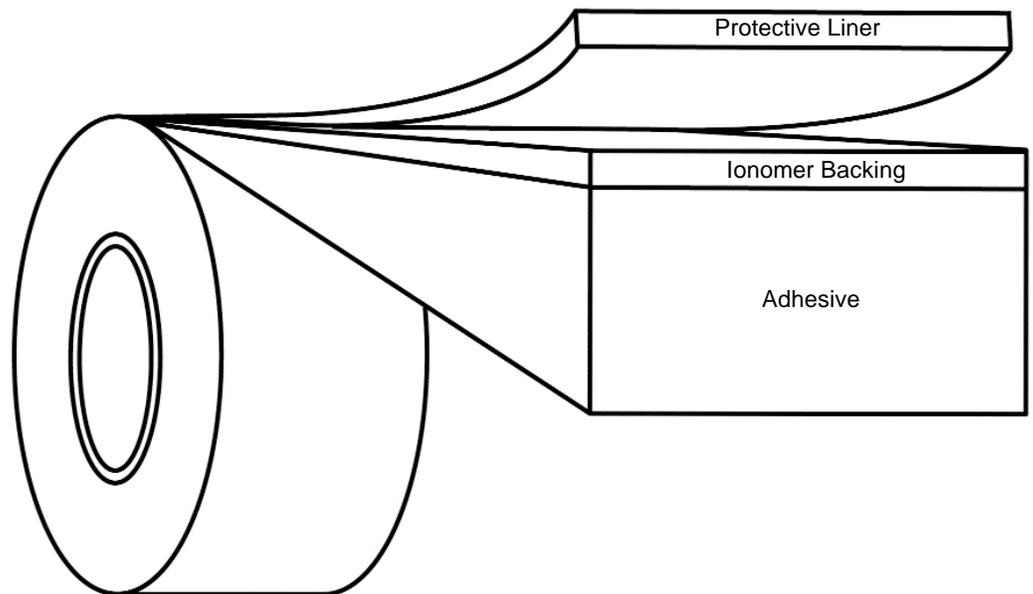
Technical Data

September, 2010

Product Description

3M™ Extreme Sealing Tape 4412N is a single coated, pressure sensitive adhesive tape designed for difficult sealing applications. The backing on this tape is an ionomer film that is very tough yet flexible and abrasion resistant. The very soft and thick acrylic adhesive has excellent sealing properties and good long term, outdoor durability. This single coated tape is designed to seal over an existing joint, seam, or penetration. The adhesive is designed to adhere well to the ionomer film so that overlap layers of this tape can be used and still provide a tight seam to itself and the joint or seam to be sealed.

Construction



Protective Release Liner:	3 mils thick (0.08 mm), matte finish, translucent, polyester film
Ionomer Backing:	4 mils thick (0.1 mm), acrylic and ethylene copolymer
Adhesive:	75 mils thick (1.9 mm), very conformable multi-purpose acrylic
Total Tape Thickness:	79 mils thick (2.0 mm) without disposable release liner

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Typical Physical Properties and Performance Characteristics

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

Tape Color:	Translucent white
Tape Density:	51 lb/ft ³ (0.82 g/cm ³)
Tape Tensile Strength: (ASTM D-3759 with D-412 dog bone die C)	13.4 lbs/in tape width (23.5 N/cm tape width)
Tape Elongation to Break: (ASTM D-3759 with D-412 dog bone die C)	380%
90 Degree Peel Adhesion: (ASTM D-3330; to aluminum with aluminum peel strip)	9.9 lb/in tape width (15.7 N/cm tape width)
Splice Break Strength: (1 in. x 2 in. tape over butt joined aluminum; 12 inches per minute)	10 lb/1 in. x 2 in. tape (17.5 N/25 mm x 100 mm tape)
Temperature Use Range:	-40°F to 200°F (-40°C to 93°C)
Max Temperature Tolerance: Short term (minutes, hours) Long term (days, weeks)	300°F (149°C) 200°F (93°C)
High Pressure Water Resistance:	Excellent
Moisture Resistance:	Excellent
Thermal Shock Resistance:	Excellent
U.V. Resistance:	See "3M™ Extreme Sealing Tape 4412N – Exterior Durability Report; September, 2010"

Available Sizes

Standard Widths:	1", 2", 2.5", 3", 4" (25 mm, 50 mm, 65 mm, 75 mm, 100 mm)
Standard Length:	18 yards (16.4 meters)
Core Inside Diameter:	3" (76.2 mm)
Slitting Tolerance:	± 1/32" (0.8 mm)
Thickness Tolerance:	± 0.008" (0.2 mm)

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Application Guidelines

Depending on the surfaces to be sealed, one of three basic surface preparations will be required:

- 1) Good cleaning with a 50:50 mixture of isopropyl alcohol* and water to remove contaminants;
- 2) Fine abrading with a 180x grit or finer abrasive followed by good cleaning with a 50:50 mixture of isopropyl alcohol* and water; or
- 3) Good cleaning with a 50:50 mixture of isopropyl alcohol* and water followed by application of an adhesion promoter or primer.

Ideal tape application is accomplished when temperature is between 70° and 100°F (21° and 38°C) and the bond is allowed to dwell 24 hours. Tape application to surfaces at temperatures below 50°F (10°C) is generally not recommended. Once properly applied, low temperature holding is generally satisfactory.

With the protective release liner still attached to the tape, apply tape by hand using light hand pressure. If applying the tape over a “step” or ridge, use a thin plastic tool to press the tape tightly into the corners of adjoining surfaces and around other irregularities. Using a soft roller, such as a medium nap paint roller, apply medium pressure to conform tape on contours, seam edges, rivets, or screw heads. Peel off the protective release liner. To optimize adherence and conformance to uneven surfaces, a final tape roll down should be done after the non-stretchy, release liner has been removed. As an extra measure of sealing insurance, a very small dab of 3M™ 4000UV Hybrid Adhesive Sealant Fast Cure should be used at the end of any cut length of 3M™ Extreme Sealing Tape 4412N where the tape is sealing over an irregular surface.

***Note:** Consult manufacturer’s directions for use and precautions when using cleaning solvents. This cleaning recommendation may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.

90 Degree Peel Adhesion Strength (lbs/in tape width)

	Surface Preparation			
	IPA:Water Clean	Fine Abrade	3M™ Adhesion Promoter 111	3M™ Tape Primer 94
Bare aluminum	9.9	13.7	20.2	–
Anodized aluminum	13.4	13.3	21.4	–
Bare steel	7.9	13.7	19.0	–
Galvanized steel	9.7	13.3	20.3	–
Stainless steel	11.8	14.4	20.5	–
White acrylic paint	5.1	12.1	13.5	–
Clear epoxy paint	7.7	12.4	20.5	–
Clear acrylic paint	10.0	14.8	21.1	–
Kynar paint	6.0	10.0	11.7	–
CARC paint	12.9	–	18.8	19.6
Fiberglass reinforced plastic	6.4	10.2	21.2	–
Bumpy FRP roofing	7.7	–	20.4	–
Gloss gelcoat FRP	7.4	13.6	15.9	19.4
ABS	2.4	10.7	12.2	20.4
Clear acrylic	4.0	7.8	3.7	20.8
Nylon 6/6	12.8	12.1	21.4	20.9
Clear polycarbonate	3.0	10.0	8.3	20.8
Polyester	6.3	–	22.3	22.3
Polypropylene	3.4	5.1	3.5	1.6
PP based composite roofing	5.0	6.5	10.9	21.3
Black PVC	9.3	10.7	14.1	21.2
Vinyl house siding	7.8	10.0	18.3	21.0
Flexible vinyl roofing	6.6	–	–	18.8
Rigid TPO roofing	5.4	–	–	17.1
Glass*	8.1	–	16.6*	–
4412N Ionomer film	14.2	–	21.2	–

*For long term durability on glass, use 3M™ Silane Glass Treatment AP115 instead of 3M™ Adhesion Promoter 111.

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Storage Store in original cartons at 40-100°F (4-38°C) and 0-95% relative humidity. Optimum storage conditions are 72°F (22°C) and 50% relative humidity.

Shelf Life When stored under proper conditions, product retains its performance and properties for 24 months from date of manufacture. The date of manufacture is listed as a run number beginning with the letter “K” and followed by a 5 digit Julian calendar code (YYDDD). The first two digits refer to the year of manufacture. The last three digits refer to the days after January 1. For example, run #K10273 would translate to a September 30, 2010 date of manufacture.

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