High Strength Double Coated Tape with Adhesive 300LSE

93010LE • 93015LE • 93020LE

Technical Data **January, 2011**

Product Description

3M ™ Double Coated Tapes with 3M™ Adhesive 300LSE provides high bond strength to most surfaces, including many low surface energy plastics such as polypropylene and powder coated paints. The acrylic adhesive also provides excellent adhesion to surfaces contaminated with oil typically used with machine parts.

Construction Information

Product Number	Faceside[1] Adhesive Type Thickness	Carrier Type Thickness	Backside[2] Adhesive Type Thickness	Liner Color, Type, Caliper[3]	Total Thickness (w/o liner)
3M™ Double Coated Tape 93010LE	300LSE 0.044 mm (1.7 mil)	Clear Polyester 0.012 mm (0.5 mil)	300LSE 0.044 mm (1.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)	0.10 mm (3.9 mil)
3M™ Double Coated Tape 93015LE	300LSE 0.069 mm (2.7 mil)	Clear Polyester 0.012 mm (0.5 mil)	300LSE 0.069 mm (2.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)	0.15 mm (5.9 mil)
3M™ Double Coated Tape 93020LE	300LSE 0.095 mm (3.7 mil)	Clear Polyester 0.012 mm (0.5 mil)	300LSE 0.095 mm (3.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)	0.20 mm (7.9 mil)

Note 1: Faceside (FS) adhesive is on the interior of the roll, exposed when unwound.

Note 2: Backside (BS) adhesive is on the exterior of the roll, exposed when liner is removed.

Note 3: The caliper listed is based on a calculation from manufacturing controlled adhesive coat weights using a density of 1.012 g/cc.

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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.

	3M™ Double Coated Tape		
Product Number	**93010LE**	**93015LE**	**93020LE**
Adhesive	300LSE	300LSE	300LSE
Tape Thickness	0.10 mm	0.15 mm	0.20 mm
Breakdown Voltage	5600 volts	6900 volts	7500 volts
Dielectric Strength	1400 volts/mil	1200 volts/mil	900 volts/mil
Adhesion 15 min dwell @ RT Modified ASTM D-3330 180 degree peel 2 mil Al foil backing	oz/in N/cm kg/25.4mm SS 85 9.3 2.4 PC 110 12.3 3.1 ABS 80 8.8 2.3 PP 95 10.4 2.7	oz/in N/cm kg/25.4mm SS 100 10.9 2.8 PC 130 14.2 3.7 ABS 85 9.3 2.4 PP 105 11.5 3.0	oz/in N/cm kg/25.4mm SS 155 17.0 4.4 PC 165 18.1 4.7 ABS 145 15.9 4.1 PP 155 17.0 4.4
Adhesion 72 hr dwell @ RT Modified ASTM D-3330 180 degree peel 2 mil Al foil backing	oz/in N/cm kg/25.4mm SS 110 12.0 3.1 PC 140 15.3 4.0 ABS 110 12.0 3.1 PP 110 12.0 3.1	oz/in N/cm kg/25.4mm SS 125 13.7 3.6 PC 165 18.1 4.7 ABS 125 13.7 3.6 PP 135 14.8 3.9	oz/in N/cm kg/25.4mm SS 170 18.6 4.8 PC 180 19.7 5.1 ABS 155 17.0 4.4 PP 175 19.2 5.1
Shear Strength at RT Modified ASTM D-3654 1 inch^2 sample size 1000 grams	10,000 Minutes	10,000 Minutes	10,000 Minutes
Shear Strength at 158°F (70°C) Modified ASTM D-3654 1 inch^2 sample size 500 grams	10,000 Minutes	10,000 Minutes	10,000 Minutes

Features

- This tape has a film carrier which can add dimensional stability to foams and other substrates and also makes it easier to handle the tape during slitting and die-cutting.
- The bond strength of 3M™ Adhesive 300LSE increases as a function of time and temperature, and has very high initial adhesion.

Available Sizes

Roll length, width, slitting tolerance, core size.

Product	**3M™ Double Coated Tape 93010LE • 93015LE • 93020LE**
Maximum Length in.:	
1/2" to 63/64"	180 yds. (164 m)
1" to 3"	360 yds. (329 m)
3" to 48"	360 yds. (329 m)
48" to 54"	360 yds. (329 m)
Normal Slitting Tolerance:	± 1/32 in. (0.08 mm)
Core Size (ID):	3.0 in. (76.2 mm)

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Temperature Resistance	Long Term (days, weeks):	250°F (121°C)
	Short Term (minutes, hours):	300°F (149°C)

Humidity Resistance No adverse effect on the bond after exposed to 100% relative humidity at 100°F (38°C).

U.V. Resistance Adhesive is resistant to oxidation and ozone when exposed to air or ultraviolet light.

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength. To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.*****

***Note:** Carefully read and follow the manufacturer's precautions and directions for use when using solvents. Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

Environmental Performance

Humidity Resistance: High humidity has minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

UV Resistance: When properly applied, nameplates and decorative trim parts are not adversely affected by exposure.

Water Resistance: Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

Temperature Cycling Resistance: High bond strength is maintained after cycling four times through:

4 hours at 158°F (70°C)
4 hours at -20°F (-29°C)
4 hours at 73°F (22°C)

Chemical Resistance: When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids, and alkalis.

Application Ideas

- Foam to powder coated painted surfaces.
- Low surface energy plastic adhesion.

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Storage

Store in original cartons at 70°F (21°C) and 50% relative humidity.

Shelf Life

If stored under proper conditions, these products retain their performance and properties for two years from date of manufacture.

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.

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ISO 9001:2008

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2008 standards.

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