

October, 2017

3M™ High Strength Double Coated Tape 93020LE

Product Description

Finite Element Analysis (FEA) data is available for this product at: 3m.com/FEA

3M™ Double Coated Tapes with 3M™ High Strength Acrylic Adhesive 300LSE provides a 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.

Product 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™ Acrylic Adhesive 300LSE increases as a function of time and temperature, and has very high initial adhesion.



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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		Attribute Modifier	Notes
Total Tape Thickness without liner	0.2 mm	7.9 mil		
Carrier Thickness	0.012 mm	0.5 mil		
Adhesive Type	300LSE		Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.
Adhesive Type	300LSE		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
Adhesive Carrier	Clear Polyester			
Liner	58# Polycoated Kraft			
Liner Color	Tan		Primary	
Liner Thickness	0.11 mm	4.2 mil		The thickness listed is based on a calculation from manufacturing controlled adhesive coat weights using a density of 1.012 g/cc. While past data pages have listed nominal thicknesses, the coat weight (and theoretical caliper) has not changed.

Adhesive Thickness		Attribute Modifier	Notes
0.095 mm		Backside	The caliper listed is based on a calculation from manufacturing controlled adhesive coat weight. While past data pages have listed nominal thicknesses of 1 and 2 mils, the coat weight (and theoretical caliper) has not changed.
3.7 mil		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
0.095 mm	3.7 mil	Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.

Property: Adhesive Thickness

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Typical Performance Characteristics

Relative High Temperature Operating Ranges		Test Condition
149 °C	300 °F	Short Term (minutes, hours)
121 °C	250 °F	Long Term (days, weeks)

Property: Relative High Temperature Operating Ranges

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Substrate
17.0 N/cm	155 oz/in	15	min	Stainless Steel
18.1 N/cm	165 oz/in	15	min	Polycarbonate (PC)
15.9 N/cm	145 oz/in	15	min	ABS
17.0 N/cm	155 oz/in	15	min	Polypropylene (PP)
18.6 N/cm	170 oz/in	72	hr	Stainless Steel
19.7 N/cm	180 oz/in	72	hr	Polycarbonate (PC)
17.0 N/cm	155 oz/in	72	hr	ABS
19.2 N/cm	175 oz/in	72	hr	Polypropylene (PP)

Property: 180° Peel Adhesion
 Method: ASTM D3330
 Temp C: 22C
 Temp F: 72F
 Environmental Condition: 52%RH
 Backing: Aluminum Foil
 notes: 12 in/min (300 mm/min)

Property	Values	Method	Test Condition	Notes
Static Shear	>10,000 min	ASTM D3654	1000 g @ Room Temperature	1 in ² sample size
Static Shear	>10,000 min	ASTM D3654	500 g @ 70°C (158°F)	1 in ² sample size

Available Sizes

Property	Values		Attribute Modifier
Note	Subject to Minimum Order Requirements		
Normal Slitting Tolerance	± 0.8 mm	± 1/32 in	
Core Size	76.2 mm	3 in	ID

Available Sizes (continued)

Maximum Length		Width
164 m	180 yd	1/2 in to 63/64 in
329 m	360 yd	1 in to 3 in
329 m	360 yd	3 in to 48 in
329 m	360 yd	48 in to 54 in

Property: Maximum Length

Electrical and Thermal Properties

Breakdown Voltage: 7500 V

Environmental Resistance

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.

Handling/Application Information

Application Ideas

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

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.

Storage and Shelf Life

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

If stored under proper conditions, these products retain their performance and properties for 24 months from date of manufacture.

Trademarks

3M is a trademark of 3M Company.

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References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Double-Coated-Tape-93020LE?N=5002385+3293240962&rt=rud
Safety Data Sheet (SDS)	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=93020LE

Family Group

	93010LE	93015LE	93020LE
Adhesive Type Attribute Modifier: Faceside	300LSE	300LSE	300LSE
Relative High Temperature Operating Ranges (°C) Test Condition: Short Term (minutes, hours)	149	149	149
Relative High Temperature Operating Ranges (°C) Test Condition: Long Term (days, weeks)	121	121	121
Adhesive Thickness (mm) Attribute Modifier: Backside	0.044	0.069	0.095
Liner Color Attribute Modifier: Primary	Tan	Tan	Tan
Adhesive Type Attribute Modifier: Backside	300LSE	300LSE	300LSE
Adhesive Thickness (mm) Attribute Modifier: Faceside	0.044	0.069	0.095
Total Tape Thickness without liner (mm)	0.1	0.15	0.2
Carrier Thickness (mm)	0.012	0.012	0.012
Adhesive Carrier	Clear Polyester	Clear Polyester	Clear Polyester
Liner	58# Polycoated Kraft	58# Polycoated Kraft	58# Polycoated Kraft
Liner Thickness (mm)	0.1	0.11	0.11

ISO Statement

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

Information

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