



High Strength Double Coated Tapes with Adhesive 300LSE

9495LE, 9474LE, 9490LE

Technical Data

September, 2004

Product Description

3M™ Double Coated Tapes 9495LE, 9474LE and 9490LE 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 lightly with oil typically used with machine parts. 3M tape 9490LE offers the added feature of 3M™ Adhesive 300MP on one side to provide excellent bond strength to a variety of foam and fabric materials.

Construction

Product Number	Faceside ¹ Adhesive Type/ Thickness	Carrier Type/ Thickness	Backside ² Adhesive Type/ Thickness	Liner Color, Type, Print	Liner Caliper	Total Tape Thickness (w/o liner)
3M™ Double Coated Tape 9495LE ⁴	300LSE/ 0.0028" (0.071mm)	Clear PET ³ 0.0005" (0.013mm)	300LSE/ 0.0034" (0.086mm)	Tan, 58#, Polycoated Kraft, "3M 300LSE"	0.0042" (0.11mm)	0.0067" (0.17mm)
3M™ Double Coated Tape 9474LE	300LSE/ 0.0028" (0.071mm)	Clear PET 0.0005" (0.013mm)	300LSE/ 0.0034" (0.086mm)	⁵ Faceside Liner/ Tan, 58# Polycoated Kraft, no print Backside liner/ Tan, 58#, Polycoated Kraft, "3M 300LSE"	0.0042" (0.11mm)/ 0.0042" (0.11mm)	0.0067" (0.17mm)
3M™ Double Coated Tape 9490LE ⁴	300MP/ 0.0028" (0.071mm)	Clear PET 0.0005" (0.013mm)	300LSE/ 0.0034" (0.086mm)	Tan, 58#, Polycoated Kraft, "3M 300LSE"	0.0042" (0.11mm)	0.0067" (0.17mm)

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: PET (Polyester).

Note 4: The caliper 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 a nominal caliper of 6.0 mils for these tapes, the coat weight has not changed.

Note 5: Backside liner is primary (stays with die cut part); Faceside is secondary (removed first).

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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.

Product Number	3M™ Double Coated Tapes 9495LE, 9474LE	3M™ Double Coated Tape 9490LE
Adhesion to stainless steel ASTM D3330 - 90 degree	Oz/in (N/100 mm)	Oz/in (N/100 mm)
- 15 minutes RT (FS/BS)	34/68 (37/74)	26/61 (28/66)
- 72 hour RT (FS/BS)	128/142 (139/154)	124/142 (135/154)
- 72 hour 158°F (FS/BS)	67/75 (73/82)	127/60 (138/66)
3) Adhesion to other surfaces* ASTM D3330 - 90 degree, 2 mil al foil, 72 hour RT		
ABS (FS/BS)	60/80 (66/88)	40/60 (44/66)
Polypropylene (FS/BS)	35/50 (38/55)	25/60 (27/66)
Polycarbonate (FS/BS)	117/75 (127/82)	
Shear Strength - ASTM D3654 modified - (.5 inch ² sample size)		
1000 grams at 72°F	>10,000 min	>10,000 min
500 grams at 158°F	>10,000 min	>10,000 min
Relative High Temperature Operating Ranges:		
Long Term (days, weeks)	200°F	200°F
Short Term (minutes, hours)	300°F	300°F
Relative Solvent Resistance	Very Good	Very Good

Available Sizes

Roll length, width, slitting tolerance, core size.

	3M tapes 9495LE, 9490LE	3M tape 9474LE
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)	—
Tolerance	± 1/32 in. (0.08 mm)	
Core ID	3.0 in. (76.2 mm)	—
Sheet Size	Not Available	24" x 36"

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- Features**
- These tapes have a moisture resistant polycoated kraft liner which can withstand high humidity conditions with minimal cockling or wrinkling.
 - These tapes have 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.
 - 3M™ Double Coated Tape 9474LE features a dual liner for ease in selective die cutting.
 - The bond strength of 3M™ Adhesive 300LSE increases as a function of time and temperature, and has very high initial adhesion.

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), will assist the adhesive in developing intimate contact with the bonding surface.

To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.*

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.

***Note:** Carefully read and follow the manufacturer’s precautions and directions for use when working with solvents. These cleaning recommendations may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.

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.

Liner Configuration Guide	General purpose steel rule die-cutting	58# PCK
	Steel rule cutting many nameplates on common sheet	83# PCK
	Kiss cutting, steel rule	83# PCK
	Rotary die-cutting	PET
	Selective die-cutting (cut adhesive before laminate)	Double-lined
	Thermoforming	HDPE
	Part inspection	HDPE, PET
	Embossed metal parts	White PP, HDPE
	Metal parts (punch press)	PET

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Adding Liners for 3M™ Double Coated Tapes with Adhesive 300LSE

1. Rotary processing, tape only, on a densified (outside of #4994) kraft liner. In this process, the tape waste will stay with the 58# PCK liner, leaving adhesive die-cuts dispensable from the #4994 (densified kraft) liner.
2. Rotary processing for finished parts. If a densified kraft (DK) liner is necessary, the adhesive should be first laminated to the substrate with pressure. After lamination, remove the 58# PCK liner and laminate the outside of the #4994 (DK) liner.

Application Ideas

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

Application Equipment

To apply adhesives in a wide web format, lamination equipment is required to ensure acceptable quality. To learn more about working with pressure-sensitive adhesives please refer to technical bulletin, Lamination Techniques for Converters of Laminating Adhesives (70-0704-1430-8).

For additional dispenser information, contact your local 3M sales representative, or the toll free 3M sales assistance number at 1-800-362-3550.

Storage

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

Shelf Life

If stored under proper conditions, product retains its performance and properties for two years from date of manufacture.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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©3M 2004 70-0709-3902-3 (9/04)