



L1 Adhesive Family

L1+RT • L1+DCP

Preliminary Technical Data

April, 2016

Product Description The L1 adhesive platform features a modified acrylic adhesive with good initial tack and peel adhesion to many open cell foam substrates. The 3M L1 Tapes™ are designed to withstand temperatures up to 200°F (93°C) and bond well to a wide range of foam substrates, including Polyurethane (PU) foam, Cross-Linked Polyethylene (PE) foam, and Microcellular Urethane foam. All L1 constructions feature a white 74# densified kraft (DK) liner for excellent processing.

Construction L1+RT adhesive transfer tape is reinforced with a high density scrim carrier to boost dimensional stability during lamination processes. An adhesive coat weight of 3.2 mils allows the adhesive to flow and ensures good bond strength even around tight radiuses and contoured surfaces.

L1+DCP is a 3.5 mil double-coated polyester (PET) tape which provides added dimensional stability and improved handling during laminating or die cutting processes, particularly on thin or flexible substrates. An adhesive coat weight of 1.5 mils on each side of a 0.50 mil PET carrier provides good adhesion to many foam substrates.

Product Name	Adhesive Thickness	Liner Color / Type	Liner Thickness
L1+RT	3.2 mils (0.081 mm)	White / 74# DK	4.1 mils (0.103 mm)
L1+DCP	3.5 mils (0.097 mm)	White / 74# DK	4.1 mils (0.103 mm)

Note: The adhesive caliper listed is based on a calculation from manufacturing controlled adhesive coat weights using a density of 1.071 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.

Product Number	L1+RT	L1+DCP
Adhesion to Substrates		
ASTM D3330 – 90 degree, 2 mil AL foil, 72 hour RT	Oz/in (N/25 mm) Backside	Oz/in (N/25 mm) Backside
Stainless Steel	48 (13.3)	40 (11.1)
Aluminum	47 (13.1)	38 (10.6)
ABS	50 (13.9)	39 (10.8)
Polypropylene	43 (12.0)	34 (9.5)

Product Number	L1+RT		L1+DCP	
Adhesion to Foam Substrates				
ASTM D1876-08 T-Peel Adhesion 2 mil PET, 72 hour RT	Oz/in (N/25 mm) Faceside	Observe	Oz/in (N/25 mm) Faceside	Observe
Polyurethane Foam	22 (6.1)	POF	14 (3.9)	POF
Microcellular Urethane	27 (7.5)	POF	48 (13.3)	FT
Cross-linked Polyethylene	25 (7.0)	FP	47 (13.1)	FT

*** POF=Pop Off Foam, FT=Foam Tear, FP=Foam Picking

Static Shear Strength

ASTM D3654, Modified - (1 inch ² sample), 1000 gm Wt., 72hr dwell		
Product Name	Environmental Conditions (minutes)	
	72°F (22°C)	158°F (70°C)
L1+RT	34	>1
L1+DCP	1,088	3

Available Sizes

Roll Length, Width, Slitting Tolerance, Core Size:

Roll Widths:	39 in (1000 mm), 54 in (1372mm), & 60 in (1524mm)
Roll Length:	251 yards (230 m)
Normal Slitting Tolerance:	± 1/32 in. (0.08 mm)
Core Size (ID):	3.0 in. (76.2 mm)

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Features

- The L1 adhesive is a modified acrylic adhesive that withstands temperatures up to 200°F (93°C).
- Adhesive offers good initial tack and peel adhesion to many open cell foam materials.
- Bonds well to polyurethane (PU) foam, cross-linked polyethylene (PE) foam, & microcellular urethane foam.
- An 74# white coloured, unprinted densified kraft (PCK) liner for excellent processing.

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application 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.

Environmental Performance

Temperature Resistance: The L1 adhesive family is usable for short periods (minutes, hours) at temperatures up to 200°F (93°C) and for intermittent longer periods of time (days, weeks) up to 150°F (66°C).

Lower Service Temperature: -40°F (-40°C).

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.

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 12 months from the date of shipment.

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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: 2000

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