

3M™ 8132LE, 8153LE Laminating Adhesives

Product Data Sheet

Issue Date : August 1997

PRODUCT CONSTRUCTION

<u>Product</u>	<u>Adhesive</u>	<u>Liner</u>
8132LE	51 microns (2.0 thou) #300 LSE "Hi-Strength" Acrylic Adhesive	100microns (4.0 thou, 94glm ² (58#) Polycoated Kraft 163 microns (6.5 thou), 140glm ² , (86# Polycoated Kraft
8153LE	88 microns (3.5 thou) #300 LSE "Hi-Strength" Acrylic Adhesive	100microns (4.0 thou, 94glm ² (58#) Polycoated Kraft 163 microns (6.5 thou), 140glm ² , (86# Polycoated Kraft

FEATURES

- * 300 LSE "Hi-Strength" Acrylic Adhesive provides very high bond strength to most surfaces surfaces, including low surface energy plastics.
- * Thickness range of 51 microns, 88 microns, for use on smooth or rough.
- * Extremely smooth, non-fibred adhesive for excellent graphic appearance.
- * Excellent bond to plastics and low surface energy coatings such as, polypropylene and powder coated paints, combined with high shear for excellent temperature resistance.
- * Excellent adhesion to surfaces contaminated lightly with oil typically used with machine parts.
- * Double lined for selective die-cutting.

APPLICATIONS

- * Plastic nameplates or graphic overlays for use on low surface energy plastics.
- * Waste removed nameplates on a common sheet for ease of application.
- * Graphic overlays with selectively removed adhesives.
- * Attaching membrane switch assemblies to powder coated surfaces and low surface energy plastics
- * Graphic application to surfaces such as wood, fabric, plastic, where very high bond strength is required.
- * Bonding a variety of foam substrates to metal and plastic surfaces.
- * Attaching identification material to oily surfaces typical of machine parts.

TYPICAL ADHESION PROPERTIES

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

Peel Adhesion - (Newtons/10 mm) ASTM D3330, modified: 90° Peel, 51 micron aluminium backing.

	PRODUCT	15 Minute Room Temperature		72 Hour Room Temperature	
		N/10 mm	OZ./In.	N/10mm	OZ./In
Stainless Steel	8132LE	7.8	71	8.2	75
	8153LE	9.8	90	10.9	100
ABS	8132LE	7.7	70	8.6	79
	8153LE	8.8	80	12.4	113
Polypropylene	8132LE	7.5	69	8.1	74
	8153LE	9.7	89	11.3	103

ENVIRONMENTAL PERFORMANCE

The properties defined are based on the attachment of impervious faceplate materials (such as aluminium) to a stainless steel test surface.

- Bond Build-Up:** The bond strength of #300LSE "Hi-Strength" Acrylic Adhesive increases as a function of time and temperature, and has very high initial adhesion.
- Humidity Resistance:** High humidity has minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 32 degrees C and 90% relative humidity.
- U.V. 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 70°C
4 hours at -29°C
16 hours at 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.
- Temperature Resistance:** The #300LSE "Hi-Strength" adhesive is usable for short periods (minutes, hours) at room temperatures up to 148°C, and for intermittent longer periods of time (days, weeks) up to 93°C.
- Low Service Temperature:** - 40°C
- Shelf Life:** Product retains its performance and properties for two years from date of manufacture if stored at room temperature conditions of 22°C, and 50% RH. Storage in plastic bags is recommended.

PROCESSING

- Slitting & Die-Cutting:** This adhesive is very aggressive and may be difficult to die cut. Chilling the adhesive to between 2°C and 10° C will improve the processability. In addition, dies can be lubricated with Laminoleum evaporative stamping oil
- Roll Laminating:** A combination of metal and rubber rollers with moderate pressure is recommended.

Note: Please refer to the **3M Slitting/Die-Cutting Technical Bulletin** for further details.

SPECIAL CONSIDERATIONS/APPLICATION TIPS:

For maximum bond strength the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Consult solvent manufacturer's Material Safety Data Sheet for proper handling and storage instructions.

Bond strength can also be improved with firm application pressure and moderate heat, from 38° C to 54° C, causing the adhesive to develop intimate contact with the bonding surface.

Ideal tape application range is 21° C to 38° C. Initial tape application to surfaces at temperatures below 10° C is not recommended for most pressure sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.