

Avery® L-3050 Reflective Film (revision 1)
For Embossed License Plates
Dated: 10/24/00

Description:

Avery L-3050 Series Reflective sheeting is a premium quality, durable, wide angularity, enclosed lens retroreflective material. Avery L-3050 Series is designed for use in the production of high quality embossed license plates.

Construction:

Face Film:	High gloss retroreflective vinyl
Adhesive	Permanent acrylic pressure sensitive
Liner:	Two side polyethylene coated paper

Physical Properties:

The following information on physical and chemical characteristics is based upon tests believed to be reliable. The values are intended only as a source of information. They are given without guarantee and do not constitute a warranty. The purchaser should independently determine, prior to use, the suitability of this material for his/her specific purpose. (Data represents averages and is not intended for use as a specification).

Outdoor Durability	5 years when properly processed and applied (vertical exposure, unprinted or Avery supplied preprinted sheeting).				
Minimum Surface/Ambient Air Application Temperature	+50°F (5°C) when applied with a squeeze roll applicator				
Application Surface	Flat, aluminum				
Service Temperature Range	-40°F to +180°F (-40°C to 82°C)				
Typical Film Caliper (w/adhesive)	4.3 to 5.3 mils (140 µm to 165 µm)				
Optical Properties	LS-300C, Table IV, Ref. 3 (Class 1) DIN 74069				
Minimum Adhesion Values	180° Peels <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Substrate</td> <td style="width: 50%;">15 min.</td> </tr> <tr> <td>Anodized Aluminum</td> <td>2.5 lb./in (438 N/m)</td> </tr> </table> NOTE: Tested per ASTM D1000. Always pre-test your specific substrate prior to actual application.	Substrate	15 min.	Anodized Aluminum	2.5 lb./in (438 N/m)
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Shelf Life	One year when stored at 68-77°F (20-25°C) and 50% ± 5% R.H.				
Dimensional Stability	Less than 0.03 inches (0.8 mm) shrinkage after 1000 hours Atlas Twin Carbon Arc Weatherometer				

Color Availability: (custom colors available upon request)

Product	Color	Minimum Reflectivity Value
L-3050	White	(0.2°, -4°) = 50 CPL (0.33°, +5°) = 40 CPL

Solvent Resistance:

When properly processed and applied, the film is resistant to most common solvents. When tested according to LS-300C, Section 3.6.2, immersion in the following solvents for the specified length of time the film shows no deterioration:

Kerosene	10 minutes
Turpentine	10 minutes
Toluene	1 minute
Xylene	1 minute
Methyl Alcohol	1 minute

Approved Screen Printing Inks:

Ink Supplier*	Ink Series	Ink System
Nazdar	System II	Solvent Based
Nazdar	Gloss Vinyl (GV)	Solvent Based
Sericol	TMI II	Solvent Based

**Inks available in custom colors for specific design needs*

Additional Information:

Preprinted Graphics:	L-3050 Series license plate sheeting can be made available with custom printed graphics
Watermark/Security Mark:	L-3050 Series License plate sheeting can also be made available with a subsurface watermark for security purposes.
Converting Information:	<ul style="list-style-type: none"> • For best results, aluminum substrate should be used and heated prior to lamination to 70-90°F (21-32°C) • Tension on the sheeting during the lamination process needs to be kept at a minimum to avoid overstretching the material. The sheeting will not perform properly when the stretch exceeds 3%. A 1mm stretch is recommended or as needed to register the preprinted graphics. • After lamination, allow a minimum of a 24 hour dwell at 50°F (10°C) before embossing. • Embossing configurations differ, Pre-test Avery L-3050 with your specific system prior to full production. • Maximum embossing depth of L-3050 is 0.080”(2.0mm) • Temperatures above 200°F (93°C) need to be avoided during the converting process (laminating, embossing, printing and drying) or cracking of the sheeting may occur.

Avery Roller Coat Ink:

Product	VOC Level	Minimum Cure Profile*	Durability
CD-381 series	5.7-6.7 #/gal.	180°F (82°C) for 10 minutes	5 years

*Allow license plates to cool to room temperature prior to stacking and packaging the plates.

