

5100 Diffuser Film

Cast Diffuser Film

Revision 4

Introduction

Avery Dennison® 5100 Diffuser Films are premium quality cast vinyl films designed for use as a light diffuser. Avery Dennison 5100 Diffuser Films applied onto flexible and rigid substrates balance the light distribution of a backlit sign and eliminate the issue of hot spots. Avery Dennison 30% Diffuser Film diffuses 30% of light and blocks out the remaining 70%. Avery Dennison 60% Diffuser Film diffuses 60% of back lit light and blocks 40%

Common Applications

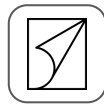
- Illuminated signage
- Architectural signage
- Flexible sign faces
- Directional signage
- Outdoor advertising



Face Film
50 micron lustre
cast PVC



Adhesive
Permanent acrylic



Backing
One side coated Kraft paper,
125g/m²



Outdoor life**
Up to 7 years

Features

- Excellent white diffusion uniformity in transmitted light, when applied to clear rigid substrates
- Additional diffusion obtained, when used on white substrates
- Excellent colour fastness and durability
- Creates different shades of colour
- Excellent dimensional stability

Conversion

- Flatbed cutters
- Friction fed cutters
- Die cutting
- Thermal transfer
- Screen printing
- Offset printing
- Cold overlaminating
- Electrostatic printing
- Eco solvent inkjet
- Solvent inkjet
- UV curable inkjet
- Latex inkjet

Applications

- Refer to [Instructional Bulletin 1.01](#) for Substrate Cleaning and Preparation
- Refer to [Instructional Bulletin 2.06](#) for Converting and Applying Blockout and Diffuser Films

General

Roll width, length	610mm, 1220mm	50m
Caliper, face film	ISO 534	50 micron
Caliper, face film & adhesive	ISO 534	75 micron
Elongation	DIN 53455	100%
Dimensional stability	DIN 30646	0.4mm max
Adhesion, initial	FINAT FTM-1, Glass	590 N/m
Adhesion, ultimate	FINAT FTM-1, Glass	650 N/m
Shelf life	Stored at 22° C/50% RH	2 years
Flammability		Self extinguishing
Expected Durability**	Vertical exposure	Up to 7 years

Thermal

Application temperature	Minimum: + 10°C
Temperature range	-40°C to +80°C

Chemical

Humidity resistance	120 hours exposure	No effect
Corrosion resistance	120 hours exposure	No contribution to corrosion
Water resistance	48 hour immersion	No effect
Chemical resistance	Mild acids Mild alkalis	No effect No effect
Solvent resistance	Applied to aluminium	No effect exposed to: Oils, greases, aliphatic solvents, motor oils, heptanes, kerosene, JP-4 fuel

Important

Information on physical characteristics is based upon tests we believe to be reliable. The values listed herein are typical values and are not for use in specifications. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of any material for their specific use.

All technical data is subject to change without prior notice.

**Expected Durability

The expected durability of Avery Dennison films are defined as the expected performance life of the Avery Dennison graphic film(s) within Zone 1 of the Avery Dennison zone system, in outdoor vertical exposure conditions. The actual performance life will depend on a variety of factors, including selection and preparation of substrate, angle and direction of exposure, application methods, environmental conditions and cleaning/maintenance of the films. In case of films used in areas of high temperatures or humidity, high altitudes and industrially polluted areas the performance will be further reduced.

Warranty

Avery Dennison® materials are manufactured under careful quality control and are warranted to be free from defect in material and workmanship. Any material shown to our satisfaction to be defective at the time of sale will be replaced without charge. Our aggregate liability to the purchaser shall in no circumstances exceed the cost of the defective materials supplied. No salesman, representative or agent is authorised to give guarantee, warranty, or make any representation contrary to the foregoing. All Avery Dennison® materials are sold subject to the above conditions, being part of our standard conditions of sale, a copy of which is available on request.

^^ Removability

Not removable when applied to nitrocellulose paints, fresh screen print inks, ABS, polystyrene & certain types of PVC.

Expected Durability and Warranted Period Definitions

Expected durability is the expected period of time defined in the product data sheet, the product should, but is not warranted to, perform satisfactorily when applied in vertical exposure conditions as defined in [Instructional Bulletin 1.30](#). The warranted period as defined in the appropriate ICS Performance Guarantee Bulletin, is the maximum period of time Avery Dennison will warrant the finished products performance in accordance with ICS Performance Guarantee Terms and Conditions 1.0, provided that the film is properly stored, converted and installed in accordance with Avery Dennison guidelines.

Testing Methods

Dimensional stability:

Is measured on a 150 x 150 mm aluminium panel to which a specimen has been applied; 72 hours after application the panel is exposed for 48 hours to + 70°C, after which the shrinkage is measured.

Adhesion:

(FTM-1, FINAT) is measured by peeling a specimen at a 180° angle from a stainless steel or float glass panel, 24 hours after the specimen has been applied under standardised conditions. Initial adhesion is measured 20 minutes after application of the specimen.

Flammability:

A specimen applied to aluminium is subjected to the flame of a gas burner for 15 seconds. The film should stop burning within 15 seconds after removal from the flame.

Temperature range:

A specimen applied to stainless steel is exposed at high and low temperatures and brought back to room temperature. 1 hour after exposure the specimen is examined for any deterioration. Note: Prolonged exposure to high and low temperatures in the presence of chemicals such as solvents, acids, dyes, etc. may eventually cause deterioration.

Chemical Resistance:

All chemical tests are conducted with test panels to which a specimen has been applied. 72 hours after application the panels are immersed in the test fluid for the given test period. 1 hour after removing the panel from the fluid, the specimen is examined for any deterioration.

Corrosion Resistance:

A specimen applied to aluminium is exposed to saline mist (5% salt) at 35°C. After exposure, the film is removed and the panel is examined for traces of corrosion.



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