

PRODUCT DATA SHEET

Avery Dennison® V-4000 E Retro-Reflective Films

Issued: 10/2022

Introduction

ECE104 Class E approved

Avery Dennison® V-4000 E Retro-Reflective film is designed for truck and trailer applications in Europe. Idealsolution where day and night time visibility is required. V-4000 E comes with a watermark certifying of its ECE104 - Class E approval. (Approval Number 104R – 000005).

Conversion

Avery Dennison® V-4000 E Reflective films can be screen printed and converted using a wide variety of conversion techniques including steel rule die-cutting, thermal die-cutting, flatbed sign-cut or drum rollersign-cut. Good signcutting properties shown on the perm-version; sign cutting possible on LTR-version. For V-4000 E with Easy Apply™ RS we recommend flat transport of converted material. V-4000 white can be inkjet printed (Latex, Mild/Eco solvent or UV) as well. Always test suitability of V-4000 E prior to use. The digitally printed films are recommended to be protected using an overlamine (see Technical Bulletin 5.3).

Colours Avery Dennison® V-4000 E retro-reflective is available in White, Yellow, Red, Orange, Blue and Black as standard colours plus the option to customize colour matching.

Reflectivity Values V-4000 E provides maximum reflectivity while meeting the reflectivity levels specified by the ECE104 Legislation.

	White	Yellow	Red	Blue	Orange	Black
Reference	V-4000-101E	V-4000-235E	V 4000-440E	V-4000-688E	V-4000-360E	V-4000-190E
Coeff of Retro-Reflection\$	49,4	36,5	8,9	3,8	15,7	9,2

* Cd/Lx/m² at an entrance angle of 5° and observation angle of 0.2°.

Recommendations

Application on flat surfaces and moderate curves with or without rivets. Not recommended for unpainted stainless steel. Wet method application is not recommended. The use of wet application invalidates the standard warranty.

Features

- » ECE104 - Class D/E approval
- » Outstanding digital printability across all platforms (V-4000 White only)
- » Excellent printing results on screen presses
- » Meets ASTM® D4956, Type 1 reflectivity levels,
- » Flexible cast reflective vinyl



Face Film

High gloss, cast retro-reflective vinyl film



Adhesive

Permanent, pressure sensitive, Clear Acrylic (Perm-version)

or Long Term Removable Acrylic (LTR-version)



Backing

90# StaFlat

or 90# StaFlat, Poly-Coated with Easy Apply™ RS technology



Durability

7 years



Shelf Life

1 year from date of purchase

- » High dimensional stability
- » Colour matching option
- » Possible to sign-cut
- » Unique patented Easy Apply™ RS adhesive technology helps prevent wrinkles and bubbles during application
- » Excellent long term removability (LTR-version)

Physical Characteristics

Product	Test method ¹	Results	
Caliper, facefilm (micron)	ISO 534	V-4000 E Permanent	V-4000 E EARS/LTR
Dimensional stability (mm max.)	FINAT FTM 14	179	237
Shelf life (years)	Stored at 22° C/50-55 % RH	0,8	0,8
Durability ² (years)	Vertical exposure	1 year from date of purchase	1year from date of purchase
Adhesive			
Adhesion, 15 minutes (N/m)	FINAT FTM-1, aluminium	7	7
	stainless steel	680	376
	painted aluminium	600	270
		495	179
Temperature range			
Application temperature (Minimum: °C)		+10	+10
Service temperature (°C to +°C)		-40 to +80	-40 to +80
Chemical properties³	Applied to aluminium		
Solvent resistance			
Kerosene and Turpentine	10 minutes	No effect	
Toluene, Xylene and Methyl alcohol	1 minute	No effect	

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. 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 this material to their specific use.

All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

1) Test methods: More information about our test methods can be found on our website.

2) Durability: The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased.

3) Prolonged immersion in gasoline and similar fluids is not recommended.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2022 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.



Graphics
Solutions

EU
graphics.averydennison.eu