

## PRODUCT DATA SHEET



# Avery® HV 1200 E Retro-reflective Films

**ECE104 Class E approved**

issued: 28/08/2010

### Introduction

Avery® High Visibility 1200 E is ideally suited for retro-reflective fleet marking applications where both day and night time visibility are required. HV 1200 E comes with a watermark certifying of its ECE104 - Class E approval. (Approval Number 104R – 00 0005).

### Description

Facefilm: High gloss, cast retro-reflective vinyl film  
Adhesive: Permanent, pressure sensitive, clear acrylic  
Backing paper: 90# imprinted StaFlat

### Features

- ECE104 - Class E approval
- Flexible cast vinylic face film
- Excellent cutting, weeding, transferring, and conforming characteristics
- High dimensional stability
- Extensive colour range
- Colour match option

### Reflectivity Values

HV 1200 E provides maximum reflectivity while meeting the reflectivity levels specified by the ECE104 Legislation.

For more information on the ECE104 legislation, please visit our website [www.averygraphics.com](http://www.averygraphics.com), select your region and use the quick search button. You will find a link to the ECE104 legislation.

### Recommendations for use

- Medium to long term fleet marking.

### Colours

Avery® HV 1200 E retro-reflective sheeting is available in White, Yellow, Red, Gold, Orange, Blue, Black, Green, Dark Red and Light Blue as standard colours.

### Conversion

Avery® HV 1200 E can be converted using a wide variety of conversion techniques including steel rule die-cutting, guillotine cutting, rotary cutting and thermal die-cutting. Always test suitability of HV 1200 E prior to use.

### Application

Application on flat surfaces and simple curves with or without rivets<sup>1</sup>. Not recommended for unpainted stainless steel. Wet method application is not recommended. The use of wet application invalidates the standard warranty.

<sup>1</sup> It is recommended to cut out rivets



## Physical and Chemical Properties

### Physical properties

Features	Test method <sup>1</sup>	Results
Caliper, facefilm + adhesive		223 - 249 µm
Dimensional stability	1000 hrs AtlasTwin Arc Wheatherometer, EH	0.8 mm. max
Shelf life	Stored at 23°C/50% RH	1 year
Outdoor Durability <sup>2</sup>	Vertical exposure only	7 years

### Temperature range

Features	Results
Application temperature	Minimum: +10°C squeeze roll appl.
Service temperature	-40° to +80° C

### 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, after immersion in the following solvents for the specified length of time, the film shows no deterioration. Kerosene and Turpentine: 10 minutes, Toluene, Xylene and Methyl alcohol: 1 minute.

### Colour consistency

Due to the nature of retro-reflective material, graphics comprised of multiple pieces of film may give the perception of a colour shift depending on the viewing angle and light source. This is not considered a defect in the material. To minimize this effect, cut letters from one continuous piece of material or use materials from adjacent portions of the roll. Also, a small overlap (5 mm) or no overlap of the retro-reflective film is recommended to maintain a consistent viewing angle.

### Important

Information on product characteristics and physical and chemical properties 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 this material to their specific use. All technical data are subject to change.

### Warranty

Avery® branded 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 authorized to give any guarantee, warranty, or make any representation contrary to the foregoing. All Avery® branded materials are sold subject to the above conditions, being part of our standard conditions of sale, a copy of which is available on request.

### 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.

