



Validation Security Sheeting with Ensure™ Custom Image

Series VP5560

For use on Multi-Year Licenses

Product Bulletin VP5560

April 2014

Replaces PB VP5560 dated April 2005

Description

3M™ Validation Security Sheeting Series VP5560 is designed and manufactured for fabrication of reflective validation stickers for application to a smooth surfaced, multi-year license and reciprocity plates. The sheeting is precoated with pressure sensitive adhesive protected by a removable paper liner. The sheeting is supplied in roll form with the stickers precut on the roll.

The day and night color of the 3M sheeting is similar and will remain highly reflective when viewed at wide entrance angles. The sheeting is designed for thermal transfer printing to produce various color and design combinations on finished validation stickers using the 3M™ Thermal Transfer Imaging System VP5000.

3M Series VP5560 sheeting contains directional security marks that are an integral part of the sheeting which makes unauthorized sticker reproduction extremely difficult. These marks are spaced no further than .75 inches (1.9 cm) from each other so that a part of one mark is visible on each 1 inch x 1.5 inch (2.54 cm x 3.81 cm) validation sticker. 3M sheeting is available with customized marks as mutually agreed upon by the purchaser and 3M.

3M™ Ensure™ Image

The directional security marks facilitate effective visual verification of validation sticker authenticity, when properly applied to a vertically mounted license plate on an automobile as follows:

1. The marks will be visible to a viewer standing directly in front of the sticker at a distance of 4-8 feet (1.2-2.5m). This represents an angle of 30° above the perpendicular to the plate.

2. The mark will not be visible to a viewer:

- a. When standing directly in front of the sticker at a distance of either 2 feet (.6m) or 20 feet (6.1m).
- b. When the viewer has stepped from the head-on viewing position to either side thus forming an angle greater than 45° to the sticker.

The directional security mark will be visible in either diffuse daylight or by retroreflective light at night and will not alter the color of the sheeting or reduce the sheeting brightness below the minimum specified levels. The marks will not interfere with appearance and legibility of finished validation stickers.

The directional security marks cannot be removed by chemical or physical means from the sheeting or the finished validation sticker, applied or unapplied, without visibly damaging the reflective sheeting.

Performance Considerations

Series VP5560 sheeting has been designed for the economical and effective production of reflective validation stickers for use on multiple year license and reciprocity plates. Recommended 3M application procedures should be followed for maximum durability. Although no warranty is offered, stickers printed with thermal transfer ribbon should have up to 24-month durability.

A. Reflectivity

The minimum reflectivity value of 3M™ Validation Security Sheetings Series VP5560 are shown in Table A.

Table A

Minimum Coefficient of Retroreflection
Candlepower per Foot Candle per Square Foot
Candelas per Lux per Square Meter

0.2° Observation Angle ¹			
Sheeting Color		Entrance Angle ²	
		-4°	40°
White	VP5560	50	15
Yellow	VP5561	30	8
Red	VP5562	10	3
Gold	VP5563	30	10
Orange	VP5564	6	2
Yellow-Green	VP5565	24	8
Blue	VP5566	14	5
Green	VP5567	28	8
Magenta	VP5568	12	3
Lemon-Yellow	VP5569	28	11

¹Observation (Divergence) Angle - The angle between the illumination axis and the observation axis.

²Entrance (Incidence) Angle - The angle from the illumination axis to the retroreflector axis. The retroreflector axis is an axis perpendicular to the retroreflective surface.

All measurements shall be conducted in accordance with ASTM E-810, "Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting."

The reflectivity of the sticker totally wet by rain, will not be less than 90% of the values specified in Table A. Wet performance measurements shall be conducted in accordance with ASTM E-810.

Contact your 3M Technical Representative for wet performance measurement test set-up.

Application

Series VP5560 validation security sheeting is supplied with a pressure sensitive adhesive for easy, vandal resistant application using finger pressure to license and reciprocity plates that are properly prepared (smooth, dry and clean). The minimum application temperature for applying finished stickers to a plate is -10° F (-23° C).

A maximum of three stickers overlaid per plate is recommended for these stickers. Depressed areas for locating stickers should be provided on the plates to make removal of the stickers more difficult.

3M validation security sheeting is warranted to be compatible with license plates made from 3M reflective sheetings. User should verify proper adhesion performance on any other surface before using.

Fabrication

- A. Sheeting — The 3M validation security sheeting is provided in rolls with stickers precut in the roll. The rolls of stickers can be perforated and back instructions printed. Contact your 3M Technical Representative for more information.
- B. Thermal Transfer Printer VP5000L.
- C. Thermal Transfer Ribbon Series VP5130.
- D. Cutting — The stickers may be hand cut individually or into strips of multiple stickers or processed into book form. Stickers can also be packaged in roll form or into fanfold boxes. Contact your 3M Technical Representative for more information on sticker packaging formats.

Cleaning

The reflective sheeting stickers may be cleaned with a soft cloth or brush, using warm water, soap, then a clean water rinse, or with nonabrasive automobile cleaners or polishes. Tar, oil or road film may be removed by using a cloth moistened with kerosene.

Storage

Sheeting should be stored in a cool, dry area and used within one year after date of receipt.

FOR INFORMATION OR ASSISTANCE

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1-800-265-1840**

**Internet:
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