



Scotchlite™ Flexible Reflective Sheeting Series 13150

Product Bulletin 13150

January 1998

Health and Safety Information

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet (MSDS), and/or product label of chemicals prior to handling or use. Also refer to MSDS for information about the volatile organic compound (VOC) content of chemical products. Consult local regulations and authorities for possible restrictions on product VOC content and/or VOC emission.

Description

3M™ Scotchlite™ Flexible Reflective Sheeting Series 13150 is a highly flexible, durable, adhesive-coated retroreflective sheeting designed for the production of multi-color emblems and markings on vehicle surfaces. When properly processed markings are viewed at night, they have the same appearance as during the day. The sheeting's flexibility is suited for application over surfaces with rivets, flat or curved surfaces and resists cracking in cold climates. Series 13150 sheeting retains reflectivity when totally wet by rain or when viewed at wide entrance angles.

Properties:

Adhesive Pressure Sensitive

Adhesive Color White

Minimum application 13°C (55°F)
temperature (sheeting and substrate) Flat surface without rivets
16°C (60°F)
Flat surface with rivets

Maximum application 38°C (100°F)
temperature (sheeting and substrate)

Coefficients of Retroreflection

The sheeting has the following typical coefficient of retroreflection expressed in candelas per lux per square meter ($cd * lx^{-1} * m^2$) when illuminated with a CIE Standard Illuminant A and measured as recommended by the CIE Publication No. 54/1982 with the entrance and observation angles in the same plane.

** **a = 0,2°** Observation Angle

Entrance Angles * b 5°

Color

White	13150	100
Yellow	13151	58
Red	13152	25
Orange	13154	38
Lt. Blue	13165	40
Lt. Green	13167	40

* Entrance (Incidence) Angle - The Angle from the illumination axis to the retroreflective axis. The retroreflective axis is an axis perpendicular to the reflective surface.

** Observation Angle - The angle between the illumination axis and the observation axis.

To assure uniform day and night appearance, multiple pieces of sheeting used together as a set should be matched prior to screenprinting.

of the sheeting, apply another test piece and again observe 24 hours later. Continue to apply 20cm (8 inch) pieces and evaluate after 24 hours until outgassing ceases.

Fabrication

For detailed processing or application procedures for the subject product, contact your 3M representative.

- A. Cutting: Hand cut, band saw, guillotine, or die cut per Information Folder 320 (4.6).
Letters or designs over 8 cm (3") high can be kiss cut or plotter cut.
- B. Screen Printing:
3M™ Scotchlite™ Transparent
Screenprinting Inks Series 1900.
- C. Clear Coating:
For warranty coverage overprinting with 1920 DR clear is required.
- D. Drying: Refer to bulletin on the specific ink used for drying information.
- E. Premasking/Prespacing:
1. Premasked Markings: Application Tape SCPM-3
 2. Prespacing Markings: Prespacing Tape SCPS-2 or Application Tape SCPM-3.
 3. Premasked/Prespacing Markings: Application Tape SCPM-3 or Prespacing Tape SCPS-2
 4. "Kiss Cut" Premasked/Prespacing Markings: Prespacing Tape SCPS-2

Cleaning

Hand wash with sponge, cloth, or soft brush using warm water and detergent. Rinse thoroughly. To remove grease, oil or tar, use cloth moistened with heptane, VM&P naphtha or mineral spirits. Then wash with detergent and water and rinse thoroughly.

Storage

Store in a cool, dry area of 18 - 28°C and 30 - 60% relative humidity and use materials within one year after date of receipt. Store rolls in original shipping carton or suspend horizontally from a rod or pipe through the core. Store sheets flat (Information Folder 4.5). Store clear coated, premasked markings at a temperature below 29°C (85°F). If stored above this temperature, blocking of the premask to the sheeting could occur.

Shelf Life

Unprinted film may be stored by the fabricator for a period of up to one year and, after printing, markings may be stored for an additional period of up to one year. Unprinted sheeting and markings must be stored in a clean area, free from excessive moisture and direct sunlight, with ambient temperatures of 0° to 28°C.

Application

See Information Folders 4.1, 4.2, and 4.3 for surface preparation and application.

Application to Uncured Substrates:

As two-part urethane paints systems and clear coats cure, outgassing occurs which can cause bubbling of applied sheeting and films. *3M ASSUMES NO LIABILITY FOR BUBBLING OF SHEETING OR FILMS DUE TO OUTGASSING.* A minimum of 5 days curing time at 24 degrees C (75°F) or above is generally required before outgassing decreases to the point where bubbles are no longer detectable on 3M Scotchlite™ sheeting. If tests run earlier than 5 days show outgassing has stopped, then graphics can be applied earlier than 5 days. The following test for outgassing must be performed after 2-part urethane paint and 2-part urethane clear coats have been cured for 5 days at 24 degrees C (75°F) or above to assure that the paint has completely cured. Properly clean the surface and apply a 20cm x 20cm (8 inch x 8 inch) piece of sheeting identical to that used to fabricate the graphics. Check the test sample 24 hours later for bubbles due to outgassing. If none is evident, the application can be made. If outgassing occurred, evidenced by bubbling

WARRANTY
3M™ Scotchlite™ Reflective Sheeting Series 13150

3M Company warrants that 3M™ Scotchlite™ Reflective Sheeting Series 13150 sold by 3M to be used for emblems, markings will remain effective for its intended use in Europe for three years, subject to the following provisions:

If Scotchlite Reflective Sheeting is processed and applied to a vertical +/- 10° surface in accordance with all 3M application and fabrication procedures provided in 3M's product bulletins, information folders, technical memos (which will be furnished to the agency upon request), including the exclusive use of 3M matched component systems, process colors, clear coatings, application tapes, and recommended application equipment; and

If the emblem or marking deteriorates due to natural causes; such as fading, cracking, peeling, lifting, or discoloration; 3M's warranty shall furnish a prorata replacement (up to 36 months) of 3M materials supplied and used according to 3M recommendation and which have not performed satisfactorily in accordance with above.

Conditions

Such failure must be solely the result of design or manufacturing defects in the Scotchlite Reflective Sheeting and not of outside causes such as: improper fabrication, handling, maintenance or installation; use of process colors, thinners, or coatings, and sheetings not made by 3M; use of application procedures not recommended by 3M; applied to a surface at greater than +/- 10° from vertical; failure of substrate; exposure to chemicals, abrasion and other mechanical damage; collisions, vandalism or malicious mischief.

3M reserves the right to determine the method of replacement.

Replacement sheeting will carry the unexpired warranty of the sheeting it replaces.

Claims made under this warranty will be honored only if 3M is notified of a failure within a reasonable time, reasonable information requested by 3M is provided, and 3M is permitted to verify the cause of the failure.

Liability

3M assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where reference is made in literature to a commercially available product, made by another manufacturer, it shall be the user's responsibility to ascertain the precautionary measures for its use outlined by the manufacturer.

Application and Substrates: 3M shall not be liable and no warranty shall apply for films not applied according to published 3M Information Folders or which are applied to unsound surfaces or to surfaces which subsequently crack, peel, outgas, or become damaged beneath the markings.

Important Notice to Purchaser: All statements, technical information and recommendations herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. All questions of warranty and liability relating to this product are governed by the terms of the sale subject where applicable to the prevailing law. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.



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