



## Scotchlite™

### Reflective Material

### 8765 White Transfer Film

#### Technical Data Sheet

#### Description

3M™ Scotchlite™ Reflective Material - 8765 White Transfer Film is composed of wide angle, exposed retroreflective lenses bonded to a heat activated polyurethane adhesive. The reflective surface is protected by a white paper liner for ease in handling prior to lamination. A printed clear plastic liner protects the adhesive side and must be removed before lamination.

#### Retroreflective Performance

The coefficient of retroreflection ( $R_A$ ) is measured by test methods traceable to either of the following retroreflective intensity testing procedures:

ASTM E809 and E810 ( $R_A$ )

CIE 54: 1982 ( $R'$ )

The  $R_A$  values were measured at the listed specific entrance and observation angles.

| Entrance angle | Observation angle | Typical $R_A$ | Minimum $R_A$ |
|----------------|-------------------|---------------|---------------|
| -4.0°          | 0.2°              | 100           | 60            |
| +5.0°          | 0.33°             | 70            | 45            |

#### Color

| Product | Daytime Color | Reflected Color |
|---------|---------------|-----------------|
| 8765    | White         | White           |

#### Physical Performance

Scotchlite reflective material - 8765 white transfer film will maintain a minimum  $R_A$  of 20 after exposure to the following performance tests:

Abrasion: . . . . .EN 530 Method 2  
5000 cycles

Flexing: . . . . .ISO 7854 Method A  
7500 cycles

Cold Fold: . . . . .ISO 4675

Temperature Cycle: . . . . .12 hours @ (50±5)°C  
20 hours @ (-30±2)°C

Wash: . . . . .ISO 6330 Method 2A  
@ 60°C (25 cycles)

Dryclean: . . . . .ISO 3175 Method 9.1  
(25 cycles)

Wet Reflectivity: . . . . .EN 471 Annex A

#### Effective Performance Life

While use of 3M™ Scotchlite™ Reflective Material enhances visibility, no reflective material can guarantee absolute visibility, particularly in adverse weather conditions. Performance will vary depending upon actual use, exposure conditions and maintenance. Users should test reflective material to satisfy conformance to their own requirements.

#### Application Instructions

Whenever two or more pieces of Scotchlite reflective material - 8765 white transfer film are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime reflectivity.

**Cutting:** Die-cutting is recommended, although it can also be hand-cut or guillotined.

**Screen Printing (After lamination):** 3M™ Scotchlite™ Reflective Material - 8765 White Transfer Film offers good screen print adhesion. Choice of ink will depend on application and care instructions.

**Sublimation Printing (After lamination):** Scotchlite reflective material - 8765 white transfer film offers good ink adhesion and durability for sublimated colors and images. Recommended contact for sublimation information is Holt Mfg. (919) 227-5561. For further information contact your local 3M Technical Service representative.

**Heat Lamination:** Work on a flat surface where uniform heat and pressure can be applied. Avoid applying film over seams and stitches.

1. Remove plastic liner, exposing dry adhesive. Do not remove paper liner.
2. Place Scotchlite reflective material - 8765 white transfer film on fabric (substrate) adhesive side down and apply heat and pressure as described below. Place a non-stick slip sheet between the platen and laminating surface to prevent any excess adhesive transfer contamination.
3. Allow application to cool (room temperature) before removing the paper liner. Place application on a flat surface and remove the paper liner by lifting one corner and pulling (about 45° angle) in a continuous, smooth manner.

**Note:** Do not exceed lamination temperatures of 375°F (190°C) because the paper liner may become difficult to remove. If high temperatures are required for bond durability, follow lamination steps 1-3, and

then relaminate at the higher temperature (use a non-stick slip sheet to protect the application).

The following recommendation is a general guideline for **heat press lamination**. Other lamination methods such as roll to roll, heat fusing, and High Frequency (HF) welding can also be used. The proper temperature/pressure/time conditions must be tested for each fabric to assure adequate adhesion. Many fabrics can be used as lamination substrates, however, nylons and fabrics treated with a durable water repellent (DWR) finish are difficult to adhere to and are not recommended.

| Temperature              | Dwell Time    | Pressure                             |
|--------------------------|---------------|--------------------------------------|
| 325-375°F<br>(165-190°C) | 10-20 seconds | Firm<br>(30-40 psi<br>line pressure) |

#### Care and Maintenance Instructions

**Important:** Test each application according to appropriate care instructions required for the finished product. Actual life of Scotchlite reflective material - 8765 white transfer film depends on cleaning method and wear conditions.

**Wash:** Machine wash warm, 40°C (105°F)



**Bleach:** Only non-chlorine bleach when needed



**Dry:** Tumble dry low



**Iron:** Use cool iron, 150°C (300°F)



**Dryclean:** Dryclean, normal cycle



**Product Availability**

3M™ Scotchlite™ Reflective Material - 8765 White Transfer Film is available in rolls with the following standard widths and roll lengths:

| Unit   | Width    | Tolerance                         | Roll Length     |
|--------|----------|-----------------------------------|-----------------|
| inches | ≤ 6"     | ± 1/32"                           | 100 yd.         |
| inches | > 6"     | ± 1/16"                           | > 12" = 50 yd.  |
| mm     | ≤ 150 mm | ± 1 mm (std)<br>± .5 mm (special) | 100 m           |
| mm     | >150 mm  | ± 2 mm                            | > 300 mm = 50 m |

**Order and Product Information**

To order 3M™ Scotchlite™ Reflective Material Products contact 3M Personal Safety Products Department Customer Service at 800-328-7098 Ext. 2.

**Storage and Shelf Life**

Store in a cool, dry area and use within one year after date of receipt. Store roll in original shipping carton. Return partially used rolls to the carton or suspend horizontally through the core. Cut sheets should be stored flat.

**Important Notice to Purchaser:**

3M makes the following limited warranty in place of any others, express or implied, including any implied warranties of MERCHANTABILITY or fitness for a particular purpose or any implied warranty commonly found in the industry: 3M shall replace or, at its option, refund the price paid for any 3M™ Scotchlite™ Reflective Material or other 3M reflective products ("Products") which at the time of shipment to 3M's purchaser do not meet 3M's published Product specifications.

Because of the unlimited variety of potential applications for Products, BEFORE production use, the converter or end product manufacturer must determine that the Products are suitable for the intended use and are compatible with other component materials. Purchaser is solely responsible for determining the proper amount and placement of Products. While reflective Products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions. **Neither 3M nor any 3M authorized converter shall be liable for any incidental, special, or consequential damages relating to the use or inability to use the Products regardless of legal theory asserted.**



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*10% post-consumer waste paper*

Printed in the USA.  
© 3M 1998 75-0500-2802-8