

Technical Data Sheet

3M™ Scotchlite™ Reflective Material Series 9500 Fire Coat Trim

Description

3M™ Scotchlite™ Reflective Material – Series 9500 Fire Coat Trim is designed to enhance the visibility of the wearer in low-light conditions, especially at nighttime, when illuminated by a light source such as automobile headlights. The reflective surface is composed of wide angle, exposed retroreflective lenses integrally centered on a fluorescent background color and bonded with a special polymer to a flame resistant, durable Aramid backing. Scotchlite reflective material – series 9500 fire coat trim has “3M” imaged on its silver surface.

Retroreflective Performance

The coefficient of retroreflection (R_A , in cd/lux/m²) is measured by methods traceable to either of the following retroreflective intensity testing procedures:

ASTM E809-02 and E810-03 (R_A)

CIE 54.2:2001 (R')

The R_A values were measured at the listed specific entrance and observation angles. Retroreflective performance data was generated by 3M and is based on testing new product. Use, wear, laundering, and environmental conditions will affect performance. Please contact your 3M representative for proposed product specifications.

| 3M™ Scotchlite™ Reflective Material | | |
|-------------------------------------|-------------------|-----------------------|
| Entrance Angle | Observation Angle | Initial Average R_A |
| +5.0° | 0.2° | 500 |

Color

| 3M™ Scotchlite™ Reflective Material | | |
|-------------------------------------|--|-----------------|
| Product Number | Daytime Color | Reflected Color |
| 9586 | Fluorescent red-orange with silver stripe | White |
| 9587 | Fluorescent lime-yellow with silver stripe | White |

Physical Performance

3M™ Scotchlite™ Reflective Material – Series 9500 Fire Coat Trim is certified and will meet or exceed the following performance specifications¹:

| 3M™ Scotchlite™ Reflective Material | |
|---|--|
| Physical Performance | Test Method, Certification |
| Retroreflectivity: (Initial) $R_A \geq 100$ | NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |
| Fluorescence Cap $Y \geq 70$ | NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |
| Abrasion: $R_A \geq 100$ | EN 530 Method 2, 5000 cycles |
| Flexing: $R_A \geq 100$ | ISO 7854 Method A, 7500 cycles |
| Cold Fold: $R_A \geq 100$ | ISO 4675, -20°C (-4°F) |
| Temperature Cycle: $R_A \geq 100$ | 12 hours @ 50° C (122°F), 20 hours @ -30° C (-22°F) |
| Wash: $R_A \geq 100$ | ISO 6330 Method 2A, 50 cycles @ 60° C (140°F) |
| Dry Clean: $R_A \geq 100$ | ISO 3175-2 Method 9.1, 30 cycles |
| Wet Reflectivity: $R_A \geq 100$ | NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |
| Flame Resistance | ASTM D 6413, 4" char length, 2 seconds after flame NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |
| Heat Resistance | ISO 17493, 5 minutes @ 260°C (500°F) NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |
| Convective Heat $R_A \geq 100$ | 10 minutes @ 140°C (285°F) NFPA 1971, 2007 Edition; NFPA 1977, 2011 Edition; NFPA 1951, 2007 Edition |

¹While NFPA 1951-2007 no longer specifies or establishes requirements for the use of high visibility materials, the authority having jurisdiction should conduct a risk assessment and determine the level of visibility required in an ensemble for technical rescue incidents based on the anticipated use of such garments.

Performance

While the 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

Note: Whenever two or more pieces of Scotchlite reflective material – series 9500 fire coat trim are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime or low light reflectivity. Medium to heavy weight fabrics are recommended for application. Stretchable materials are not recommended for application.

Cutting: Scotchlite reflective material – series 9500 fire coat trim can be die-cut, hand-cut or guillotined.

Sewing: Sew in place using a lockstitch with no more than 12 stitches per inch (2.54 cm) and not less than 5/64" (2 mm) from the edge of the reflective trim. Use appropriate thread for flame resistant applications.

Handling Precautions: Scotchlite reflective material – series 9500 fire coat trim contains an aluminum layer as part of its construction. Blemishing of this aluminum layer can occur if the front surface of the product has direct contact from hands during application and is then exposed to hot and humid conditions, greater than 26.7°C (80°F) and greater than 70% relative humidity, for a period of weeks. These blemishes do not affect performance of the product.

Care and Maintenance Instructions

Important: It is critical to follow appropriate cleaning procedures when the trim is applied to firefighting turnout clothing. Failure to follow care instructions will shorten the useful life of the trim. Refer to NFPA 1851 Standard on Selection, Care and maintenance of Structural Fire Fighting Protective Ensembles.

Care label recommendations:

Do not presoak

Wash: Machine wash hot, 60°C (140°F), pH between 6 and 10.5



Bleach: Do not bleach



Dry: Tumble dry low. On fire garments, air dry away from direct sunlight



Iron: Use cool iron, 110°C (230°F)



Dry-clean: Dry-clean, perchloroethylene



Additional guidelines to reduce the possibility of silver stripe fading: After fighting fires with dry chemicals or fires that involve burning chlorine or PVC, it is important to thoroughly clean and dry the turnout gear to prevent the effects of corrosion on the trim. If not cleaned thoroughly, residues from dry chemicals and burning PVC may cause fading trim over time. The cumulative effects of long term exposure to corrosive contaminants may not show up until after the garment is laundered or is exposed to high humidity environments. See technical bulletin “Care guidelines to reduce the possibility of silver stripe fading on 3M™ Scotchlite™ Reflective Material – Series 9500 Fire Coat Trim.” for additional information.

Product Availability

Scotchlite reflective material – series 9500 fire coat trim is available in rolls with the following standard widths and roll lengths:

| 3M™ Scotchlite™ Reflective Material | | | |
|--------------------------------------|------------------------|----------------------------|----------------------|
| Trim Width | Reflective Strip Width | Centering Tolerance | Standard Roll Length |
| 50.8 mm ± 0.8 mm (2.0 ± 0.03 in.) | 19 mm (0.75 in.) | ± 1.6 mm (± 0.0625 in.) | 100 m (109.4 yd.) |
| 76.2 mm ± 0.8 mm (3.0 ± 0.03 in.) | 25.4 mm (1.0 in.) | ± 1.6 mm (± 0.0625 in.) | 100 m (109.4 yd.) |

Order and Product Information

To order 3M™ Scotchlite™ Reflective Material Products, contact 3M Customer Service at 800-328-7098.

Storage and Shelf Life

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



Important Notice

WARRANTY, LIMITED REMEDY AND DISCLAIMER: 3M warrants that 3M™ Scotchlite™ Reflective Material that is stored, maintained and used in accordance with 3M's written instructions will meet the applicable 3M product specifications. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If any Scotchlite reflective material does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

LIMITATION OF LIABILITY: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract or strict liability.

PRODUCT USE: Because of the variety of factors that can affect the use and performance of Scotchlite reflective material, user is solely responsible for evaluating the product and determining whether it is fit for a particular purpose and suitable for user's method of application. User is solely responsible for determining the proper amount and placement of the product. While reflective products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions. 3M may change the product, specification and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product.



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