

3M Scotchlite™

Reflective Material

Series 9500

Fire Coat Trim

Technical Data Sheet

We make people visible

Technical Data Sheet

March 2004

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. The reflective surface is composed of wide angle, exposed retroreflective lenses integrally centered with the fluorescent color and bonded with a special polymer layer to an aramid backing.

Retroreflective Performance

The coefficient of retroreflection (R_A , in cd/lux/m^2) 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°	500	330
+5.0°	0.33°	330	250

Color

Product Number	Daytime Color	Reflected Color
9586	Fluorescent red-orange with silver stripe	White
9587	Fluorescent lime-yellow silver stripe	White

Physical Performance

Scotchlite reflective material - series 9500 fire coat trim meets or exceeds the following performance tests for trim as specified in NFPA 1971 Standard, 2000 Edition:

Retroreflectivity:NFPA 1971, 2000 Edition,
(Initial) Sections 6-46 and 5-1.22
ANSI/ISEA 107-1999
Level 2, Section 8.3.

Fluorescence:NFPA 1971, 2000 Edition,
Sections 6-46 and 5-1.22.

Abrasion:EN 530 Method 2
($R_A \geq 100$) 5000 cycles

Flexing:ISO 7854 Method A
($R_A \geq 100$) 7500 cycles

Cold Fold:ISO 4675 (-20°C)
($R_A \geq 100$)



Physical Performance, continued

- Temperature Cycle: 12 hours @ (50±2)°C
(R_A ≥ 100) 20 hours @ (-30±2)°C
- Wash: ISO 6330 Method 2A
(R_A ≥ 100) 50 cycles @ 60°C (140°F)
- Dry-clean: ISO 3175 Method 9.1
(R_A ≥ 100) 30 cycles
- Wet Reflectivity: ANSI/ISEA 107-1999 Annex A
(R_A ≥ 100) EN 471 Annex A
NFPA 1971, 2000 Edition
Section 6-46 and 5-1.22.
- Flame Resistance: NFPA 1971, 2000 Edition,
Sections 5-1.4 and 6-2.
(Federal Test Method Standard 191A,
Method 5903. 1: 4" char length,
2 seconds after flame)
- Heat Resistance: NFPA 1971, 2000 Edition,
Sections 5-1.6, 6-6, and 6-46.
- Convective Heat: NFPA 1971, 2000 Edition,
Sections 6-1.5, 6-6 and 6-46.

Performance

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 3M™ Scotchlite™ Reflective Material - 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 stripe alignment. 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 hand-cut, die-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.


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, 2001 Edition.


Do Not Presoak

 **Wash:**
Machine wash warm,
60°C (140°F)

 **Bleach:**
Do not bleach

 **Dry:**
Tumble dry low. On fire
garments: hang to air dry
away from direct sunlight.

 **Iron:**
Use cool iron, 110°C (230°F)

 **Dry-clean:**
Dry-clean, Perchloroethylene

Product Availability

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

Trim Width	Reflective Strip Width	Centering Tolerance	(Total)	Standard Roll Length
2" ± 1/32"	3/4"	± 1/16"	(1/8")	100 yd.
3" ± 1/32"	1"	± 1/16"	(1/8")	100 yd.

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

Important Notice to User

LIMITED WARRANTY: In the event any Thinsulate™ Insulation, or 3M™ Scotchlite™ Reflective Material is found to be defective in material, workmanship, or not in conformation with any express warranty, 3M's only obligation and your exclusive remedy shall be to replace or refund the purchase price, at 3M's option, of such product upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

EXCLUSIONS TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

LIMITATION OF LIABILITY: Except as provided above, 3M shall not be liable in contract or tort for any loss or damage, whether direct, indirect, incidental, special or consequential, (including, without limitation, lost profits, goodwill and business opportunity) arising out of the sale, use or misuse of the product, or the user's inability to use the product. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.**

Because of the unlimited variety of potential applications for these products, BEFORE production use, the user (which may be a product designer, product specifier, converter or end product manufacturer or others) must determine that the Products are suitable for the intended use and are compatible with other component materials. User 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.

3M may change the product, specifications and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product. Thinsulate insulation is made within strict dimensional specifications. However, it is possible for the rolls to shift, shrink, or otherwise change dimensions to a maximum of $\pm 4\%$ during handling or shipment.



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3M Occupational Health and
Environmental Safety Division**

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10% post-consumer waste paper

Printed in the USA.
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75-0500-4757-2 (14.2)ii