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Product Bulletin

Reflexite[®] V52 Diamond Plate DOT Conspicuity Material



The Product

Reflexite V52 Diamond Plate DOT Conspicuity Material is a tough weather- and solvent resistant product designed for rugged outdoor use on the sides and rear of trucks, trailers, utility vehicles and all types of work trucks and mobile industrial equipment.

Reflexite V52 Diamond Plate DOT Conspicuity Material is provided with the DOT-C2 certification mark as per NHTSA 49CFR571.108.

Construction

The sheeting is composed of cube corner (microprism) retroreflective elements integrally bonded to a flexible, smooth-surfaced, tough and weather-resistant UV stabilized polymeric film. The prism surfaces are coated with a vacuum deposition of aluminum to provide a mirror surface to the prism facets. The resulting tape is not more than 0.008 inch thick and comes with an aggressive high-tack pressure sensitive adhesive.

Colors

Reflexite V52 Diamond Plate DOT Conspicuity Material is available in an alternating red and white striped pattern with the DOT-C2 certification mark. It is also available in solid red and solid white without the DOT-C2 certification mark. The Diamond Plate pattern provides brighter more vivid daytime colors than previously available in metalized microprism sheeting.

The colors conform to the requirements in Table 1 when tested in accordance with ASTM practices E308 and E1164 and standards E1347 and E1349. The measured values are the average of eight readings. The test sample is rotated 45° about its own axis after each reading.

Reflectivity

Reflexite V52 Diamond Plate DOT Conspicuity Material shall meet or exceed the minimum coefficient of retroreflection shown in Table 2. The sheeting shall be measured in accordance with ASTM E810. Rotation angles of 0° and 90° are measured and averaged.

TABLE 1
 COLOR SPECIFICATION LIMITS
 Chromaticity Coordinates*

| Color | 1 | | 2 | | 3 | | 4 | | Reflectance Y | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|------|
| | x | y | x | y | x | Y | x | y | Min. | Max. |
| White | 0.303 | 0.300 | 0.368 | 0.366 | 0.340 | 0.393 | 0.274 | 0.329 | 27.0 | ---- |
| Red | 0.648 | 0.351 | 0.735 | 0.265 | 0.629 | 0.281 | 0.565 | 0.346 | 2.5 | 12.0 |

* The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 Standard Colorimetric System measured with CIE Standard Illuminant D₆₅.

TABLE 2
 COEFFICIENT OF RETROREFLECTION
 (Candelas/Lux/Square Meter)

| Observation Angle | Entrance Angle | White | Red |
|-------------------|----------------|-------|-----|
| .2° | -4° | 460 | 75 |
| .2° | 30° | 250 | 60 |
| .5° | -4° | 100 | 25 |
| .5° | 30° | 65 | 15 |

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Adhesive

The adhesive is protected by a release liner that shall be removed by peeling, without soaking in water or other solvents. The adhesive produces a bond such that a one-inch wide strip shall support a 1-3/4 pound weight for five minutes without the strip peeling a distance of more than two inches when applied to a smooth aluminum panel as specified in the ASTM D4956 adhesion test.

Impact Resistance

Following application to a smooth surface aluminum rectangle, 0.020 inch by 3 inch by 6 inch, the specimen is conditioned for 24 hours at 72°F and 50% relative humidity. The sheeting shall show no cracking when the face of the panel is subjected to an impact of a two pound weight with a 5/8 inch rounded tip dropped from a 100 inch pound setting on a Gardner variable impact tester, IG-1120.

Shrinkage

A 9 inch by 9 inch specimen of the sheeting with liner is conditioned a minimum of one hour at 72°F and 50% relative humidity. The liner is then removed and the specimen is placed on a flat surface with the adhesive side up. Ten minutes after the liner is removed and again after 24 hours, the specimen is measured to determine the amount of dimensional change. The specimen will not shrink in any dimension more than 1/32 inch in 10 minutes and 1/8 inch in 24 hours.

Flexibility

The sheeting is conditioned for 24 hours at 72°F and 50% relative humidity. The release liner is removed and the sheeting is sufficiently flexible to show no cracking when bent in one second's time around a 1/8-inch diameter mandrel with the adhesive contacting the mandrel.

Solvent Resistance

Reflexite V52 Diamond Plate DOT Conspicuity Material meets the requirements of LS-300C solvent resistance, section 3.6.7, when tested as specified in Table VI, test method 4.4.6.

Specular Gloss

The sheeting shall have a specular gloss of not less than 40 when tested in accordance with ASTM method D523 at an angle of 85°.

Application

The recommended application temperature to achieve best results is 65°F (18°C) or above.

The adhesive on Reflexite V52 Diamond Plate DOT Conspicuity Material has been formulated to bond at temperatures as low as 40°F (4.4°C). When bonding at low temperatures the surface should be free from condensation as well as any contaminants.

Durability

5 years

Warranty


5 year limited warranty
Contact your Reflexite representative for details.

Reflexite Americas

315 South Street
New Britain, CT 06051-3719
860 223-9297, fax 860 832-9267
www.reflexiteamericas.com

Reflexite Canada, Inc.

6790 Kitimat Road, Unit 18
Mississauga, Ontario
L5N 5L9 Canada
905 821-3991, fax 905 821-8330

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Technical Publication RA-2227 Rev. 0, Pub. 2007 © 2007,
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