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Safety
Identification
Products

REFLECTIVE TAPE

I. Description

Harris flexible Ultralite Grade II is a flexible, glass beaded lens retroreflective sheeting that renders retroreflectivity at night. It is designed for use in delineators and is highly resistant against the extremes of hot, cold, dry and humid weathering conditions. Flexible ULG II is pliable and will not crack when bent. Flexible ULG II will keep it's flexibility even at low temperatures.

2. Properties

2-1 Reflective Intensity *(minimum candelas per foot-candle per square foot)*

O.A.	E.A.	White CS512	Yellow CS504	Orange CS507
0.2°	-4°	250	170	100
0.2°	30°	150	100	60
0.2°	-4°	95	62	30
0.2°	30°	65	45	25

O.A. = Observation Angle

E.A. = Entrance Angle

2-2 Color Limits *Chromaticity Coordinates / Reflective Limits*

Color - Product #	1		2		3		4		Y(%)	
	x	y	x	y	x	y	x	y	Min.	Max.
White - CS512	.303	.287	.368	.353	.340	.380	.274	.316	27	-
Yellow - CS504	.498	.412	.557	.442	.479	.520	.438	.472	15	45
Orange - CS507	.550	.360	.630	.370	.581	.418	.516	.394	14	30

2-3 Technical Data *Physical Properties of Flexible ULG II Sheeting*

Property	Test Method	Results
Average Thickness	Micrometer	295 mm
Average Gloss	Glossometer 85°	40
Tensile Strength	Instron Tester (30cm/min)	7 kgf/inch (69N/inch)
Elongation	Instron Tester (30 cm/min)	200fi

2-4 Solvent Resistance

Solvent	Time	Appearance
Xylene	1 min	Good
MIBK	1 min.	Good
Mineral Spirit	10 min	Good

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2-5 Adhesive

Item	Type of Application
CS512	For aluminum sheet, poly-olefin series plastics

3. Durability

The Retroreflective sheeting, processed and applied to approved substrates in accordance with the manufacturer's instructions, Shall have a performance life of 3 years. The retroreflective sheeting shall be considered as performing satisfactorily if the sign has not deteriorated, due to natural causes, to the extent that the sign is ineffective for its intended purpose when viewed from the vehicle.

4. Color Matching

When it is necessary to use more than one sheet of sheeting in one sign, care should be taken to use sheeting cut from the same roll. If, however, sheeting from different rolls are used, care must be taken to ensure that the daytime and nighttime colors of the sheeting used are matched. Color matching should be done in daylight away from colored walls or other objects that can affect the color of the sheeting. To match night color, examine the sheeting in a dark room or area with a light directed on the surface. The light source (flashlight, spotlight, etc.) should be held at eye level and observation should take place from behind the light, as far away from the sheeting as practical.

5. General Characteristics and Packing

This product is available in assorted widths and lengths. This type of reflective sheeting has a high-tack pressure-sensitive adhesive that will bond to approved substrates. The adhesive is protected with an easily removable liner. Before sheeting application, user should either confirm sheeting and substrate compatible by his/her own testing or contact the technical representative of Harris Industries.

6. Maintenance

A mixture of a mild detergent in water is recommended for cleaning the signs. The detergent must be non-abrasive, free of any strong aromatic solvents or alcohols and chemically neutral. Rinse thoroughly.

7. Storage and Shelf Life

All reflective sheeting must be stored in a cool, dry and clean area. Avoid exposure to direct sunlight and storage in excessively humid areas. The shelf life of the sheeting is 12 months after delivery.

8. Reliability of Information

All recommendations and technical information contained herein are based on experiences and tests, which the manufacturer believes to be reliable, but their accuracy and completeness are not warranted. The user is cautioned to make his/her own tests to determine the fitness of a particular product for the intended application.

9. Warranty

Harris Industries products are warranted to be free from defects in materials and workmanship at the time of their sale. Except as herein above expressly warranted, Harris Brand products are sold without any warranty whatsoever, including warranties of

merchantability or fitness for a particular purpose. The sole remedy for failure of Harris Brand products to conform to said warranty is the replacement of the defective products; neither the manufacturer nor the seller shall be liable for any loss, damage or injury, direct or indirect, consequential or incidental, arising from the use or inability to use said products.

10. Warning

Failure to comply with explicit instructions in this bulleting will result in voiding all the warranties express or implied for use of this product. If retroreflective sheeting is to be applied to the surface other than conventional sign blank materials, prospective users should contact technical representatives of Harris Industries for advice before such application.