

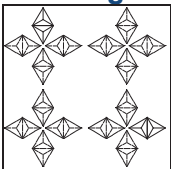
## Description

ORALITE® VC 310 Durabright® is a tough weather resistant product designed for rugged outdoor use for livery applications on emergency services vehicles. The material is die cuttable and plotter cuttable, and easy to apply onto smooth painted or unpainted vehicle surfaces. The material does not need edge sealing. It is not recommended to screen print this material. If screen printing is required, it is recommended to use ORALITE® VC 309 instead.

## Product Construction

ORALITE® VC 310 Durabright® is composed of cube corner (microprism) retroreflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilised polymeric film. The prism surfaces are coated with a vacuum deposition of aluminium to provide a mirror surface to the prism facets. The resulting material is not more than 0,20 mm thick, and comes with an aggressive high-tack pressure sensitive adhesive. The product is single layer, with no need for edge sealing.

## Film Logo Pattern



## Colour

ORALITE® VC 310 Durabright® is available in silver, yellow, red, blue and green. The colour shall be located in the area defined by the chromaticity coordinates and luminance factor provided in Table 2, when measured in accordance with the provisions of CIE No.15.2. The four pairs of coordinates determine the acceptable colour when measured with standard illuminant D<sub>65</sub> using a Hunter LabScan.

## Retroreflectivity

Typical values for the coefficient of retroreflection (R') for ORALITE® VC 310 Durabright® are shown in when illuminated with CIE standard illuminant A and measured with the provisions of CIE no. 54. The values are an average of rotation angles 0° and 90°.

## Impact Resistance

ORALITE® VC 310 Durabright® sheeting shall show no signs of cracking or delamination outside the actual area of impact when it is subjected to an impact of 1,13 N·m generated by a 0,91 kg weight with a 16 mm rounded tip, as per ASTM D4956.

## Adhesive

The adhesive is protected by a release liner, which shall be removed by peeling, without soaking in water or other solvents. A 25 mm strip shall provide a bond such that it shall support an 800 g weight for 5 minutes without the strip peeling for a distance of more than 50 mm when applied to a smooth aluminium surface as specified in the ASTM 4956 adhesion test.

## Shrinkage

A 230 mm square specimen of the sheeting with liner shall be conditioned a minimum of 1 hour at 22° C and 50% RH. The liner is then removed and the specimen is placed on a flat surface with the adhesive side up. 10 minutes after the liner is removed and again after 24 hours, then specimen is measured to determine the amount of dimensional change. The specimen must not shrink in any dimension more than 0,8 mm in 10 minutes and 3,1 mm in 24 hours.

## Flexibility

The sheeting is conditioned for 24 hours at 22° C and 50% RH. The release liner is removed and the sheeting must be sufficiently flexible to show no cracking when bent in one second's time around a 3,1 mm diameter mandrel with the adhesive contacting the mandrel.

### Application Instructions

Material must be applied when the film and substrate temperature is between 15° C and 38° C to assure proper adhesive bonding. Surfaces must be cleaned for grease, oil and dirt. Use a clean towel and Isopropyl alcohol or similar to wipe the surface before application. If any air bubbles are trapped, use a pin to puncture the bubble and squeegee to push the air towards the pin hole.

Please contact ORAFOL for complete application instructions.

### Shelf Life

The sheeting must be used within 1 year from the shipment date. All rolls including partially used rolls should be stored in original packaging, tightly wound. Store in a clean and dry area, away from direct sunlight. Store at 20° C and 50% relative humidity.

### Warranty

ORALITE® VC 310 Durabright® has a seven year warranty. Please contact ORAFOL for full details.

### ASTM D4956

VC310 meets the mandatory requirements of ASTM D4956 Type V sheeting.

**Table 1 - Retroreflectivity**

Colour	Observation / Entrance Angle (β)					
	0,10° / -4°	0,10° / +30°	0,20° / -4°	0,20° / +30°	0,50° / -4°	0,50° / +30°
Silver	1200	680	700	400	160	75
Yellow	800	450	470	270	110	51
Red	200	115	120	72	28	13
Green	200	115	120	72	28	13
Blue	95	50	56	32	13	6

All values have units of cd/lux/m<sup>2</sup>.

**Table 2 - Colour Specification Limits (Daytime)**

Colour	Chromaticity Coordinates*									
	1		2		3		4		Y%	
	x	y	x	y	x	y	x	y	Min.	Max.
Silver	0,303	0,287	0,368	0,353	0,340	0,380	0,274	0,316	15,0	----
Yellow	0,498	0,412	0,557	0,442	0,479	0,520	0,438	0,472	1,0	30,0
Red	0,613	0,297	0,708	0,292	0,636	0,364	0,558	0,352	2,5	11,0
Green	0,030	0,380	0,166	0,346	0,286	0,426	0,201	0,776	2,5	11,0
Blue	0,114	0,030	0,244	0,202	0,190	0,247	0,066	0,208	1,0	10,0

\*) The four pairs of chromaticity coordinates determine the acceptable chromaticity when measured with standard illuminant D65

### IMPORTANT NOTICE

All ORALITE® products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning ORALITE® products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of ORALITE® products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. All specifications are subject to change without prior notice.

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