Description
ORALITE® VC 70-01+ is a tough weather resistant product designed for application in an automated production process of ECE 70 Amendment 1 approved rear marker plates. The material does not need edge sealing.

Product Construction
ORALITE® VC 70-01+ is composed of cube corner (microprism) retroreflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilised polymeric film. The reflective material is welded to a UV stabilized polymeric film to protect the prism surfaces from dirt and moisture. 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. It is single layer, with no need for edge sealing.

Product Approval
ORALITE® VC 70-01+ conforms to Regulation ECE 70 Amendment 1 when applied in the above orientation.

Colour
ORALITE® VC 70-01+ is available in yellow and red. 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 and illuminated with the CIE standard illuminant D_{65} at an angle of 45° to the normal (45° / 0° geometry). The measured value shall be the average of 8 readings. The test sample shall be rotated 45 degrees.

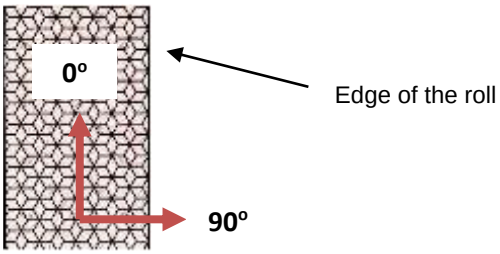
The retroreflected colour (nighttime colour), when illuminated with CIE standard illuminant A at an observation angle of 20' and entrance angles of β_1 = +/- 5°, and β_2 = 0° shall be located within the area defined by the chromaticity coordinates in Table 3.

Retroreflectivity
When illuminated with CIE standard illuminant A and measured with the provisions of CIE No. 54, the coefficient of retroreflection for ORALITE® VC 70-01+ shall be not less than the values in Table 1.

Adhesive
The adhesive is especially formulated to adhere to a variety of surfaces: fibreglass, aluminium and painted steel in particular. The adhesive is protected by a release liner, which shall be removed by peeling, without soaking in water or other solvents. The adhesive produces a bond such that a 25 mm strip shall require a force of at least 10N (2,25 pounds), at a speed of 300 mm per minute, to be removed from the substrate after a 20 minutes dwell. ORALITE® VC 70-01+ may be used on stainless steel when used with the correct pressure sensitive adhesive, which should be requested when ordering.

Application
For the best reflectivity performance and to ensure compliance to ECE 70 Amendment 1, ORALITE® VC 70-01+ should be applied at the 0° or 90° orientation. The orientation can be identified by the printing pattern on the film, as shown below. The material should not be applied at an angle.

How to identify the orientation:



Application Instructions

Materials must be applied with the air and surface temperature between 10° C and 38° C to ensure proper adhesive bonding. Surfaces must be cleaned of all 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 a 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 70-01+ has a ten year warranty. Please contact ORAFOL for full details.

Table 1
Retroreflectivity

Observation Angle		Entrance Angle (β)			
	Beta 1 (β_1)	0°	0°	0°	0°
20' (0,33°)	Beta 2 (β_2)	5°	30°	40°	60°
Yellow	R'	300	180	75	10
Red	R'	10	7	4	-

All values have units of cd/lux/m^2.

Table 2
Colour Specification Limits (Daytime)

Colour	Chromaticity Coordinates*								Y%
	1		2		3		4		
	x	y	x	y	x	y	x	y	
Yellow	0,545	0,454	0,487	0,423	0,427	0,483	0,465	0,534	≥ 0,16
Red	0,690	0,310	0,595	0,315	0,569	0,341	0,655	0,345	≥ 0,03

*) The four pairs of chromaticity coordinates determine the acceptable chromaticity when measured with standard illuminant D_{65}.

Table 3
Colour Specification Limits (Night-time)

Colour	Chromaticity Coordinates*							
	1		2		3		4	
	x	y	x	y	x	y	x	y
Yellow	0,585	0,385	0,610	0,390	0,520	0,480	0,505	0,465
Red	0,720	0,258	0,735	0,265	0,665	0,335	0,643	0,335

*) The four pairs of chromaticity coordinates determine the acceptable chromaticity when measured with standard illuminant D_{65}.

IMPORTANT NOTE

All ORAFOL products are subject to careful quality control throughout the entire manufacturing process, and it is ensured that they are of merchantable quality and free from manufacturing defects. The information published is based on our analyses and studies and does not constitute any warranted properties or any agreement as to quality. Due to the diverse possibilities of use of ORAFOL products and the constant development of new applications, the buyer should carefully consider the suitability and performance of the product for the respective purpose; it bears all risks associated with such use. No warranty is given for purposes other than those listed in the Technical Data Sheet or for applications that are not processed in accordance with ORAFOL's processing instructions.

The durability of the end product depends upon a variety of factors, including but not limited to substrate selection and preparation, compliance with the recommended application guidelines, geographical area, exposure conditions and maintenance of the ORAFOL material and of the end product. Product defects caused by the substrate or improper surface preparation do not lie within ORAFOL’s sphere of responsibility.

When using ORAFOL products, the pertinent national regulations are to be observed. ORAFOL recommends that you obtain the current stipulations from your local authority and ensure that the product meets these requirements. Please contact ORAFOL for further information.