ORALITE® 5951
High Intensity Prismatic Container Marking Grade

Product Description

ORALITE® retroreflective film series 5951 High Intensity Prismatic Container Marking Grade is a flexible, highly reflective, weatherproof, self-adhesive film with excellent corrosion and solvent resistance. The product was specifically developed for permanent and exchangeable containers on public roads. The film is equipped with an adhesive that ensures permanent adhesion to painted surfaces. When used in accordance with the recommended application instructions, full functionality is guaranteed for a period of up to five years.
The products retroreflective system consists of sealed cells of air backed microprisms, using total internal reflection. The distinct shape of the sealing pattern identifies the machine direction and the manufacturer of the sheeting shown in Figure 1.

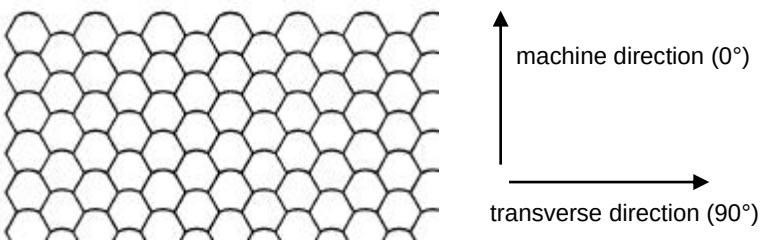
Retroreflectivity

ORALITE® 5951 exceeds the minimum performance requirements of DIN 67520:2011-11 (RA2; design C) for white and red colors and ASTM D4956-11a (Type IV sheeting). The required minimum retroreflection values, shown in tables 1 and 2, are complied with when measured in accordance with the corresponding specifications using CIE standard illuminant A, and the provisions of CIE No.54.2.

Color

ORALITE® 5951 sheeting is available as rolls in white (010) & red (030) alternating stripes. The sheeting conforms to the daytime color requirements in tables 3 and 4 when measured in accordance with the corresponding specifications, the provisions of CIE No. 15.2, and shall comply with the specifications of DIN 6171: 2003-08 & ASTM D4956-11a.

Figure 1 - Sealing pattern and application directions



Adhesive

The adhesive consists of a solvent polyacrylate, permanent pressure sensitive adhesive specially formulated for the application to painted surfaces. The adhesive is protected by a release liner made of polypropylene film, silicone coated on one side, 0.075 mm [0.003”] thickness.

Application/Processing

ORALITE® 5951 was specifically developed for permanent and exchangeable containers on public roads. Surfaces to which the material will be applied must be thoroughly cleaned from dust, grease or any contamination which could affect the adhesion of the material. Freshly lacquered or painted surfaces should be completely cured. The compatibility of selected lacquers and paints should be tested by the user, prior to application of the material. For other applications the user is fully responsible for evaluating the suitability of the product, and for any risks associated with that use.

Please refer to the Practical Information #4.3 published by ORAFOL for full instructions or contact your ORAFOL Reflective Solutions Division representative for advice relating to the above.

Warranty

No warranty is given for purposes other than those listed in the Technical Datasheet or which are not processed according to ORAFOL's processing and handling instructions. The durability of the sheeting will depend on a variety of factors, including but not limited to substrate selection and preparation, compliance with recommended application guidelines, geographic area, exposure conditions and maintenance of the product. Failures caused by the substrate or improper surface preparations are not the responsibility of ORAFOL. Please refer to the Warranty document published by ORAFOL for detailed information.

Note: All ORALITE® products are manufactured within an ISO 9001:2015 controlled manufacturing environment and batch traceability is possible on the basis of the roll number.

Product Data

Retroreflectivity for new sheeting (cd/lx/m^2) as per DIN 67520:2011-11 & ASTM D4956-11a

Table 1 – Specific coefficient of retroreflection (DIN 67520:2008-11 RA2; design C)									
Observation angle	**0.2°**			**0.33°**			**2°**		
Entrance angle	**5°**	**30°**	**40°**	**5°**	**30°**	**40°**	**5°**	**30°**	**40°**
white	250	150	110	180	100	95	5	2.5	1.5
red	45	25	15	25	14	13	0.8	0.4	0.3

Table 2 – Specific coefficient of retroreflection (ASTM D4956-11a Type IV sheeting)						
Observation angle	**0.1°**		**0.2°**		**0.5°**	
Entrance angle	**-4°**	**30°**	**-4°**	**30°**	**-4°**	**30°**
white	500	240	360	170	150	72
red	90	42	65	30	27	13

Daytime color specification limits for new sheeting:

Table 3 – Chromaticity coordinates (DIN 6171: 2003-08)									
Colors	**1**		**2**		**3**		**4**		**Luminance Factor β**
	X	**y**	**X**	**y**	**X**	**y**	**X**	**y**	
white	0.305	0.315	0.335	0.345	0.325	0.355	0.295	0.325	> 0.27
red	0.735	0.265	0.700	0.250	0.610	0.340	0.660	0.340	≥ 0.03

Table 4 – Chromaticity coordinates (ASTM D4956)									
Colors	**1**		**2**		**3**		**4**		**Luminance Factor (Y %)**
	X	**y**	**X**	**y**	**X**	**y**	**X**	**y**	
white	0.303	0.300	0.368	0.366	0.340	0.393	0.274	0.329	> 27
red	0.648	0.351	0.735	0.265	0.629	0.281	0.565	0.346	2.5 ≤ Y ≤ 15

Physical and Chemical Properties

Thickness* (without protective paper and adhesive)	0.400 mm (16 mils)
Temperature resistance	adhered to aluminium, -40° C to +82° C (-40° F to 180° F)
Resistance to cleaning agents	adhered to aluminium, 8h in solution (0.5% household cleaning agents) at room temperature and 65° C (150° F), no variation
Adhesive power* (FINAT-TM1 after 24h, stainless steel)	15 N/25 mm (1 inch)
Shelf life**	1 year
Application temperature	> +10° C (50° F)
Service life by specialist application*** under vertical outdoor exposure	5 years

* average ** in original packaging, at 20°C and 50% relative humidity *** standard central European climate

Note: Values stated in SI units are to be regarded as standard. The values in parentheses are conversions and shall not be considered as the standard, as these values maybe approximate.

IMPORTANT NOTICE

When using ORALITE® 5951 sheeting the relevant national specifications have to be complied with. ORAFOL recommends you obtain the current requirements from your local authority and ensure product conformance with such requirements. Please contact ORAFOL for further information.

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 that 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.

ORALITE® is a trademark of ORAFOL Europe GmbH.