

## Description

ORALITE® 5710 Engineer Grade Premium is a weatherproof, selfadhesive retroreflective film with an excellent corrosion and solvent resistance. The retroreflective system of the ORALITE® 5710 Engineer Grade Premium consists of catadioptric glass beads which are embedded in a transparent layer of plastic material (corresponds to class RA 1, design A, formerly Type I). The smooth surface shows a high scratch resistance and impact strength and a very good printability. ORALITE® 5710 Engineer Grade Premium contains an identification watermark.

The reflective data and colours at daylight comply with the international specifications for reflective materials of this class, such as EN 12899-1 (Europe), DIN 67520 and DIN 6171 (Germany), BS 873: Part 6 (Great Britain), NFP 98-520 (France), SN 640878 (Switzerland), ASTM D 4956 (US), JIS Z 9117 (Japan).

## Front Material

Alkyd resin.

## Release Paper

PE-coated silicone paper, 145 g/m<sup>2</sup>.

As the product and batch number are applied to the silicone-coated paper, all production parameters and raw materials can be completely traced back.

## Adhesive

Solvent polyacrylate, permanent, with an increased initial tack.

## Area of Use

ORALITE® 5710 Engineer Grade Premium was especially developed for the manufacture of traffic control and guidance signs, warning and information signs, and for reflective lettering, numbers and symbols, which are intended for long-term outdoor use. The ORALITE® 5710 Engineer Grade Premium has an adhesive with an excellent adhesion on metallic surfaces as aluminium and zinc coated steel plate. The material has an identification watermark. When using the ORALITE® 5710 Engineer Grade Premium, the particular national specifications have to be complied with.

## Printing Method

The use of ORALITE® 5010 and 5018 Screen Printing Ink is recommended. A transparent coating is not necessary.

## Certificate

BASt approval according to EN 12899-1, DIN 67520 and DIN 6171  
CE Declaration of Conformity according to EN 12899-1

### Product Data

Typical reflection data (measured according to DIN 67520, Part 1 and Part 2, state as manufactured)

Table 1 – Specific coefficient of retroreflection R' in cd/lx/m <sup>2</sup>									
Observation angle	0.2°			0.33°			2°		
Entrance angle	5°	30°	40°	5°	30°	40°	5°	30°	40°
white (010)	100	40	10	80	35	9	5	2.5	1.5
yellow (020)	60	26	7	45	20	6	3	1.5	1
orange (035)	30	12	2.2	25	10	2.2	1.2	0.5	-
red (030)	22	9	2	17	6.5	1.8	1	0.5	0.5
green (060)	13	5	1.5	11	5	1.2	0.5	0.3	0.2
blue (050)	6	2.4	0.5	4	1.3	-	-	-	-
brown (080)	5	2	-	3	1	-	-	-	-

Colours (DIN 5033 Part 3, DIN 5036 Part 1, DIN 6171, state as manufactured):

Table 2 – Colour coordinates									
Colours	1		2		3		4		Luminance factor $\beta$
	X	y	X	y	X	y	X	y	
white (010)	0.305	0.315	0.335	0.345	0.325	0.355	0.295	0.325	≥ 0.35
yellow (020)	0.494	0.505	0.470	0.480	0.513	0.437	0.545	0.454	≥ 0.27
orange (035)	0.610	0.390	0.535	0.375	0.506	0.404	0.570	0.429	≥ 0.17
red (030)	0.735	0.265	0.700	0.250	0.610	0.340	0.660	0.340	≥ 0.05
green (060)	0.110	0.415	0.170	0.415	0.170	0.500	0.110	0.500	≥ 0.04
blue (050)	0.130	0.090	0.160	0.090	0.160	0.140	0.130	0.140	≥ 0.01
brown (080)	0.455	0.397	0.523	0.429	0.479	0.373	0.558	0.394	0.03 - 0.09

### Physical and Chemical Properties

<b>Thickness*</b> (without protective paper and adhesive)	130 micron
<b>Temperature resistance**</b>	adhered to aluminium, -56° C to +82° C
<b>Sea-water resistance (DIN 50021)</b>	adhered to aluminium, after 100h at 23° C, no variation
<b>Resistance to solvents and chemicals</b>	with expert application resistant to most oils, grease, fuels, aliphatic solvents, weak acids, salts and alkalis
<b>Resistance to cleaning agents</b>	adhered to aluminium, 8 h in wash-alkalics (0,5% household cleaning agents) at room temperature and 65° C, no variation
<b>Adhesive power*</b> (FINAT-TMI after 24h, stainless steel)	15 N/25 mm (film tear)
<b>Shelf life***</b>	2 years
<b>Application temperature</b>	> +10° C
<b>Service life by specialist application</b> under vertical outdoor exposure (standard central European climate)	7 years

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

### Attention

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 allowed to dry for at least three weeks and to completely cure respectively. The compatibility of selected lacquers and paints should be tested by the user, prior to application of the material. The self-adhesive reflective material can only be used for dry application. The low tensile strength of the material can make the removability of the reflective film more difficult. Furthermore the application information published by ORAFOL is to be considered.

### IMPORTANT NOTICE

When using ORALITE® 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 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.

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 signs 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 and finished sign. Sign failures caused by the substrate or improper surface preparations are not the responsibility of ORAFOL. Please refer to the full warranty document available at [www.orafol.com](http://www.orafol.com) for detailed information.

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