ORALITE®

5510 ENGINEER GRADE

Description
ORALITE® - Reflective films Series 5510 ENGINEER GRADE are weatherproof, self-adhesive retroreflective films with an excellent corrosion and solvent resistance. The retroreflective system of the ORALITE® - Reflective films Series 5510 ENGINEER GRADE consists of catadioptric glass beads which are embedded in a transparent layer of plastic material (class RA1, design A, formerly Type I). The smooth surface shows a high scratch resistance and impact strength, and a very good printability.
The reflective data and colours at daylight comply with the international specifications for reflective materials of this class, such as EN 12899-1 Classes RA1, CR2 (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, 145g/m².
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

Area of use
ORALITE® - Reflective films Series 5510 ENGINEER GRADE were especially developed for the manufacture of traffic control and guidance signs, warning signs and information signs as well as for reflective lettering, numbers and symbols, which are intended for a long-term outdoor use. The film has an adhesive with an excellent adhesion on metallic surfaces as aluminium and zinc coated steel plate.
The ORALITE® 5510 ENGINEER GRADE has an identification watermark.
When using the ORALITE® - Reflective films Series 5510 ENGINEER GRADE, the particular national specifications have to be complied with.

Printing method
The use of ORALITE® - Screen printing inks series 5010 and 5018 is recommended.
A transparent coating is not necessary.

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Technical Data

Minimum reflection data (DIN 67520, Part 1 and Part 2, state as manufactured)

	Specific coefficient of retroreflection R' in cd / lx per m²								
Observation angle	**0.2°**			**0.33°**			**2°**		
Entrance angle	**5°**	**30°**	**40°**	**5°**	**30°**	**40°**	**5°**	**30°**	**40°**
white (010)	80	30	10	60	24	9	5	2.5	1.5
yellow (020)	50	22	7	35	16	6	3	1.5	1
orange (035)	25	10	2,2	20	8	2.2	1.2	0.5	-
red (030)	14.5	6	2	10	4	1.8	1	0.5	0.5
green (060)	9	3.5	1.5	7	3	1.2	0.5	0.3	0.2
blue (050)	4	1.7	0.5	2	1	-	-	-	-
brown (080)	1	0,3	-	0.6	0.2	-	-	-	-

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

	Colour coordinates								Luminance factor β
	1		**2**		**3**		**4**		
	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

ORAFOL Europe GmbH – Orafolstraße 2 – D 16515 Oranienburg
Phone: +49(0)3301/8640 – Telefax: +49(0)3301/864100
E-mail: verkauf@orafol.de – Internet: http://www.orafol.com

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Thickness* (without protective paper and adhesive)	110 micron
Temperature resistance* **	adhered to aluminium, -56°C to +82°C
Salt water resistance (DIN 50021)	adhered to aluminium, after 100h/23°C no variation
Resistance to solvents and chemicals	with expert application resistant to most oils, grease, fuels, aliphatic solvents, weak acids, salts and alkalis
Resistance to solvents and chemicals	adhered to aluminium, 8h in washalcalics (0,5% household cleaning agents) at room temperature and 65°C, no variation
Adhesive power* (FINAT TM 1, after 24h, stainless steel)	15 N/25mm (film tear)
Shelf life **	2 years
Minimum application temperature	> +10°C
Service life by specialist application under vertical outdoor exposure (standard central European climate)	7 years

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

Note

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.
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. The batch traceability according to ISO 9001 is possible on the basis of the roll number.

The statements in this information sheet are based upon our knowledge and practical experience. This data is intended only as a source of information and is given without guarantee and does not constitute a warranty. Due to the wide variety of possible uses and applications customers should independently determine the suitability of this material for their specific purpose, prior to use.

ORAFOL Europe GmbH – Orafolstraße 2 – D 16515 Oranienburg
Phone: +49(0)3301/8640 – Telefax: +49(0)3301/864100
E-mail: verkauf@orafol.de – Internet: http://www.orafol.com