ORALITE®
5500 Engineer Grade

Description

ORALITE® - Reflective films Series 5500 ENGINEER GRADE are weatherproof, self-adhesive retroreflective films with an excellent corrosion and solvent resistance.
The retroreflective system of the ORALITE® - Reflective films Series 5500 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 (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 5500 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 ORALITE® 5500 ENGINEER GRADE has an adhesive with an excellent adhesion on metallic surfaces as aluminium and zinc coated steel plate.
When using the ORALITE® - Reflective films Series 5500 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				
black	070	25	10		20	8				

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

		Colour coordinates								Luminance factor ß
		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	0,47	0,48	0,513	0,437	0,545	0,454	>=0,27
orange	035	0,61	0,39	0,535	0,375	0,506	0,404	0,57	0,429	>=0,17
red	030	0,735	0,265	0,7	0,25	0,61	0,34	0,66	0,34	>=0,05
green	060	0,11	0,415	0,17	0,415	0,17	0,5	0,11	0,5	>=0,04
blue	050	0,13	0,09	0,16	0,09	0,16	0,14	0,13	0,14	>=0,01
brown	080	0,455	0,397	0,523	0,429	0,479	0,373	0,558	0,394	0,03<=ß<=0,09
black	070	Black is the colour at daylight. When being illuminated in darkness, it appears silver to silver-grey.								

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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 cleaning agents	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 (not printed)

* average ** 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 selfadhesive 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.

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