

SAPHIR™



SAPHIR™ is a hard coated extruded polycarbonate sheet, glass like in appearance.

In SAPHIR™ we have combined high impact strength with the additional qualities of: improved weather and chemical resistance as well as high protection against abrasion. This is possible due to a two-sided coating made of hard silicon, which is known as the very best on the market.

The high impact strength of SAPHIR™ is maintained over a wide range of temperatures: -40°C to +90°C.

Qualities:

- Coated with hard silicon
- Anti-abrasive surface on one or two sides
- Resistant to many chemicals, including graffiti paint
- Resistant to heat, cold, sun, rain, snow and ice
- Extremely high break resistance – almost unbreakable
- Excellent combination with COLORADO™
- Excellent impact strength
- Light weight compared to glass
- Good fire behaviour classification
- Usable over a wide temperature range

Application areas:

Applications in safety glazing, thanks to the improved scratch resistance and the high impact strength. The hard coating is resistant to many chemicals, which is important for applications within the machine industry. SAPHIR™ is virtually unbreakable, does not splinter and is therefore suitable as machine protection.

Vandalism can be solved by using SAPHIR™. Paint and graffiti does not stick to the coating and can be easily removed with detergents.

An example of an application in the combination SAPHIR™ and COLORADO™ is tractor roofing with green tint.

SAPHIR™ can only be used for flat constructions and Arla can not be responsible for any kind of formed applications.

Available in:

All colours (as SAPHIR™ COLORADO™).

Cases above:

Shop Safety Glazing
Security door

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SAPHIR™ Properties

Properties	Value	Unit	Standard
<i>Physical properties</i>			
Density	1,20	g/cm ³	ISO 1183
Light transmission (thickness 1 mm)	88	%	DIN 5036, T.3
<i>Mechanical properties</i>			
Tensile strength at yield (break)*	63 (70)	N/mm ²	ISO 527
Elongation at yield (break)*	6 (110)	%	ISO 527
Elastic modulus*	2300	N/mm ²	ISO 527
Falling dart, Etot t = 4 mm +21 °C, 50% RH,			
4,4 m/s, h = 1,07 m, falling dart 14,26 kg	56,7	J	ISO 6603-2
<i>Thermal properties</i>			
Heat deformation temperature,			
HDT A, 1,82 N/mm ²	135	°C	ISO 75
Thermal expansion coefficient	7 x 10 ⁻⁵	m/m °C	ASTM D696

*Information apply to carrier material.

Abrasion test	Test method	Unit	Polycarbonate without coating	Saphir™	PVC	Acrylics	Glass
Taber abrasion test CS10F wheel/ 500 gram weight							
100 cycles	ASTM D-1044	Δ %	35	2	28	21	0,5
500 cycles	ASTM D-1044	Δ %	46	9	–	–	1
1000 cycles	ASTM D-1044	Δ %	>50	<12	–	–	2
Sandrieseel test	DIN 52348	Δ %	37	2	–	–	1

The above information is based upon experience and given in good faith. Due to many factors which are outside our knowledge and control, no warranty is given or is to be implied with respect to such information.

Arla sheets are produced from resins that are certified according to UL 94. Furthermore, several products have been tested according DIN 4102 (class B1 and B2), DIN 5510 (class S3, SR1 and SR 2, ST1 and ST2), BS 476 part 7 (class 1Y), NF P 92-501 (M2), CSE/75/A (class 1), CSE/RF/3/77 (class 1), UNE 23.727-90 (class M.4). A list of products that have been tested and their respective classification is presented on www.arlaplast.se. If information regarding classifications according to other standards is needed, it is often possible to retrieve information from our raw material suppliers. Please contact our technical support.



Electricity protection on railway bridge