

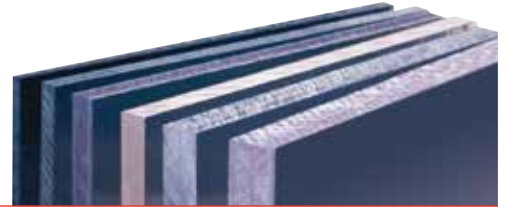
# Exolon® AR FO

## Solid polycarbonate sheet with flexible hardcoat



### Your benefits:

- extreme impact strength
- good abrasion resistance
- flexible hardcoat
- excellent chemical resistance



**Exolon® AR FO** sheet is an abrasion resistant polycarbonate sheet that offers glasslike hardness coupled with the impact strength of standard polycarbonate.

Additionally, **Exolon® AR FO** can be drape formed into 2D shapes, vacuum and pressure formed into more complex shapes with moderate radii. Cold bending is also possible. It offers excellent chemical resistance against most common chemicals. It is available both sides coated, as well as one side coated.

### Applications:

Typical applications for **Exolon® AR FO** sheet include transparent curved screens, machine-guards, industrial visor, security glazing, riot shields and anti-vandal glazing.

We recommend to use **Exolon® AR FO** for indoor applications. Outdoor use is possible for non-permanent applications or for a limited period e.g. motorcycle windshields.

	Test Conditions	Typical values <sup>(1)</sup>	Unit	Standard
<b>PHYSICAL</b>				
Density		1200	kg/m <sup>3</sup>	ISO 1183-1
Water absorption saturation	water at 23 °C	0.30	%	ISO 62
Water absorption equilibrium	23 °C, 50% relative humidity	0.12	%	ISO 62
Refractive index	Procedure A	1.587	-	ISO 489
<b>MECHANICAL</b>				
Tensile modulus	1 mm/min	2350	MPa	ISO 527-1,-2
Yield stress	50 mm/min	> 60	MPa	ISO 527-1,-2
Yield strain	50 mm/min	6	%	ISO 527-1,-2
Nominal strain at break	50 mm/min	> 50	%	ISO 527-1,-2
Flexural modulus	2 mm/min	2350	MPa	ISO 178
Flexural strength	2 mm/min	90	MPa	ISO 178
Taber abrasion resistance	Δ haze after 100 cycles (500 g CS 10F)	>10	%	ASTM D1044 &
<b>THERMAL</b>				
Vicat softening temperature	50 N, 50°C/h	148	°C	ISO 306
Thermal conductivity	23°C	0.20	W/(m.K)	ISO 8302
Coefficient of linear thermal expansion	23 to 55°C	0.65	10 <sup>-4</sup> /K	ISO 11359-1, -2
Temperature of deflection under load	1.80 Mpa	128	°C	ISO 75-1, -2
Temperature of deflection under load	0.45 Mpa	140	°C	ISO 75-1, -2

<sup>(1)</sup> These values are measured on uncoated injection molded samples, and are not intended for specification purposes.

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Ideas, innovative, intelligent, interesting... Exolon Group i-line represents the next generation of quality products. This seal guarantees innovative and intelligent first-class solutions at all times for a multitude of requirements.

### Light Transmission:

Test Method according to DIN 5036.

The stated thicknesses are not all available as standard. Please ask us for more information.

The stated values are typical values only.

Light transmission in %	2	3	4	5	6	8	10	12
Exolon® AR FO clear W099/ V099	88	88	87	87	86	85	83	82

### Available sizes:

**Exolon® AR FO** is available in thicknesses of 1 – 12 mm and in the following sizes; other sizes, colors and sheet thicknesses on request.

### Colors:

Exolon® AR FO clear W099      2-sides coated  
Exolon® AR FO clear V099      1-side coated

### Sizes:

3,000 x 2,000 mm  
3,000 x 2,000 mm

### Permanent Service Temperature:

The permanent service temperature without load is approx. 120°C.

### Forming:

**Exolon® AR FO** can be cold formed to a radius of about 200 times the thickness

For **drape forming**, it is important that the polycarbonate sheet material is well above its glass transition temperature to allow smooth forming performance of the coating. Good results were achieved when the **Exolon® AR FO** is homogeneously heated for 15 minutes to a temperature of 165°C to a radius of about 20 to 30 times the thickness.

### Chemical resistance:

**Exolon® AR FO** passes at least one minute up to several minutes surface contact at 23 °C with acetone, xylene, toluene, methanol, methylene chloride, concentrated sulphuric acid, diesel, heptane, 10 % potassium hydroxide.

Other chemicals or temperatures need to be tested.

**Exolon® AR FO** has shown good resistance compared to other commercial coatings against several cooling fluids for machining, but because of the big variety in these products, a test is recommended which can be done in the Exolon Group laboratory.



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