Product data sheet, January 2020

Makrolon® multi UV 5X/16-25 BF (Butterfly)

Multiwall polycarbonate sheet

S Line
Standard

Your benefits:

- high stiffness
- good heat insulation
- light weight

Makrolon® multi UV 5X/16-25 BF is a 5-wall polycarbonate sheet of 16 mm thickness, with an X-structure for enhanced stiffness. It combines high light transmission, good load bearing properties, good thermal insulation and excellent weather resistance. The sheet is lightweight, impact resistant and easy to install.

Makrolon® multi UV 5X/16-25 BF is ideal for flat glazing applications. It can also be installed as cold curved barrel vault.

- porches
- shelters
- partition walls

The sheets are produced with a coextruded UV-protective layer, which is homogeneously fused with the sheet material. This UV-protected side must be installed facing upwards/outwards. It provides **Makrolon® multi UV** with a highly effective protection against weathering, guaranteed for 10 years.

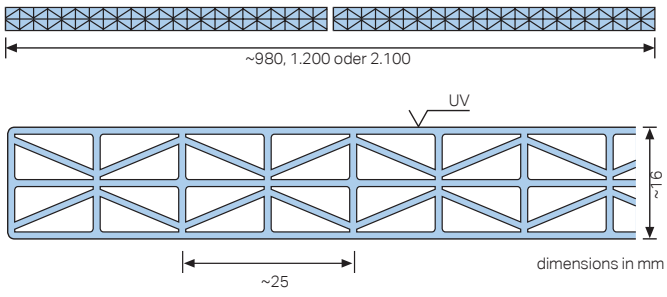
On request:
IQ-Relax
Makrolon® multi IQ-Relax are opal white sheets, which dramatically reduce the heat of the sunlight, allowing the visible light to pass through. More light, less heat!

Two side UV-protection

TECHNICAL DATA (TYPICAL VALUES)

Area weight	2.25 kg/m²	
Sheet width	980, 1,200 and 2,100 mm	
Possible delivery lengths	2,000 to 15,000 mm	
Minimum permissible cold-bending radius [1]	2,400 mm	
Light transmittance τ_{D65} (UV-absorbing)	clear 1099: white 1146: IQ-Relax: bronze 1845:	ca. 70 % ca. 55 % ca. 47 % ca. 26 %
Total energy transmission g	clear 1099: white 1146: IQ-Relax: bronze 1845:	ca. 62 % ca. 54 % ca. 44 % ca. 45 %
Heat transfer coefficient Ug [3]	2.0 W/m² K (vertical application) 2,1 W/m² K (horizontal application)	
Coefficient of thermal expansion α	0.065 mm/m °C	
Possible expansion due to heat and moisture	3 mm/m	
Max. service temperature without load	120°C	
Weighted sound reduction index	~ 21 dB	
Fire rating [2] • Europe	clear 1099, white 1146 bronze 1845, IQ-Relax	} B-s1, d0 (EN 13501-1)

[1] The cold-bending must be parallel to the ribs of the sheets, never crosswise (risk of buckling). The sheets can be cold bent at a min. radius of 150 times of the sheet thickness. There may appear an optical distortion of the internal layers. This has no negative influence on the mechanical properties of the product providing our guidelines and installation tipps are followed correctly.
[2] Fire certificates are limited in time and scope, always check if the mentioned certificate is valid for the purchased Polycarbonate sheet type at the date of delivery. Polycarbonate sheets may change their fire behavior due to ageing and weathering. The indicated fire rating was tested on new / unweathered Product in accordance with the indicated fire classification standards.
[3] Heat transfer coefficient Ug according to EN ISO 10077-2



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Exolon Group S-Line, the standard product line, represents a range of certified quality products which offer the reliable solution for most applications.

When using **Makrolon® multi UV 5X/16-25 BF** in roof or wall installations, the forces exerted by snow and wind loads must be absorbed by a suitable substructure. We recommend implementing the support distance indicated in the diagram for the respective loads.

The diagram shows the load-bearing capacity of **Makrolon® multi UV 5X/16-25 BF** (supported on all sides, rebate depth ≥ 20 mm) with a standard profile on the longitudinal sides. The load-bearing curves enable the user to calculate the actual load-bearing characteristics of the multi-wall sheets in their support construction.

If the rebate depth is smaller, the support distances should be reduced in accordance with the relevant load. For wind forces alone, the loads are permitted to be multiplied by 1.1.

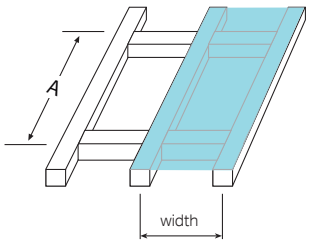
Load bearing characteristics (determination)*:
The component resistance (limit state of load-bearing capacity) of **Makrolon® multi UV 5X/16-25 BF** has been evaluated based on load bearing data measured on similar products The characteristic values identified were calculated on the longitudinal sides by considering the chucking effect (standard profiles). The results were partially applied to other widths using simplified, conservative models. The loads were applied as uniformly distributed linear loads, i.e. loads such as snow acting perpendicular to the sheet.

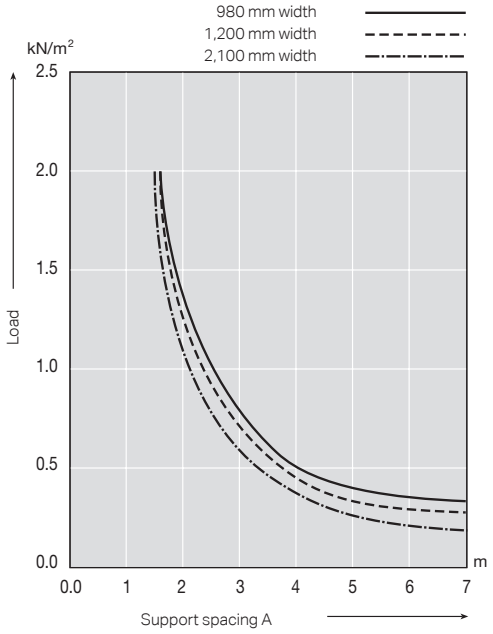
The values are reference values calculated by an independent and notified institute through tests on actual systems. Adequate safety margins must be observed in addition to these values. The margins are to be assessed on a case-by-case basis.

In general, experience has proven that a safety factor of 1.3 is adequate with regard to the measured resistance values. This safety factor is included in the load tables and diagram.

These specifications do not replace national regulations, such as building inspectorate approval in Germany (DIBt), Avis Techniques in France, etc.

*Further information can be obtained on request





Load	kN/m²	0,75	1,0	1,25	1,5	2,0	Width in mm
Length or support spacing A	m	3,0	2,4	2,1	1,9	1,6	980
	m	2,9	2,2	2,0	1,8	1,6	1.200
	m	2,5	2,1	1,9	1,6	1,5	2.100

Exolon Group also produces solid sheets in polycarbonate (Makrolon® GP) and in polyester (Vivak® and Axpet®).
For more information, take a look at www.exolongroup.com.

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