

# Makrolon® multi UV 5X/10-25

## Multiwall polycarbonate sheet



### Your benefits:

- optimised area weight
- high surface quality
- lightweight

**Makrolon® multi UV 5X/10-25** is a 5-wall polycarbonate sheet of 10 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/10-25** is ideal for flat glazing applications. It can also be installed as cold curved barrel vault.

- conservatories
- greenhouses
- covered walkways
- carports, porches,
- skylights, northlight glazing
- barrel vault

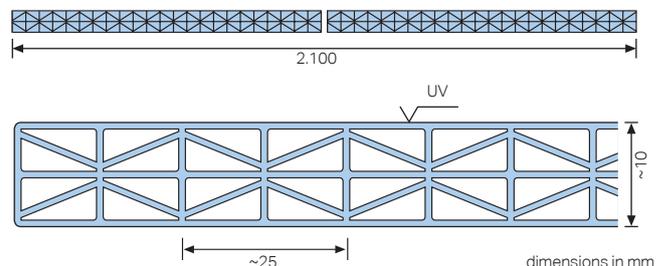
The sheets are produced with a coextruded UV-protective layer, which is homogeneously fused with the sheet material. This UV-protected side must be installed facing upwards/outwards. It provides **Makrolon® multi UV** with a highly effective protection against weathering, with a limited 10 years warranty.

### TECHNICAL DATA (TYPICAL VALUES)

Area weight	1.5 kg/m <sup>2</sup>	
Sheet width	2100 mm	
Possible delivery lengths	2,000 to 15,000 mm	
Minimum permissible cold-bending radius <sup>(1)</sup>	2,400 mm	
Light transmittance $\tau_{D65}$ (UV-absorbing)	clear 1099: white 1146: bronze 1845:	ca. 75 % ca. 65 % ca. 30 %
Total energy transmission g	clear 1099: white 1146: bronze 1845:	ca. 70 % ca. 65 % ca. 50 %
Heat transfer coefficient U <sub>g</sub> <sup>(2)</sup>	2.5 W/m <sup>2</sup> K <sup>(1)</sup>	
Coefficient of thermal expansion $\alpha$	0.065 mm/m °C	
Possible expansion due to heat and moisture	3 mm/m	
Max. service temperature without load	120°C	
Fire rating <sup>(2)</sup>	clear 1099, white 1146 } • Europe } bronze 1845 }	B-s1, d0 (EN 13501-1)

<sup>(1)</sup> The cold-bending must be parallel to the ribs of the sheets, never crosswise (risk of buckling). 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 tips are followed correctly.

<sup>(2)</sup> 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, except for Product rated "B1" in accordance with DIN 4102.



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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.

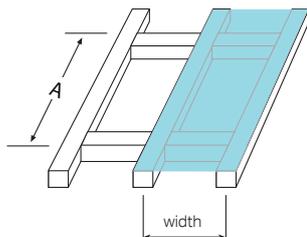
If **Makrolon® multi UV 5X/10-25** is used in applications of roofing or walling, the forces applied by wind and snow loads must be absorbed by a suitable sub-structure. We recommend taking the support distance for each load from the diagram.

The diagram shows the load bearing capacity for **Makrolon® multi UV 5X/10-25** (supported on all sides, rebate depth  $\geq 20$  mm). If the rebate depth is smaller, the support distances should be reduced suitably for the given load. For pure wind loads the loads may be increased by a factor of 1.1.

If sufficiently stable profiles are used, the load increases by a factor of 1.2. 1,050 mm width is measured in a two-field arrangement of a 2,100 mm wide sheet. You can find further sheet widths and statements on barrel vaults in the Technical Manual.

### Load bearing characteristics (determination):

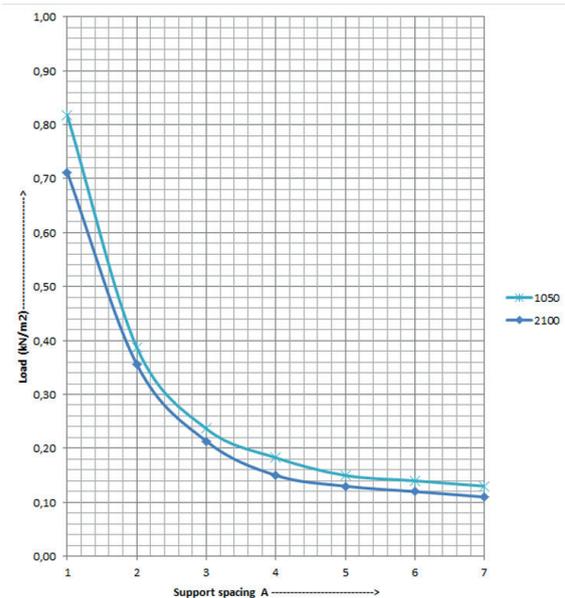
The system resistance (boundary state of load bearing capacity) of **Makrolon® multi UV 5X/10-25** was evaluated using test reports on similar products. The characteristic values of system resistance were evaluated in an unfavorable system, i.e. the sheets were not fixed, but laid loosely. The loads are applied as uniformly distributed linear loads, i.e. load components acting vertically on the sheet, e.g. snow.



These values are guide values. Adequate safety factors, which should be assessed on a case-by-case basis, are to be observed with regard to these values.

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

**These statements do not replace the specified national certificates, e.g. building inspectorate approval (Bauaufsichtliche Zulassung Germany), Avis Techniques (France), etc.**



Load	kN/m <sup>2</sup>	1	0.8	0.6	0.4	0.2	Width in mm
Length or support spacing A	m	-	1	1.4	2	3.6	1,050 (*)
	m	-	-	1.2	1.8	3.2	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](http://www.exolongroup.com).



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