Product data sheet, March 2014

Makrolon® multi UV 2/8-10.5

Multiwall polycarbonate sheet

Your benefits:

- high impact strength
- cold-bendable
- ideal for barrel vaults

Makrolon® multi UV 2/8-10.5 is a twinwall polycarbonate sheet of 8 mm thickness. It combines high light transmission, thermal insulation and excellent weather resistance. The sheet is lightweight, impact resistant and easy to install.

Makrolon® multi UV 2/8-10.5 is ideal for cold-curved barrel vaults. It can also be installed as flat glazing.

- porches, shelters
- greenhouses
- swimming pool covers
- covered walkways
- partition walls
- industrial glazing
- skylights, northlight glazing
- roofing

The manufacturing width of 2,100 mm is particularly suitable for sections that are cut to size across the width.

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:

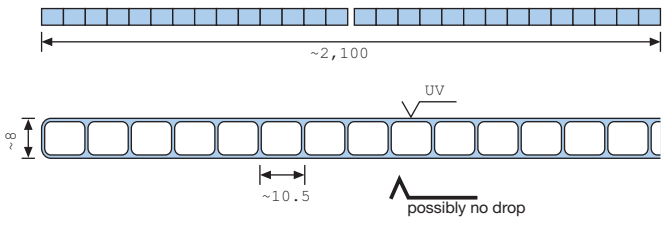
No drop

The "no drop" version of **Makrolon® multi UV** has an extremely durable water-dispersing coating on one side (side facing indoors). This coating causes condensation to flow off as a continuous film, preventing drops forming on the inside of the roof.

TECHNICAL DATA (TYPICAL VALUES)

Area weight	1.5 kg/m²	
Sheet width	2,100 mm	
Possible delivery lengths	2,000 to 12,000 mm	
Minimum permissible cold-bending radius [1]	1,200 mm	
Light transmittance τ_{D65} (UV-absorbing)	clear 1099: white 1125: white 1146: bronze 1845: green 1650: blue 1545:	ca. 81 % ca. 21 % ca. 78 % ca. 48 % ca. 58 % ca. 44 %
Heat transfer coefficient Ug [3]	3.3 W/m² K (vertical application) 3.6 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	
Fire rating [2]		
• Europe	clear 1099, white 1146 bronze 1845	B-s1, d0 (EN 13501-1)
• Germany	clear 1099, white 1146 clear 4099	B1 (DIN 4102)
	bronze 1845	B2 (DIN 4102)

[1] The cold-bending must be parallel to the ribs of the sheets, never crosswise (risk of buckling).
[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, except for Product rated "B1" in accordance with DIN 4102.
[3] Heat transfer coefficient Ug according to EN ISO 10077-2



dimensions in mm

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Bayer MaterialScience 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 2/8-10.5** 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 2/8-10.5** (supported on all sides, rebate depth ≥ 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.

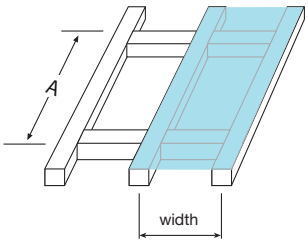
If sufficiently stable profiles are used, the load increases by a factor of 1.2.1,050 mm width is measured in a two-field arrangement of a 2,100 mm wide sheet. You can find further sheet widths and statements on barrel vaults in the Technical Manual.

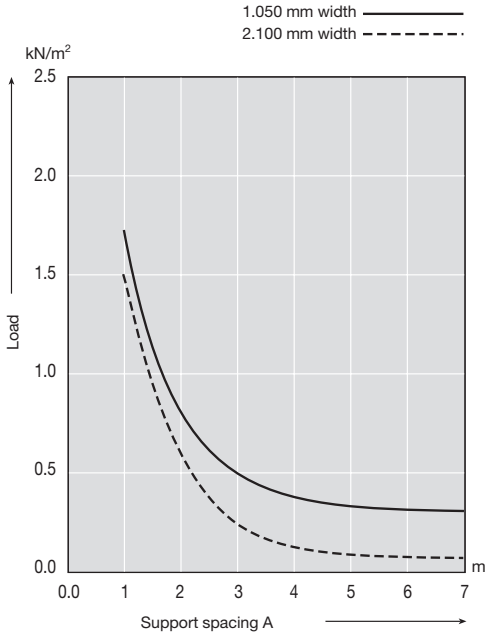
Load bearing characteristics (determination):
The system resistance (boundary state of load bearing capacity) of **Makrolon® multi UV 2/8-10.5** was determined in accordance with European guideline ETAG 10 (European Technical Approval on "self-supporting light-transmitting roofing systems", which came into force in September 2002) in real tests. The characteristic values of system resistance were determined 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, which were determined in extensive tests on real systems carried out by the KPF in Erkelenz/Germany (testing, monitoring and certification centre recognized by the building inspectorate). Adequate safety values, 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/m²	0.5	0.75	1.0	1.25	Width in mm
Length or support	m	3.0	2.1	1.7	1.5	1,050
spacing A	m	2.1	1.8	1.5	1.2	2,100

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

Bayer MaterialScience

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