

Product data sheet, March 2014

Makrolon® multi UV 3/16-20

Multiwall polycarbonate sheet



Your benefits:

- good load bearing properties
- good light transmission
- cold-bendable

Makrolon® multi UV 3/16-20 is a triplewall polycarbonate sheet of 16 mm thickness. It combines high light transmission, good load bearing properties and excellent weather resistance. The sheet is lightweight, impact resistant and easy to install.

Makrolon® multi UV 3/16-20 is ideal for cold-curved barrel vaults. It can also be installed as flat glazing.

- industrial glazing, sports halls
- greenhouses
- conservatories
- covered walkways
- carports, porches, shelters
- partition walls
- skylights, barrel vaults, northlight glazing
- roofing

The sheets are produced with a coextruded UV-protective layer on both sides, which is homogeneously fused with the sheet material. It provides **Makrolon® Multi UV** with a highly effective protection against weathering, guaranteed for 10 years.

On request:

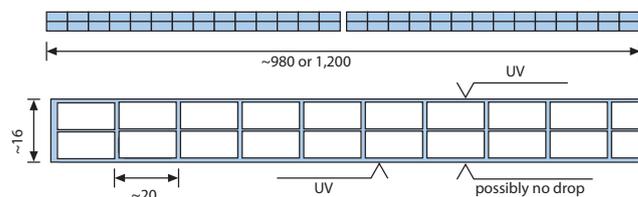
No drop

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	2.6 kg/m ²	
Sheet width	980, 1.200 and 2.100 mm	
Possible delivery lengths	2,000 to 7,000 mm	
Minimum permissible cold-bending radius ⁽¹⁾	2,400 mm	
Light transmittance τ_{D65} (UV-absorbing)	clear 2099: white 2146: bronze 2845:	ca. 74 % ca. 62 % ca. 30 %
Total energy transmission g	clear 2099: white 2146: bronze 2845:	ca. 70 % ca. 62 % ca. 49 %
Heat transfer coefficient Ug ⁽³⁾	2.2 W/m ² K (vertical application) 2.4 W/m ² 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 2099, white 2146 bronze 2845	} B-s1-d0 (EN 13501-1)
• Germany	clear 2099, white 2146 bronze 2845	
• UK	clear 2099, white 2146, bronze 2845	} 1Y (BS 476: Part 7)
• France	clear 2099	
		M2 (NF P 92501/505)

- ⁽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

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by BMS. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

Makrolon® multi UV 3/16-20

Multiwall polycarbonate sheet



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

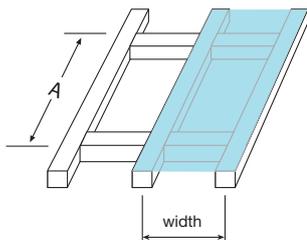
When using **Makrolon® multi UV 3/16-20** in roof or wall installations, the forces exerted by snow and wind loads must be absorbed by a suitable substructure. We recommend implementing the support distance indicated in the diagram for the respective loads.

The diagram shows the load-bearing capacity of **Makrolon® multi UV 3/16-20** (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 3/16-20** has been defined in accordance with the European guideline ETAG 010 regarding practical tests. The characteristic values identified were calculated on the longitudinal sides by considering the chocking 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.

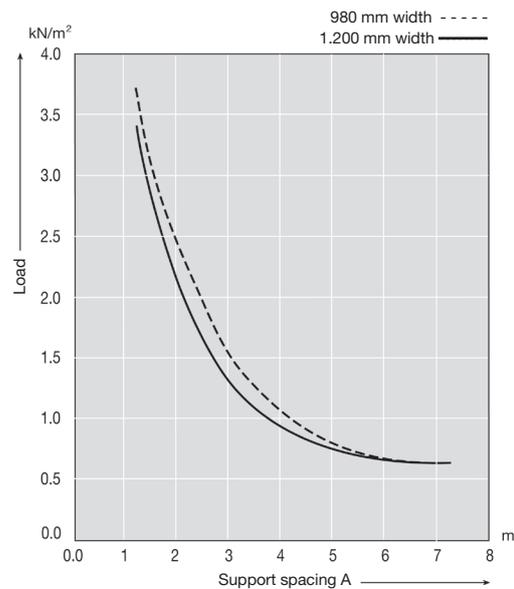


The values are reference values calculated by an independent and notified institute through tests on actual systems. Adequate safety margins must be observed in addition to these values. The margins are to be assessed on a case-by-case basis.

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/m ²	0.75	1.0	1.25	1.5	2.0	Width in mm
Length or support spacing A	m	5.3	4.0	3.5	3.0	2.5	980
	m	5.0	3.7	3.2	2.7	2.2	1.200
	m	5.25	4.0	3.5	3.0	2.5	2.100

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



Bayer MaterialScience

Bayer MaterialScience GmbH
 Otto-Hesse-Straße 19/T9, 64293 Darmstadt, Germany
 Tel. +49 6151 13 03-0
 Fax +49 6151 13 03-500

www.bayersheeteurope.com