

Product data sheet, January 2012

Makrolon® Ambient S2N-10

Polycarbonate sheet filled with Aerogel



Your benefits:

- high light transmission
- low installation costs
- cold-bendable



Makrolon® Ambient S2N-10 is a twinwall polycarbonate sheet of 10 mm thickness, filled with Aerogel. It combines best-in-class thermal insulation, good load bearing properties, high light transmission and excellent weather resistance. The sheet is lightweight, impact resistant and easy to install.

Makrolon® Ambient S2N-10 is ideal for cold-curved barrel vaults. It can also be installed as flat glazing.

- swimming pool covers
- porches
- partition walls
- skylights, northlight glazing
- sky domes (inner shell)

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® Ambient S2N-10** with a highly effective protection against weathering, guaranteed for 10 years.

On request:

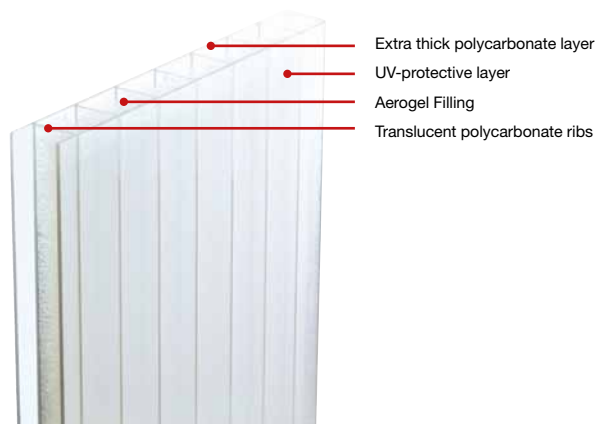
IQ-Relax

Makrolon® Ambient 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!

TECHNICAL DATA (TYPICAL VALUES)

Area weight	2.1 kg/m ²	
Sheet width	2,100 mm	
Possible delivery lengths	2,000 to 6,000 mm	
Minimum permissible cold-bending radius ⁽¹⁾	1,500 mm	
Light transmittance τ_{D65} (UV-absorbing)	clear 1060: IQ-Relax:	ca. 65 % ca. 60 %
Total energy transmission g	clear 1060: IQ-Relax:	ca. 67 % ca. 65 %
Heat transfer coefficient U _g	1.88 W/m ² K	
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 R _w	16 dB	

⁽¹⁾ The cold-bending must be parallel to the ribs of the sheets, never crosswise (risk of buckling).



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Ideas, innovative, intelligent, interesting... Bayer MaterialScience 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.

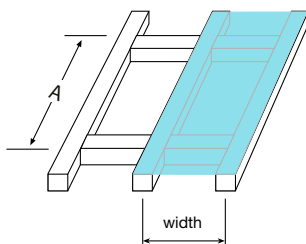
If **Makrolon® Ambient S2N-10** is used in applications of roofing or walling, the forces applied by wind and snow loads must be absorbed by a suitable substructure. We recommend taking the support distance for each load from the diagram.

The diagram shows the load bearing capacity for **Makrolon® Ambient S2N-10** (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):

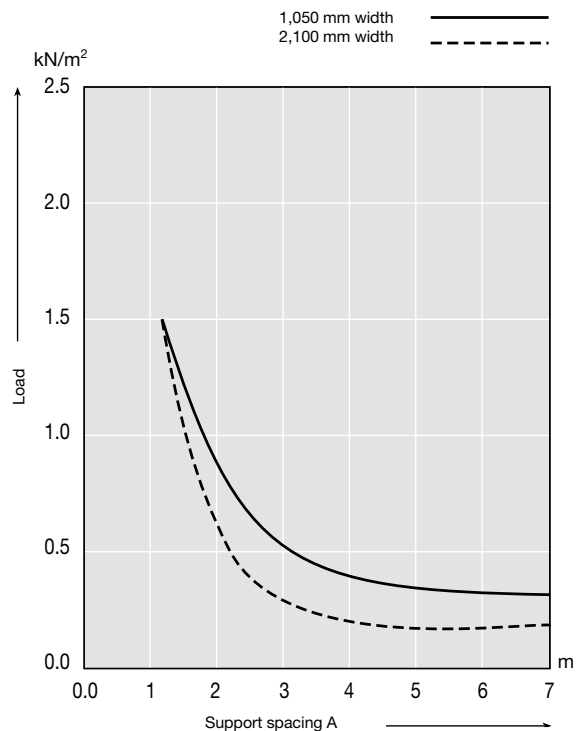
The system resistance (boundary state of load bearing capacity) of **Makrolon® Ambient S2N-10** was determined in accordance with European guideline ETAG 10 (European Technical Approval on "self-supporting light-transmitting roofing systems", which came into force in September 2002) in real tests. The 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/m ²	0.5	0.75	1.0	1.5	Width in mm
Length or support spacing A	m	3.1	2.1	1.7	1.2	1,050
	m	2.1	1.8	1.6	1.2	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