

Product data sheet, January 2011

Makrolon® Ambient S2S-25

Polycarbonate sheet filled with Nanogel®



Your benefits:

- best-in-class thermal insulation
- good load bearing capacity
- extreme light diffusion
- good sound protection

Makrolon® Ambient S2S-25 is a twinwall polycarbonate sheet of 25 mm thickness, filled with Nanogel®. 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 S2S-25 is specifically developed for roof glazing applications.

- conservatories
- roof glazing in passiv houses
- industrial glazing, sports halls
- skylights, northlight glazing
- roofing, cladding

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** with a highly effective protection against weathering, guaranteed for 10 years.

On request:

IQ-Relax

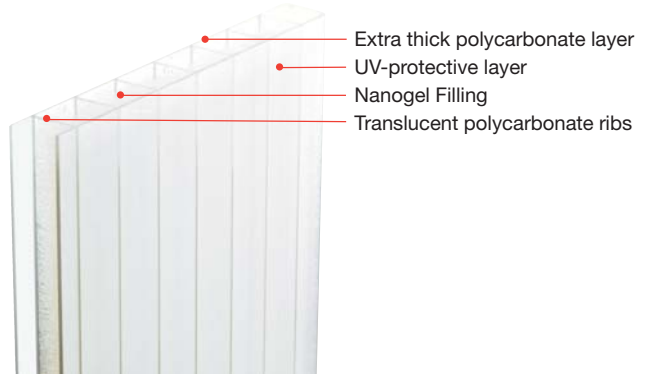
Makrolon® Ambient IQ-Relax are opal white sheets, which dramatically reduce the heat of the sunlight, allowing the visible light to pass through.

TECHNICAL DATA (TYPICAL VALUES)

Area weight	7 kg/m ²	
Sheet width	1,220 mm	
Possible delivery lengths	1,000 to 7,000 mm	
Minimum permissible cold-bending radius ⁽¹⁾	4,000 mm	
Light transmittance τ_{D65} (UV-absorbing)	clear 1060:	ca. 59 %
	IQ-Relax:	ca. 30 %
Total energy transmission g	clear 1060:	ca. 61 %
	IQ-Relax:	ca. 28 %
Heat transfer coefficient (DIN EN 674) U _g	vertical:	0.98 W/m ² K
	horizontal:	0.99 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	26 dB	
Impact strength	EN 356-P5A	
Fire rating ⁽¹⁾	• Germany	
	clear 1060: B2 (DIN 4102)	

⁽¹⁾ Fire certificates are limited in time, always check if the mentioned certificate is still valid

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



Product Liability Clause: This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to verify the information currently provided – especially that contained in our safety data and technical information sheets – and to test products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

Makrolon® is a registered trademark of Bayer AG
Nanogel® is a registered trademark of Cabot Corporation

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Ambient

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i-line

Ideas, innovative, intelligent, interesting...

Bayer Sheet Europe 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 S2S-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® Ambient S2S-25** (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.

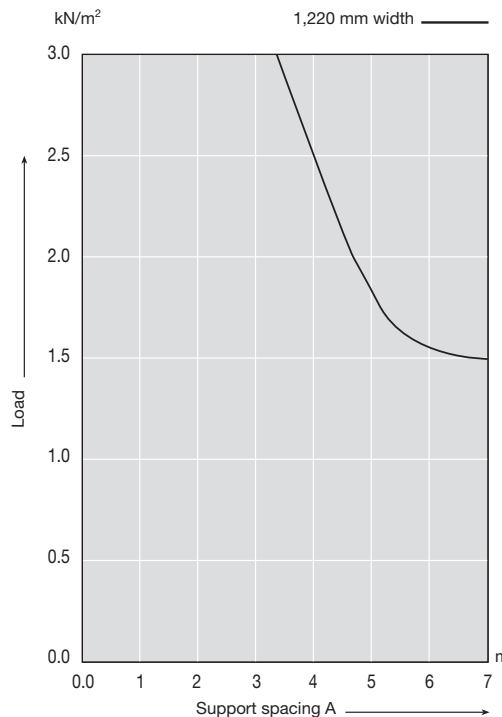
Load bearing characteristics (determination):

The system resistance (boundary state of load bearing capacity) of **Makrolon® Ambient S2S-25** 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	1.5	2.0	2.5	3.0	Width in mm
Length or support spacing A	m	∞	4.7	4.0	3.4	1,220