



Product data sheet, December 2008

Makrolon® Ambient S2S-25 Polycarbonate sheet filled with Nanogel®



Your benefits:

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

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:

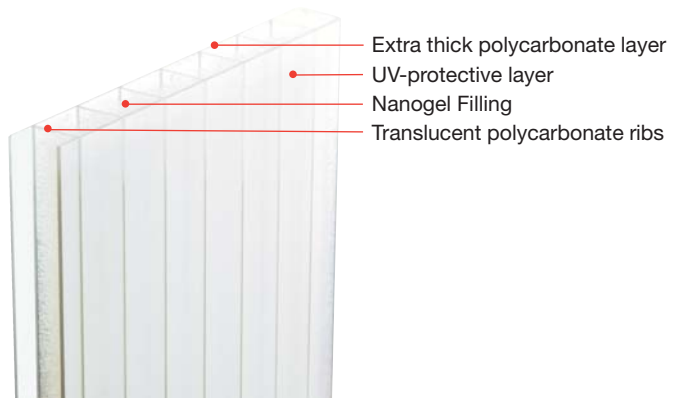
IQ-Relax

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 6,000 mm | |
| Minimum permissible cold-bending radius ⁽¹⁾ | 4,000 mm | |
| Light transmittance τ_{D65} (UV-absorbing) | clear 1060: bronze 1825: IQ-Relax: | ca. 59 % ca. 25 % ca. 20 % |
| Total energy transmission g | clear 1060: IQ-Relax: | ca. 61 % ca. 28 % |
| Heat transfer coefficient (DIN EN 674) U _g | vertical: horizontal: | 0.98 W/m ² K 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
⁽²⁾ The cold-bending must be parallel to the ribs of the sheets, never crosswise (risk of buckling)



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makrolon®
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.

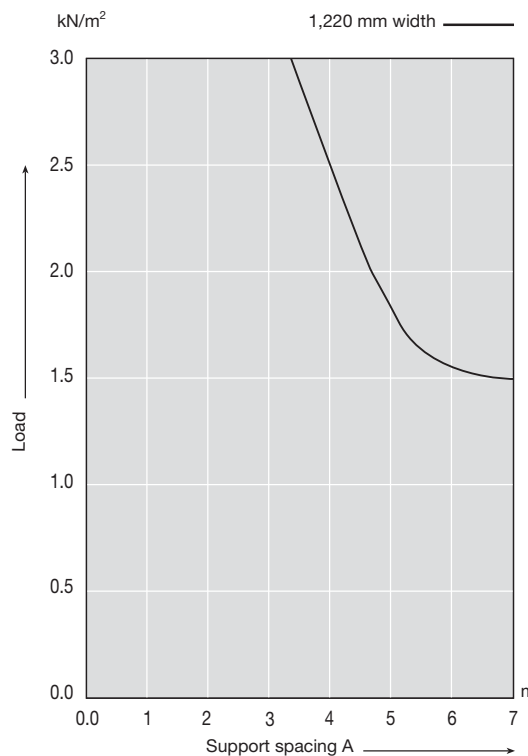
Load bearing characteristics (determination):

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/m² | 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 |

