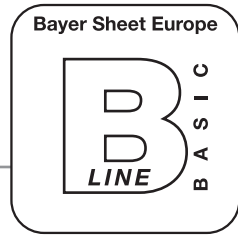


Product data sheet, May 2006

# Makrolon® MWS 16-3W

## Triple wall polycarbonate sheet



**Makrolon® B-Line**, the basic product line, represents a range of products which meet basic requirements. It is part of the Makrolon® sheet range, the recognized quality brand of a reliable producer. In case you need sheets which meet certain standards, certifications or regulations, please refer to our S-Line of standard products in the **Makrolon®** sheet range. Or take a look at our I-Line of highly innovative products.

### Description:

**Makrolon® MWS 16-3W** is a triple wall polycarbonate sheet in 16 mm thickness. It is lightweight, weather resistant and easy to install. The sheets can be cold bended. **Makrolon® MWS 16-3W** is a cost-effective solution for roof glazing.

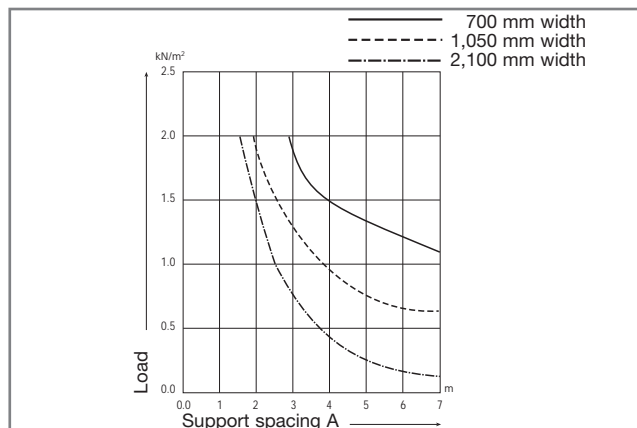
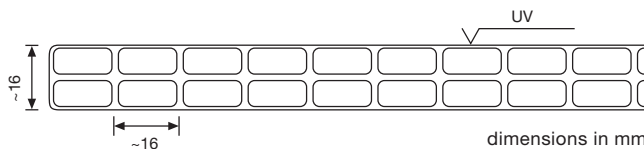
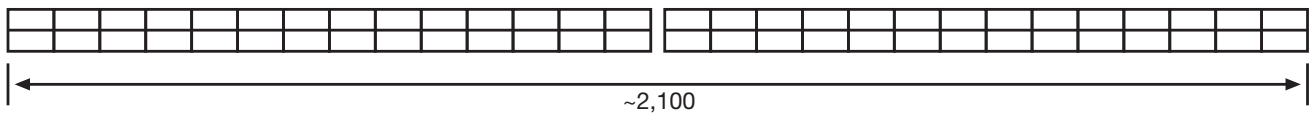
### Typical applications include:

- roof lights, shed glazing on industrial and sports buildings
- greenhouses
- carports and porches
- all kinds of shelters

### Installation guidelines:

The sheets have a UV-protection on one side for improved weatherability. Always install the sheets with this side facing outwards. Always install the sheets supported and clamped on all 4 sides, with a rebate depth of  $\geq 20$  mm. Ensure that the supporting substructure is sufficiently stable. In the table below you can find the recommended maximum sheet dimensions for flat glazing applications with the corresponding wind and snow loadings.

Load	kN/m <sup>2</sup>	0.5	0.75	1.0	1.5	2.0	width in mm
Sheet length or supporting structure	m	$\infty$	$\infty$	$\infty$	4.8	2.8	700
	m	$\infty$	5.1	4.0	2.5	1.9	1,050
	m	3.8	3.0	2.4	1.9	1.7	2,100



TECHNICAL DATA (TYPICAL VALUES)	
Sheet width	2,100 mm
Sheet length	6,000 mm
Minimum permissible cold bending radius <sup>(1)</sup>	2400 mm
Light transmission $\tau_{D65}$ TR (UV-absorbing) clear transparent	ca. 74%
Coefficient of thermal expansion $\alpha$	0.065 mm/m °C
Possible expansion due to heat and moisture	3 mm/m
Max. service temperature without load	120 °C

<sup>(1)</sup> 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.





Warranty statement, May 2009

# Makrolon® MWS 16-3W Twinwall polycarbonate sheet

## Limited 5-years warranty on weathering

### Warranty statements

#### 1. The sheet retains its light transmission

This means that the sheets suffer a maximum loss of light transmission of 4 per cent points within 5 years of delivery. The transmittance is measured on clean, unscratched specimens according to DIN 5036.

#### 2. The sheet retains its rigidity

This means that sheets will have a modulus of elasticity of  $\geq 2100$  MPa after 5 years. This elastic modulus is measured in the tensile test according to ISO 527 at 23 °C, as the average value established for 5 specimens with parallel faces which have been conditioned to the equilibrium state in the standard climate of 23 °C and 50% RH.

#### 3. The sheet does not turn brittle and retains its strength

This means that the sheets have a tensile strength of  $\sigma_y \geq 50$  MPa after 5 years. This strength is determined in the tensile test according to ISO 527, at 23 °C, as the average value established for 5 unscratched specimens with parallel faces which have been conditioned to the equilibrium state in the standard climate of 23 °C and 50% RH.

### Conditions of warranty

#### Makrolon® MWS sheets:

- have to be stored, transported, fabricated and installed (or used) in a manner that suits the material,
- must not be (adversely) affected by connecting, fastening and sealing elements,
- have to be protected against aggressive chemicals,
- must not be thermoformed,
- may only be exposed to the weather on the UV side, not on both sides (e.g. vertical glazing),
- must not be scratched or abraded.

*This warranty applies throughout Europe.*

#### Note

For reasons of testing technique it is impossible to establish characteristic material values on complicated profiles with sufficient accuracy. Therefore, specimens with parallel faces are cut out of the skins in the direction of the webs to measure the transmittance, modulus of elasticity and tensile stress at yield. Specimen surfaces obtained by mechanical treatment must be polished.

#### Applicability

A complaint under this warranty will be considered, a) if caused within the warranty period despite demonstrable observance of the conditions of warranty, b) if made without delay during the warranty period, and c) if an invoice issued by the salesperson is presented, showing the name and address of the buyer, the purchase date, complete product description and number of sheets purchased.

If the complaint is justified, we will replace the material free of charge ex works as stipulated below.

If, for some reason, replacement material cannot be supplied, the customer will be refunded with the original purchase price according to the same pattern. Further claims are ruled out.

#### Replacement of faulty material in case of weathering

- |                   |      |                   |     |
|-------------------|------|-------------------|-----|
| • up to 1 year    | 100% | • within 4th year | 45% |
| • within 2nd year | 75%  | • within 5th year | 30% |
| • within 3rd year | 60%  |                   |     |

*In case you need sheets with an extended warranty, or which meet certain standards, certifications or regulations, please refer to our S-Line of standard products in the Makrolon® sheet range. Or take a look at our I-Line of highly innovative products.*

