

Makrolon® Silent Sound BF AR

Solid polycarbonate sheet 12 mm



I Line
Innovative

Your benefits:

- Tested safety according to ZTV-LSW06/EN 14388
- Anti-graffiti Test according to NF F 31-112
- Bird-friendly (according to ONR 191040)
- Good fire rating

Solid **Makrolon® Silent Sound** sheets are clear, polished, UV-stabilized polycarbonate sheets and available as extended UV and Abrasion-resistant AR (anti graffiti like)/ Bird friendly BF version. They offer extreme impact strength that exceeds the physical properties of other products of their class. Makrolon® sheets resist temperatures of -100 to +120 °C, exhibit high optical clarity and have a good fire rating.

Makrolon® Silent Sound sheets meet the sound technical requirements for noise reduction and the demands of road and railway safety, stability such as form and ageing stability. **Makrolon® Silent Sound UV** can be bent cold and also manufactured flat. Furthermore **Makrolon® Silent Sound** sheets can be thermoformed, cold-curved and machined with ease.

Applications:

Makrolon® Silent Sound can be used for noise protection barriers on motorways with heavy traffic, dual carriageways and railways. Incapseling of machinery, transfo's and high voltage cables along tracks.

Vandalism:

The sheets offer protection against involuntary breakage and wilfull destruction. The sheets are virtually unbreakable and do not splinter.

| | Test Conditions | Typical values ⁽¹⁾ | Unit | Standard |
|---|------------------------------|-------------------------------|-------------------|-----------------|
| PHYSICAL | | | | |
| Density | | 1200 | kg/m ³ | ISO 1183-1 |
| Water absorption saturation | water at 23 °C | 0.30 | % | ISO 62 |
| Water absorption equilibrium | 23 °C, 50% relative humidity | 0.12 | % | ISO 62 |
| Refractive index | Procedure A | 1.587 | – | ISO 489 |
| MECHANICAL | | | | |
| Tensile modulus | 1 mm/min | 2350 | MPa | ISO 527-1,-2 |
| Yield stress | 50 mm/min | > 60 | MPa | ISO 527-1,-2 |
| Yield strain | 50 mm/min | 6 | % | ISO 527-1,-2 |
| Nominal strain at break | 50 mm/min | > 50 | % | ISO 527-1,-2 |
| Flexural modulus | 2 mm/min | 2350 | MPa | ISO 178 |
| Flexural strength | 2 mm/min | 90 | MPa | ISO 178 |
| Charpy impact strength | 23 °C, unnotched | non-break | kJ/m ² | ISO 179-1eU |
| Charpy impact strength | 23 °C, 3 mm | 80P | kJ/m ² | ISO 179-1eA |
| Izod impact strength | 23 °C, 3.2 mm, notched | 90P | kJ/m ² | ISO 180-A |
| THERMAL | | | | |
| Vicat softening temperature | 50 N, 50°C/h | 148 | °C | ISO 306 |
| Thermal conductivity | 23°C | 0.20 | W/(m.K) | ISO 8302 |
| Coefficient of linear thermal expansion | 23 to 55°C | 0.65 | 104/K | ISO 11359-1, -2 |
| Temperature of deflection under load | 1.80 Mpa | 128 | °C | ISO 75-1, -2 |
| Temperature of deflection under load | 0.45 Mpa | 140 | °C | ISO 75-1, -2 |
| ELECTRICAL | | | | |
| Electrical strength | 1 mm | 34 | kV/mm | IEC 60243-1 |
| Volume resistivity | | 1E14 | Ohm.m | IEC 60093 |
| Surface resistivity | | 1E16 | Ohm | IEC 60093 |
| Relative permittivity | 100 Hz | 3.1 | – | IEC 60250 |
| Relative permittivity | 1 MHz | 3.0 | – | IEC 60250 |
| Dissipation factor | 100 Hz | 5 | 10 ⁻⁴ | IEC 60250 |
| Dissipation factor | 1 MHz | 95 | 10 ⁻⁴ | IEC 60250 |

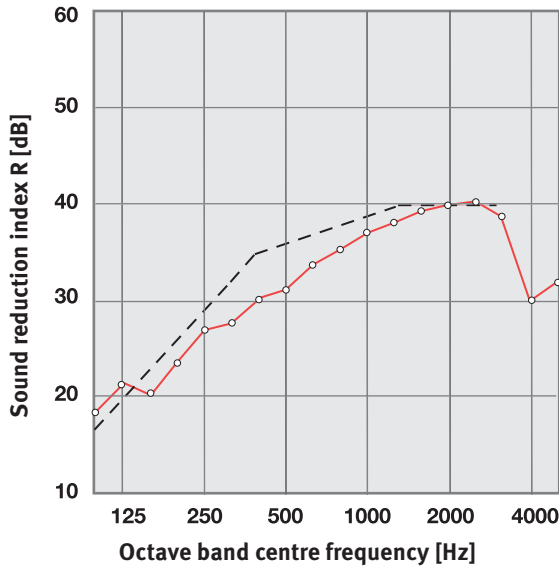
⁽¹⁾ These values are measured on injection molded samples, and are not intended for specification purposes.

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Ideas, innovative, intelligent, interesting... Exolon Group 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.



RESULTS dB [EN ISO 140-3]

| | |
|-------------------------------|------|
| Sum of deviation | 32 |
| Average deviation | 2.00 |
| Displacement designated curve | -16 |
| Sound reduction index R_w | 36 |

SPECTRUM ADAPTATION TERMS

| | C | C_{tr} |
|--------------------------------|----|----------|
| 100 - 3,150 Hz | -2 | -5 |
| 100 - 5,000 Hz | -3 | -5 |
| 50 - 3,150 Hz | -2 | -6 |
| 50 - 5,000 Hz | -3 | -6 |
| ΔL_{ARSF} (ZTV-LSW 88) | | 32 |
| DL_R (DIN EN 1793-2) | | 31 (B3) |

EUROPEAN CERTIFICATES for Makrolon® Silent Sound UV

Resistance to brushwood fire according to^(*):

DIN EN 1794-2, Annex A: Class 2
ZTV-LSW 06, Section 2.5.4

Impact of Stones according to:

DIN EN 1794-1, Annex C: Passed

Danger of falling debris according to:

DIN EN 1794-2, Annex B: Class 3

Bird Protection according to:

ONR 191040 (Austrian Standards Institutes): Passed

Anti-graffiti like^(**)

according to NF F 31-112

(*) 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.

(**) further information can be found in the related Technical Information