PRODUCT GUIDE
Virtually unbreakable extruded multiwall polycarbonate sheets.
**IMPEX® MULTIWALL**

**IMPEX® MULTIWALL** are virtually unbreakable extruded multiwall polycarbonate sheets. The sheets are lightweight, strong, weather resistant, more impact resistant and offer good cold and heat insulating properties.

**IMPEX® MULTIWALL** offers solutions for both indoor and outdoor applications. The standard programme includes the colours clear, opal and bronze in different wall design variants.
CHARACTERISTICS

- High impact resistance
- High heat and sound insulation
- Long life span
- Excellent light transmission up to 86% (6/2w)
- Large dimensions
- Excellent resistance to chemicals
- Very good transparency
- UV protection: co-extruded single-sided or double-sided
- 10 year warranty against yellowing
- Excellent fire safety according to EN 13501 (Euroclass)
- Temperature resistant from -40°C up to +130°C
- High resistance to mechanical loading
- Lightweight
- Easy to install using common tools

APPLICATIONS

- Roofing and glazing for carports, terraces, conservatories and pergolas
- Light domes
- Vaults
- Suspended ceilings
- Greenhouses
- Cladding
- Shelters
- Partitions
- Swimming pool covers
- Protective covers for fragile items

PROCESSING

- Laminating
- Sawing
- Drilling
- Bonding
<table>
<thead>
<tr>
<th>COLOUR</th>
<th>FEATURE</th>
<th>LT (16/3 w)</th>
<th>SHEET WIDTH (mm)</th>
<th>SHEET LENGTH (mm)</th>
<th>4/2 w</th>
<th>6/2 w</th>
<th>8/2 w</th>
<th>10/2 w</th>
<th>10/4 w</th>
<th>16/3 w</th>
<th>16 Diamond</th>
<th>20 Diamond</th>
<th>25 Diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear 1090</td>
<td>UVP (single-sided)</td>
<td>73%</td>
<td>980</td>
<td>6000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1200</td>
<td>6000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2100</td>
<td>50</td>
<td>50*</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7000</td>
<td>50</td>
<td>50</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opal 3B 2090</td>
<td>UVP (single-sided)</td>
<td>45%</td>
<td>980</td>
<td>6000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1200</td>
<td>6000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2100</td>
<td>50</td>
<td>50</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7000</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze 1990</td>
<td>UVP (single-sided)</td>
<td>25%</td>
<td>2100</td>
<td>6000</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7000</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IMPEX® MULTIWALL special conditions: Other thicknesses, colours and patterns can be produced to order, but are subject to special conditions (minimum order quantities, production lead times and price surcharge).

UVP = UV-protection (* = This version is also available with double-sided UV covering.)

LT = Light transmission (Figures apply to 16/3 w only.)

Products having a number of sheets per pallet in the table are available on stock.

Detailed information on the products deviating from the standard can be found in the current valid version of the delivery programme. Please contact your customer service representative.
## TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>Design of the walls</th>
<th>4 / 2 w</th>
<th>6 / 2 w</th>
<th>8 / 2 w</th>
<th>8 / 4 w</th>
<th>10 / 2 w</th>
<th>10 / 4 w</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (mm)</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Tolerance</td>
<td>+/- 0.5 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light transmission</td>
<td>clear sheet</td>
<td>88%</td>
<td>86%</td>
<td>81%</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td>U value (watts/(m².K))</td>
<td>3.9</td>
<td>3.5</td>
<td>3.2</td>
<td>2.8</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Weight (g/m²)</td>
<td>900</td>
<td>1300</td>
<td>1500</td>
<td>1500</td>
<td>1700</td>
<td>1700</td>
</tr>
<tr>
<td>Tolerance</td>
<td>+/- 45</td>
<td>+/- 65</td>
<td>+/- 75</td>
<td>+/- 75</td>
<td>+/- 85</td>
<td>+/- 85</td>
</tr>
<tr>
<td>Standard widths (mm)</td>
<td>2100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>+/- 6 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard lengths* (mm)</td>
<td>6000 and 7000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>-0/+0.40% (24 – 28 mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Design of the walls

| Thickness (mm) | 16 | 16 | 16 | 20 | 25 |
| Tolerance     | +/- 0.5 mm | | | | |
| Light transmission | clear sheet | 73% | 62% | 60% | 55% | 50% |
| U value (watts/(m².K)) | 2.3 | 2.0 | 1.9 | 1.7 | 1.5 | |
| Weight (g/m²) | 2700 | 2500 | 2500 | 3000 | 3300 |
| Tolerance     | +/- 135 | +/- 125 | +/- 125 | +/- 150 | +/- 165 |
| Standard widths (mm) | 980 / 1200 / 2100 | 980 / 1200 / 2100 | 980 / 1200 / 2100 | 2100 | 980 / 2100 |
| Tolerance     | -2/+6 mm | | | | |
| Standard lengths* (mm) | 6000 and 7000 | | | | |
| Tolerance     | -0/+0.40% (24 – 28 mm) | | | | |

* = Standard lengths of IMPEX® MULTIWALL sheets are 6000 mm and 7000 mm.

Detailed information on the products deviating from the standard can be found in the current valid version of the delivery programme. Please contact your customer service representative.

### FIRE PERFORMANCE

<table>
<thead>
<tr>
<th>COLOUR</th>
<th>WEIGHT (g/m²)</th>
<th>THICKNESS (mm)</th>
<th>RESULT</th>
<th>STANDARD</th>
<th>TEST INSTITUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear &amp; Opal</td>
<td>900 – 1700</td>
<td>4 / 2 w – 10 / 2 w</td>
<td>B-s1,d0</td>
<td>EN13501-1:2007</td>
<td>MFPA Leipzig GmbH</td>
</tr>
<tr>
<td>Clear &amp; Opal</td>
<td>1700</td>
<td>10 / 4 w</td>
<td>B-s1,d0</td>
<td>EN13501-1:2007</td>
<td>MFPA Leipzig GmbH</td>
</tr>
<tr>
<td>Clear &amp; Opal</td>
<td>2700</td>
<td>16 / 3 w</td>
<td>B-s1,d0</td>
<td>EN13501-1:2002</td>
<td>LNE</td>
</tr>
<tr>
<td>Clear</td>
<td>2500</td>
<td>16 / 5 w</td>
<td>B-s1,d0</td>
<td>EN13501-1:2007</td>
<td>LNE</td>
</tr>
<tr>
<td>Clear</td>
<td>2500</td>
<td>16 Diamond</td>
<td>B-s1,d0</td>
<td>EN13501-1:2010</td>
<td>MFPA Leipzig GmbH</td>
</tr>
<tr>
<td>Opal 3B</td>
<td>2500</td>
<td>16 Diamond</td>
<td>C-s1,d0</td>
<td>EN13501-1:2010</td>
<td>MFPA Leipzig GmbH</td>
</tr>
<tr>
<td>Opal 4B</td>
<td>2500</td>
<td>16 Diamond</td>
<td>B-s1,d0</td>
<td>EN13501-1:2007</td>
<td>LNE</td>
</tr>
</tbody>
</table>

Other country/region specific fire certifications have also been achieved. These are available upon request.

### CERTIFICATIONS

KPF Erkelenz tested

*Sheets are manufactured according to EN 16153:2013
GENERAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>ISO 1183</td>
<td>g/cm³</td>
<td>1.2</td>
</tr>
</tbody>
</table>

MECHANICAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural modulus</td>
<td>ISO 489</td>
<td>MPa</td>
<td>2000</td>
</tr>
<tr>
<td>Flexural strength</td>
<td>ISO 178</td>
<td>MPa</td>
<td>&gt;95</td>
</tr>
<tr>
<td>Tensile modulus</td>
<td>ISO 527</td>
<td>MPa</td>
<td>2200</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>ISO 527</td>
<td>MPa</td>
<td>60</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>ISO 527</td>
<td>%</td>
<td>80</td>
</tr>
</tbody>
</table>

OPTICAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refractive index</td>
<td>ISO 489</td>
<td>nD</td>
<td>1.585</td>
</tr>
</tbody>
</table>

THERMAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vicat-Temperature (B 50)</td>
<td>DIN EN 306</td>
<td>°C</td>
<td>145</td>
</tr>
<tr>
<td>Heat deflection temperature (A/B)</td>
<td>DIN EN ISO R75</td>
<td>°C</td>
<td>135</td>
</tr>
<tr>
<td>Specific heat capacity</td>
<td>DIN 5328</td>
<td>J/gK</td>
<td>1.17</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion</td>
<td>DIN 53328</td>
<td>K°x10⁻⁴</td>
<td>0.65</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>DIN 52612 or ISO 8302</td>
<td>W/mK</td>
<td>0.20</td>
</tr>
<tr>
<td>Degradation temperature</td>
<td>DIN 53483</td>
<td>°C</td>
<td>&gt;280</td>
</tr>
<tr>
<td>Max. service temperature continuous use</td>
<td>DIN 53483</td>
<td>°C</td>
<td>115</td>
</tr>
<tr>
<td>Max. service temperature short term use</td>
<td>DIN 53483</td>
<td>°C</td>
<td>130</td>
</tr>
<tr>
<td>Sheet forming temperature range</td>
<td>DIN 53483</td>
<td>°C</td>
<td>180 – 210</td>
</tr>
</tbody>
</table>

ELECTRICAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric constant (50 HZ)</td>
<td>DIN 53483</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Volume resistivity</td>
<td>DIN 53482</td>
<td>Ω.cm</td>
<td>&gt;10⁻⁵</td>
</tr>
<tr>
<td>Surface resistivity</td>
<td>DIN 53482</td>
<td>Ω</td>
<td>&gt;10⁻⁵</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>DIN 53481</td>
<td>kV/mm</td>
<td>&gt;30</td>
</tr>
<tr>
<td>Dissipation factor (50 HZ)</td>
<td>DIN 53483</td>
<td>8x10/4w</td>
<td></td>
</tr>
</tbody>
</table>

IMPACT STRENGTHS

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Unit</th>
<th>IMPEX® MULTIWALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charpy (notched)</td>
<td>ISO 179</td>
<td>kJ/m²</td>
<td>&gt;10</td>
</tr>
<tr>
<td>Charpy (unnotched)</td>
<td>ISO 179</td>
<td>kJ/m²</td>
<td>no break</td>
</tr>
</tbody>
</table>

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.

SURFACE LOADING 0.75 kN/m² WITH 4-SIDES FRAME COVERING

<table>
<thead>
<tr>
<th>SHEET WIDTH (mm)</th>
<th>980</th>
<th>1050</th>
<th>1200</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPEX® MULTIWALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THICKNESS (mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 / 2 w</td>
<td>6</td>
<td>1300</td>
<td>1200</td>
</tr>
<tr>
<td>8 / 2 w</td>
<td>8</td>
<td>1600</td>
<td>1400</td>
</tr>
<tr>
<td>8 / 4 w</td>
<td>8</td>
<td>1500</td>
<td>1300</td>
</tr>
<tr>
<td>10 / 2 w</td>
<td>10</td>
<td>2000</td>
<td>1700</td>
</tr>
<tr>
<td>10 / 4 w</td>
<td>10</td>
<td>1800</td>
<td>1600</td>
</tr>
<tr>
<td>16 / 3 w</td>
<td>16</td>
<td>2600</td>
<td>2300</td>
</tr>
<tr>
<td>16 / 5 w</td>
<td>16</td>
<td>2500</td>
<td>2200</td>
</tr>
<tr>
<td>16 Diamond</td>
<td>16</td>
<td>3300</td>
<td>2800</td>
</tr>
<tr>
<td>25 Diamond</td>
<td>25</td>
<td>&gt;6000</td>
<td>&gt;6000</td>
</tr>
</tbody>
</table>

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.