



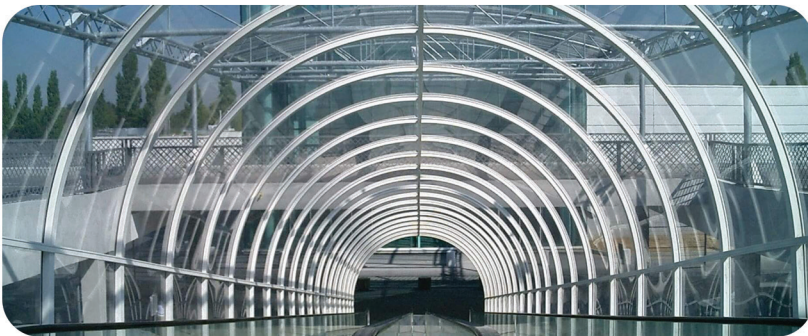
# **POLYCARBONATE (PC) SOLID SHEETS**

# POLYCARBONATE (PC) SOLID SHEETS

## APPLICATION AREAS



- Facade applications
- Winter gardens
- Parking lots
- Underpasses
- Walking paths
- Entrance eaves
- Sports facilities
- City Furniture
- Lighting and Electrical Sector
- Factory windows and skylights
- Overpasses
- Greenhouses
- Patio and terrace roofs
- Roof skylights
- Interior partitions
- Sound barriers
- All Kinds of Means of Transportation
- Basketball backboards
- Pool cover systems
- Stair and balcony railings
- Billboards
- Office furniture
- Exhibition stands
- Bus stops
- Security Shields
- Interior and Transparent Room Panels



## ADVANTAGES OF POLYCARBONATE SOLID SHEET

- High clarity and light transmission
- Transparent steel!
- Excellent impact resistance
- Excellent bendable rigidity
- Excellent rigidity and durability
- Excellent dimensional stability
- High heat resistance
- Excellent wear and aging resistance thanks to UV protection
- Lifetime resistance to UV rays
- 10-Year limited warranty
- Easily processed and shaped
- Cold bending can be done
- Does not contain dangerous substances
- Excellent fire reaction to self-extinguishing ability
- Eco-friendly
- 100% recyclable
- REACH RoHS statements
- Up to 88% light transmittance
- Excellent surface resistance to acidic and mineral oils



## GENERAL FEATURES

|                                                             | Method       | Unit              | Value    |
|-------------------------------------------------------------|--------------|-------------------|----------|
| Density                                                     | ISO 1183-1   | g/cm <sup>3</sup> | 1,2      |
| Water absorption saturation (water 23 °C)                   | ISO 62       | %                 | 0,30     |
| Water absorption balance (23 °C , at 50% relative humidity) | ISO 62       | %                 | 0,12     |
| Thermoforming temperature                                   |              | ° C               | 180-210  |
| <b>MECHANICAL PROPERTIES</b>                                |              |                   |          |
| Tensile Modulus                                             | ISO 527-1,-2 | MPa               | 2350     |
| Yield Stress                                                | ISO 527-1,-2 | MPa               | 65       |
| Yield Strain                                                | ISO 527-1,-2 | %                 | 6,3      |
| Nominal Strain at Break                                     | ISO 527-1,-2 | %                 | >50      |
| Tensile Stress at Break                                     | ISO 527-1,-2 | MPa               | 70       |
| Strain at Break                                             | ISO 527-1,-2 | %                 | 120      |
| Charpy Impact Strength                                      | ISO 179-1    | kJ/m <sup>2</sup> | Ara Yok. |
| <b>THERMAL PROPERTIES</b>                                   |              |                   |          |
| Vicat Softening Temperature                                 | ISO 306      | ° C               | 148      |
| Heat Conductivity 23 °C                                     | ISO 8302     | W/(m-K)           | 0,2      |
| Coefficient of Linear Thermal Expansion                     | ISO 11359-1  | mm/m °C           | 0,065    |
| 1,80 MPa Deflection temperature under load                  | ISO 75-1,-2  | ° C               | 128      |
| 0,45 MPa Deflection temperature under load                  | ISO 75-1,-2  | ° C               | 140      |
| <b>ELECTRICAL PROPERTIES</b>                                |              |                   |          |
| Skin Resistance                                             | IEC 60093    | Ohm.cm            | 1,00E+14 |
| Electrical Force                                            | IEC 60243-1  | kV/mm             | 34       |
| Surface Resistance                                          | IEC 60093    | Ohm               | 1,00E+16 |
| Dissipation Factor - 100 Hz                                 | IEC 60250    | 10.-4             | 5        |

## Acoustic Values

| Thickness | Noise Reduction |
|-----------|-----------------|
| 8mm       | 28              |
| 10mm      | 31              |
| 12mm      | 34              |
| 15mm      | 37              |

### Polycarbonate Solid Sheet Fire Resistance

| Method        | Class     | Thickness |
|---------------|-----------|-----------|
| EN 13501      | B, s1, d0 | 4;5;6 mm  |
| NF 92 501/505 | M2        | 8mm       |
| UL-94         | V0        | 10mm      |

### Polycarbonate Solid Sheet Dimensions

| Maximum Width (mm) | Standard Length (mm) |
|--------------------|----------------------|
| 2050               | 3050                 |

### Solid Sheet Production Tolerances

|          |        |
|----------|--------|
| Length   | ± 2 mm |
| Width    | ± 1 mm |
| Diagonal | ≤ 3 mm |

Transparent, White, Bronze, Diffuser, Blue, Gray and all desired colors can be produced.



## Polycarbonate and Glass Weight Table

| Sheet Thickness (mm) | PC Solid (kg/m <sup>2</sup> ) | Glass (kg/m <sup>2</sup> ) |
|----------------------|-------------------------------|----------------------------|
| 1                    | 1,2                           | 2,5                        |
| 1,5                  | 1,8                           | 3,75                       |
| 2                    | 2,4                           | 5                          |
| 3                    | 3,6                           | 7,75                       |
| 4                    | 4,8                           | 10                         |
| 5                    | 6                             | 12,5                       |
| 6                    | 7,2                           | 15                         |
| 8                    | 9,6                           | 20                         |
| 10                   | 12                            | 25                         |
| 12                   | 14,4                          | 30                         |
| 15                   | 18                            | 37,5                       |

## Polycarbonate Solid Sheet Thickness Tolerances

| Thickness (mm) | Tolerances (mm) |
|----------------|-----------------|
| 1              | ± 0,01          |
| 1,5            | ± 0,015         |
| 2              | ± 0,02          |
| 3              | ± 0,03          |
| 4              | ± 0,04          |
| 5              | ± 0,05          |
| 6              | ± 0,03          |
| 8              | ± 0,04          |
| 9              | ± 0,045         |
| 10             | ± 0,05          |
| 12             | ± 0,06          |
| 15             | ± 0,075         |

## Polycarbonate Solid Sheets Light Transmittance

| Thickness (mm) | Colors      |        |          |       |
|----------------|-------------|--------|----------|-------|
|                | Transparent | Bronze | Diffuser | White |
| 1              | 90          | 35     | 55       | 32    |
| 2              | 89          | 30     | 50       | 30    |
| 3              | 88          | 28     | 45       | 28    |
| 4              | 87          | 26     | 41       | 28    |
| 5              | 86          | 26     | 40       | 26    |
| 6              | 86          | 25     | 40       | 26    |
| 8              | 86          | 16     | 38       | 22    |
| 10             | 84          | 14     | 36       | 18    |
| 12             | 82          | 12     |          |       |
| 15             | 80          |        |          |       |

## Thermal Insulation of PC Solid Sheet Compared to Glass

| Thickness (mm) | Teknorm U Value (W/m <sup>2</sup> - K) | Glass U Value (W/m <sup>2</sup> - K) |
|----------------|----------------------------------------|--------------------------------------|
| 3              | 5,47                                   | 5,81                                 |
| 5              | 5,19                                   | 5,72                                 |
| 6              | 5,07                                   | 5,68                                 |
| 8              | 4,84                                   | 5,6                                  |
| 10             | 4,63                                   | 5,52                                 |
| 12             | 4,43                                   | 5,45                                 |

## PC SOLID Sheet Quantities per Pallet

| Thickness | Size          |
|-----------|---------------|
|           | (2050 x 3050) |
| 1,5 mm    | 100 Pcs       |
| 1,8 mm    | 85 Pcs        |
| 2 mm      | 75 Pcs        |
| 3 mm      | 50 Pcs        |
| 4 mm      | 40 Pcs        |
| 5 mm      | 30 Pcs        |
| 6 mm      | 25 Pcs        |
| 8 mm      | 20 Pcs        |
| 10 mm     | 15 Pcs        |
| 12 mm     | 13 Pcs        |
| 15 mm     | 10 Pcs        |

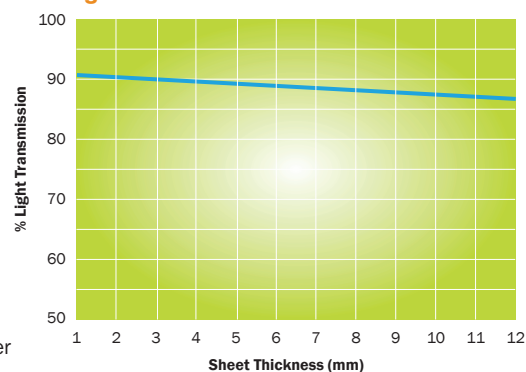
## IMPACT RESISTANCE (Nm)

|                         |             |
|-------------------------|-------------|
| 6mm Tempered Glass      | 4,5 Nm      |
| 6mm Acrylic             | 9,5 Nm      |
| 6mm Solid Polycarbonate | 271 Nm Over |

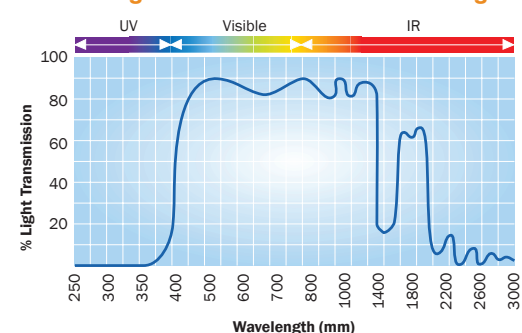
## LIGHT TRANSMISSION (%)

|                         |     |
|-------------------------|-----|
| 6mm Solid Polycarbonate | %86 |
| 6mm PET-G               | %87 |
| 6mm Flat Glass          | %88 |
| 6mm PMMA Sheet          | %92 |

## % Light Transmittance and Sheet Thickness



## % Light Transmittance and Wavelength





## PC SOLID EMBOSSED SHEETS

**DIAMOND**



**MATT**



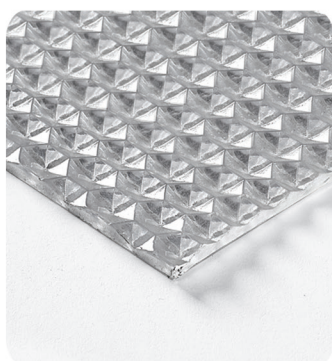
**AQUA**



**RAINDROP**



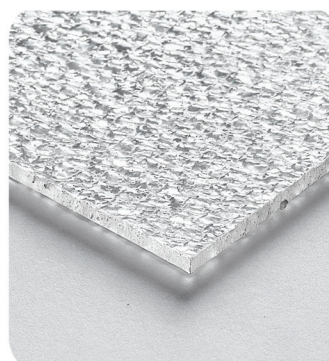
**PRISMATIC**



**GLACIFORM**



**ICEGRAIN**



### EMBOSSED PATTERN TYPES

|           | Thickness<br>(mm) | Thickness<br>Tolerance<br>(%) | Maximum<br>Width (mm) | Standard<br>Length (mm) | Width & Length<br>Tolerances | Color                               |
|-----------|-------------------|-------------------------------|-----------------------|-------------------------|------------------------------|-------------------------------------|
| Diamond   | 1,5 - 10          | +/- 0,3                       | 2100                  | 3000<br>3050<br>6000    | -0,1 %, +0,3 %               | Can be Produced<br>in Desired Color |
| Raindrop  |                   |                               |                       |                         |                              |                                     |
| Matt      |                   |                               |                       |                         |                              |                                     |
| Aqua      |                   |                               |                       |                         |                              |                                     |
| Icegrain  |                   |                               |                       |                         |                              |                                     |
| Prismatic | 3 - 10            |                               |                       |                         |                              |                                     |
| Glaciform |                   |                               |                       |                         |                              |                                     |

