

# Monolithic Polycarbonate Sheet

Limited 15-Year Manufacturer's Warranty (UV Performance)

## Product Overview

The SOLID IMPACT™ Series is a high-performance monolithic polycarbonate sheet designed for demanding glazing applications, including cold-climate environments. It combines excellent impact resistance, optical clarity, and UV stability for long-term outdoor use.

### Key Features

- Manufactured from 100% virgin polycarbonate resin (Makrolon® grade)
  - Double-sided co-extruded UV protection
  - Suitable for interior and exterior glazing applications
  - Excellent impact resistance and optical clarity
- (Makrolon® is a registered trademark of Covestro. Resin origin subject to supplier certification)

## Warranty & Intended Use

Limited 15-Year Manufacturer's Warranty applies to UV performance of the sheet material only. Warranty coverage does not extend to installation, system design, or overall project performance. Full warranty terms, conditions, and exclusions are available upon request.

### IMPORTANT NOTICE

This Technical Data Sheet provides typical material properties only and is intended for reference purposes. It does not constitute structural design guidance or certification of compliance with building codes. Final product selection, system design, load calculations, and installation details must be reviewed and approved by a licensed professional engineer in accordance with applicable Canadian building codes and local Authority Having Jurisdiction (AHJ) requirements.

## Physical Properties

Property	Test Method	Unit	Value
Density	ISO 1183	g/cm <sup>3</sup>	1.20
Water Absorption	ISO 62	%	0.10
Equilibrium	ISO 62	%	0.35
Water Vapour Transmission Rate	ISO 15106-1	g/(m <sup>2</sup> ·24h)	15.0

## Mechanical Properties

Property	Test Method	Unit	Value
Tensile Stress, Yield	ISO 527	N/mm <sup>2</sup>	60.0
Tensile Modulus	ISO 527	N/mm <sup>2</sup>	2350
Tensile Strain, Yield	ISO 527	%	6
Tensile Strain, Break	ISO 527	%	120
Flexural Stress, Yield	ISO 178	MPa	90
Flexural Modulus	ISO 178	MPa	2300
Izod Impact, Notched 20°C	ISO 180	kJ/m <sup>2</sup>	65.0
Izod Impact, Notched -30°C	ISO 180	kJ/m <sup>2</sup>	>37
Elongation at Break	ISO 527-2	%	150.0

## Impact Strength

Property	Test Method	Unit	Value
Charpy (Notched)	ISO 179	kJ/m <sup>2</sup>	>10
Charpy (Unnotched)	ISO 179	kJ/m <sup>2</sup>	No Break

## Optical Properties

Property	Test Method	Unit	Value
Refraction Index	ISO 489	nD20	1.586
Light Transmission	ASTM D1003	%	85.0% (Clear)

## Thermal Properties

Property	Test Method	Unit	Value
Vicat Softening Temp (B/120)	DIN EN ISO 306	°C	148.0
Heat Deflection Temp (A/B)	DIN EN ISO R75	°C	135.0
Specific Heat Capacity	-	J/gK	1.17
Coeff. Linear Thermal Expansion	DIN 53328	K <sup>-1</sup> x10 <sup>-5</sup>	6.5 / 6.75
Thermal Conductivity	DIN 52612	W/mK	0.20
Thermal Expansion	DIN 53752	1/°C	7.10 <sup>-5</sup>
Degradation Temperature	-	°C	>280
Max Service Temp (Continuous)	-	°C	115.0
Max Service Temp (Short Term)	-	°C	130.0
Forming Temperature Range	-	°C	180-210
Flammability	EN 13501-1	Class	B-s1, d0 (B1)

## Electrical Properties

Property	Test Method	Unit	Value
Dielectric Constant (50Hz)	DIN 53483	-	3.0
Volume Resistivity	DIN 53482	Ω.cm	10^15
Surface Resistivity	DIN 53482	Ω	≥10^15
U-Value (Thermal Insulation)	-	W/m²K	3.0 (R-1.9)
Dielectric Strength	DIN 53481	kV/mm	>30
Dissipation Factor (50Hz)	DIN 53483	-	8x10 <sup>-4</sup>

## Technical Specifications & Tolerances

Property	Tolerance	5mm	6mm	10mm
Thickness	+/- 2%	5.0 mm	6.0 mm	10.0 mm
UV Layer (Both Sides)	Not Less Than	50 µm	70 µm	70 µm
Light Transmission (Clear)	+/- 5%	85%	85%	85%
Light Transmission (Bronze)	+/- 5%	50%	50%	50%
Light Transmission (Grey)	+/- 5%	50%	50%	50%
Noise Resistance	+/- 5%	25 dB	30 dB	34 dB
Density / Weight	+/- 2%	6.00 kg/m <sup>2</sup>	7.20 kg/m <sup>2</sup>	12.00 kg/m <sup>2</sup>
Min. Bending Radius	+/- 10%	900 mm	900 mm	1500 mm
Standard Width	-2 / +3 mm	2050 mm	2050 mm	2050 mm
Standard Lengths	-2 / +3 mm	3050 / 6100 mm	3050 / 6100 mm	3050 / 6100 mm

**Wholesale Distribution Notice**

The purchaser, reseller, installer, or project designer is responsible for verifying product suitability, code compliance, and performance for the intended application.

**Disclaimer**

The properties reported herein represent typical values only and are provided in good faith for reference purposes. Actual product performance may vary between shipments and applications. No warranties are given or implied beyond the express limited manufacturer’s warranty stated herein. Detailed product specifications and technical documentation are available upon request.

**Yevro Polycarbonate Supply**

**Website:** yevropolycarbonate.ca  
**Email:** akhmed@yevropolycarbonate.ca  
**Phone:** (647) 573-6323

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