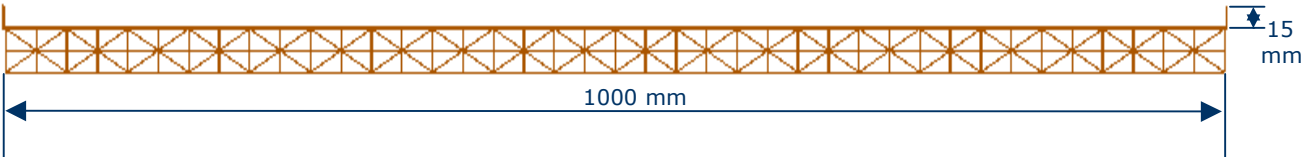


Description

Lexan* polycarbonate is a unique engineering thermoplastic which combines a high level of mechanical, optical and thermal properties. When extruded in multi-wall sheet form with calibrated side wings, its optical and impact properties in particular make this panel an excellent candidate for roofglazing for insulated corrugated metal industrial buildings. Lexan Thermopanel sheet, LTP30P3X42, is an impact resistant, energy saving multi-wall transparent sheet with calibrated multi form side wings matching any insulating corrugated metal panel.



Lexan Thermopanel Sheet LTP30P3X42 offers:

- Four wall structure offering excellent thermal insulation
- UV protected surface
- Long-term weather resistance
- High impact strength
- Good light transmission and light diffusion characteristics
- High impact strength
- Extremely high stiffness
- Easy and fast installation

Property Profile	Value	Test Method
Panel body part	1000 mm (-2 mm; + 5 mm)	
Standard length	<6 meter -0 + 20 mm, >6 meter -0 + 30 mm	
Panel thickness	30 mm ± 0.8 mm	
Weight	4.2 kg/m ² ± 5%	
Hail impact	diam 20 mm V ≥ 21 m/s	TNO
Temperature resistance	-40 °C up to + 100°C	UL 746 B
U-Value	-1.55 W/m ² K	ISO 10077-3 EN673
Sound insulation	≤ 22dB	DIN 52210-75
Coeff.of linear thermal expansion	7 x 10 ⁻⁵ 1/C	DIN 53752
Light transmission		NEN-EN410
Transparent 112	60% ± 5%	
Solar transmission		NEN-EN410
Transparent 112	72% ± 5%	
Solar Heat Gain Coefficient		
Opal white WH7A092X	0.67	
Transparent 112	0.76	
Light to Solar Gain Ratio		
Opal white WH7A092X	0.78	
Transparent 112	0.88	
Shading Coefficient		
Opal white WH7A092X	0.75	
Transparent 112	0.85	

Impact Strength

Lexan* Thermopanel sheet has outstanding impact performance over a wide temperature range of -40°C to +100°C. The product has been shown capable of withstanding the extremes of weather : storms, hail stones, snowfall and ice formation.

Hail simulation

As a glazing material Lexan Thermopanel is subject to extremes of weather; storms, hailstones, wind, snowfalls and ice formation. Under these conditions, the product is virtually unbreakable and is able to withstand the subsequent temperature change to sunny conditions without breaking or buckling. In a test developed by the Dutch testing Institute TNO, samples of Lexan Thermopanel sheet have been subjected to simulated hailstones of varying diameters without significant damage. Polyamide balls of varying diameters are shot at the surface of the Thermopanel sample using a pressurized air gun.

In practice, hailstones with a diameter of 20 mm can reach a terminal velocity of around 21m/s. Under these conditions, traditional roof glazing materials such as glass and acrylic fails. It should be noted that when the glass and the acrylic are tested their failure characteristics are typically brittle, whilst the Lexan Thermopanel shows ductile behavior: upon impact the ball will leave indentations but the sheet will not break.

Hail Simulation Test Results

Material	Velocity with ball diameter 20 mm
Acrylic multi-wall sheet t = 16 mm	7-14 m/s
Float glass t = 4 mm	10 m/s
Lexan Thermopanel sheet t = 30 mm	≥21 m/s
Equilibrium velocity of hail	21 m/s

Light Transmission

Transparent Lexan Thermopanel sheet has a light transmission value of 60% ± 5%. Lexan Thermopanel is almost opaque to radiation in the UV region which helps prevent discoloration of sensitive and valuable materials placed under or behind the sheet.

UV Protection

Lexan Thermopanel sheet has one proprietary UV protected surface to help protect the system against the degrading effects of ultra violet radiation of sunlight and ensures long-term optical quality under all kind of severe weather conditions.

Warranty

SABIC Innovative Plastics offers a Ten (10) Year Limited Written Warranty on Lexan Thermopanel sheet covering discoloration, loss of light transmission and loss of strength due to weathering. See warranty for exact details.

Solar Control

For buildings with south facing aspects, Lexan Thermopanel sheet is available in a translucent opal white color. This color cuts down the brightness of the sun and reduces the solar heat gain through the panel.

Thermal Insulation

The multi-wall structure of Lexan Thermopanel sheet offers potential advantages where thermal insulation is a major consideration. The amount of energy transmitted through the material per square meter and per degree temperature difference, referred to as the K or U-Value is only 1.55W/m²K.

Temperature Resistance

Lexan Thermopanel sheet is characterised by its excellent retention of impact strength and stiffness at elevated temperatures, even over an extended period. Lexan Thermopanel sheet has a continuous use temperature range of -40°C up to + 100°C.

Fire Test Performance

Lexan Thermopanel sheet has good fire performance in accordance with national fire standards. More detailed information is available from the SABIC Innovative Plastics 'Sales Office or your local authorized dealer.

General Guidelines

Storage

Lexan Thermopanel sheet should be stored and protected against atmospheric influences like rain, sun etc. The masking should not be removed before installation and should not be exposed to the sun because of potential melting of the masking. After installation the masking should be removed.

Sawing / Drilling

Lexan Thermopanel sheet can be cut easily and accurately with standard workshop equipment. This includes common circular, hand and hacksaws both with fine toothed blades. The panel should be clamped to the worktable to avoid undesirable vibration and the saw dust should be blown out of the channels. Holes in the side wings can be drilled by a hand or power drill using a metal working bit. When drilling, support should be given immediately beneath the drill.

Sealing Recommendations

Since moisture build up and dust contamination inside the channels could be a problem, edge sealing of the open ended channels is very important. An anti dust impermeable tape, for the top channel ends, and an anti condensation venting tape, for the bottom channel end, have been developed by the company Multifoil - Holland; tel +31 30 2896333, fax +31 30 2894545.

In extreme dusty environments such as saw mills, welding stations etc. it is usually advisable to seal both channel ends with an impermeable tape. No tape should be left exposed and therefore additional aluminum or metal 'U' profile covering the bottom end tape is required.

Roof Glazing

To obtain a water tight connection on the roof ridge well known metal flashing accessories can be used. Fixing holes at both side wings must be pre-drilled approx. 5 mm larger than the diameter of the shank of the fixing to allow for thermal expansion. The center to center distance between the fixings may not exceed 500 mm.

To cover the tape and to facilitate condensation drainage out the channels a 'U' profile as indicated on section B is suggested.

To avoid sheet damaging and to restrict the rattle noise effect during extreme wind pressure/suction it is recommended to apply a neoprene or foam gasket on the metal purlins.

Metal fastener clips with laminated neoprene rubber, as indicated above, can be used to fix the side wings of the Lexan* Thermopanel sheet with bolts to the sides of the metal corrugated insulated panel. The metal fasteners force the Lexan Thermopanel sheet downwards and hold it in place during loading. The arised empty place on one side between the metal corrugated insulated panel and the multi-wall part of the Lexan Thermopanel sheet must be filled with a metal support profile, filled with P.U. As an alternative an infill piece may be cut out the metal corrugated insulated panel. It is recommended to use a barrier system, such as Polyester film or foam tape, if PVC coating is applied on the metal panel.



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