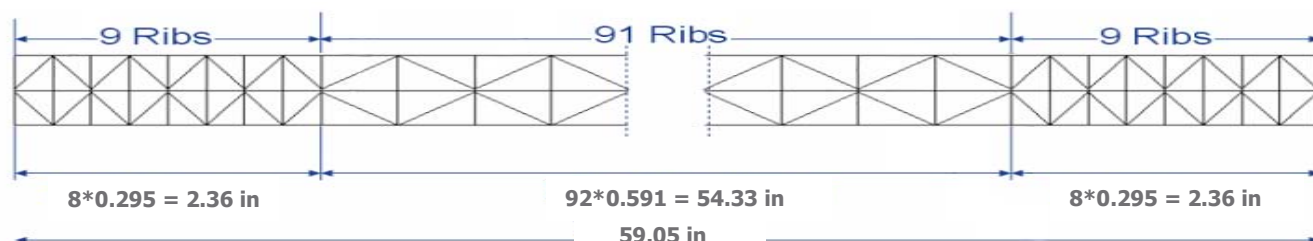


## PRODUCT DATASHEET

# LEXAN™ Ultra Stiff MWS LT2XP253X50 Sheet

### DESCRIPTION

LEXAN™ THERMOCLEAR™ Ultra Stiff MWS LT2XP253X50 sheet is a unique sheet which combines superb stiffness with durability and high light transmission. Lexan Ultra Stiff MWS LT2XP253X50 sheet is a member of the Lexan Thermoclear sheet range of high quality, multi-wall polycarbonate glazing sheets extruded from Lexan resin. Lexan Ultra Stiff MWS LT2XP253X50 sheet has a two sides proprietary UV protected surface, giving superior resistance to outdoor weathering. Lexan Ultra Stiff MWS LT2XP253X50 sheet has a 15 year limited written warranty against loss of light transmission, yellowing of the product and impact performance.



### LEXAN ULTRA STIFF MWS LT2XP253X50 SHEET OFFERS:

- Unique three wall with X-structure
- 2 side proprietary UV protected surface, giving superior resistance to outdoor weathering
- Good light transmission characteristics
- Extremely high stiffness
- Reduced rib distance at the edges of the sheet for excellent clamping in profile
- High impact strength
- Fire rating B, S2, d0
- Long-term weather resistance
- Fifteen (15) year limited written warranty

Property Profile	Value	Test Method
Sheet width	59.05 ± 0.079 in	
Standard length	≤ 19.68 ft -0+0.787 in > 19.68 ft -0+1.18 in	
Sheet thickness	25mm ±0.5 mm (0.984 in ±0.02 in)	
Weight	1.024 lb/ft <sup>2</sup> ±5%	
Hail impact	diam 0.787 in V≥ 68.90 ft/sec	TNO Test
Light transmission	65% ± 5%	ASTM D1003 or ISO 9050 (EN 410)
Temperature resistance	-40 up to +212°F	UL 746 B
U-Value	0.305 BTU / hr ft <sup>2</sup> °F	ISO10077 (EN673)
R Value	3.28 hr ft <sup>2</sup> °F/BTU	ISO10077 (EN673)
Coefficient of linear thermal expansion	3.75 x 10 <sup>-5</sup> in/in/°F	ASTM D696 or DIN 53752

### LOADING PERFORMANCE\*\*

Load (psf)	21	31	42	52	63
Distance between purling (ft)	∞	∞	∞	13	9.8

\*\*Based on theoretical calculation, to be verified by customer end-testing

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### IMPACT STRENGTH

Lexan Ultra Stiff MWS LT2XP253X50 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, hailstones, snowfall and ice formation.

### HAIL SIMULATION

As a glazing material Lexan Ultra Stiff MWS LT2XP253X50 sheet 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 Ultra Stiff MWS LT2XP253X50 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 Ultra Stiff MWS LT2XP253X50 sheet sample using a pressurized air gun.

In practice, hailstones with a diameter of 0.787 in can reach a terminal velocity of around 68.90 ft/s. Under these conditions, traditional roof glazing materials such as glass and acrylic fail.

It should be noted that when the glass and the acrylic are tested their failure characteristics are typically brittle, whilst the Lexan Ultra Stiff MWS LT2XP253X50 sheet 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=16mm	23-46 ft/s
Float glass t=4 mm	33 ft/s
Lexan Ultra Stiff MWS LT2XP253X50	≥69 ft/s
Equilibrium velocity of hail	69 ft/s

SABIC Innovative Plastics, Specialty Film & Sheet offers a Fifteen (15) Years Limited Written Warranty<sup>#</sup> on Lexan Ultra Stiff MWS LT2XP253X50 sheet covering loss of strength or impact due to weathering.

### UV PROTECTION

Lexan Ultra Stiff MWS LT2XP253X50 sheet has one proprietary UV protected surface to help protect the system against the degrading effects of ultra violet radiation of sunlight and promotes long term optical quality under several kinds of severe weather conditions. This UV protected surface, indicated on the masking, should always face outwards.

### THERMAL INSULATION

The multi-wall structure of Lexan Ultra Stiff MWS LT2XP253X50 sheet offers potential advantages where thermal insulation is a major consideration. The amount of energy transmitted through the material per square foot and per degree temperature difference, referred to as the U-Value, is 0.305 BTU / hr ft<sup>2</sup> °F. The reciprocal of this is the R value which is 3.28 hr ft<sup>2</sup> °F/BTU.

<sup>#</sup> Limited Written Warranty

SABIC Innovative Plastics, Specialty Film & Sheet offers a Fifteen (15) Years Limited Written Warranty (full text available on request) on Lexan Ultra Stiff MWS LT2XP253X50 sheet covering discoloration, loss of light transmission and loss of impact strength due to weathering as more specifically defined in such warranty. Please review the Fifteen (15) Years Limited Written Warranty for conditions and other details and consult SABIC Innovative Plastics, Specialty Film & Sheet Sales Office for more information.

### LIGHT / SOLAR TRANSMISSION PROPERTIES

Solar heat gain within a building is caused by heat input from radiation emitted from the sun. Sunlight entering the building heats the air both directly and through absorption by the framework, furniture etc. and is released as infra-red energy. In combination with the insulating properties of Lexan Ultra Stiff MWS LT2XP253X50 sheet, this prevents heat escaping faster than it is created causing a temperature increase, the so-called 'greenhouse effect'. The temperature can be controlled by venting, often in combination with specially tinted opal white or Lexan Ultra Stiff MWS LT2XP253X50 SC IR sheet which contains a proprietary additive which selectively absorbs the near infrared region of the light. Lexan Ultra Stiff MWS LT2XP253X50 sheet is, therefore, available in many different colors or with IR additives which both can cut down the brightness of sunlight to a pleasing level and can reduce heat buildup inside the building. Calculations for solar heat input through glazing are normally based on data published in 'The Institution of Heating and Ventilating Engineers Guide Book'. These calculations are based on clear glass and correction factors or shading coefficients are then applied when alternative glazing materials are used.

### FIRE TEST PERFORMANCE

Lexan Ultra Stiff MWS LT2XP253X50 sheet has good fire performance in accordance with national fire standards. More detailed information is available from SABIC Innovative Plastics, Specialty Film & Sheet Service Centre or your local representative.

### TEMPERATURE RESISTANCE

Lexan Ultra Stiff MWS LT2XP253X50 sheet is characterized by its excellent retention of impact strength and stiffness at elevated temperatures, even over an extended period. Lexan Ultra Stiff MWS LT2XP253X50 sheet has a continuous use temperature rating of -40°F up to +212°F.

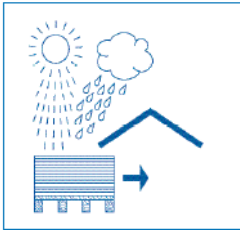
## PRODUCT DATASHEET

# LEXAN™ Ultra Stiff MWS LT2XP253X50 Sheet

### GENERAL GUIDELINES

#### STORAGE

Lexan Ultra Stiff MWS LT2XP253X50 sheet should be stored and protected against atmospheric influences like sun, rain etc. The masking should not be removed before installation.



#### SAWING

Lexan Ultra Stiff MWS LT2XP253X50 sheet can be cut easily and accurately with most standard workshop equipment. This includes common circular, hand and hacksaws both with fine-toothed blades. The sheet should be clamped to the worktable to avoid undesirable vibration and the saw dust should be blown out of the channels.

#### CLEANING RECOMMENDATIONS

Periodic cleaning using correct procedures with compatible cleaners is recommended to prolong service life. For general cleaning, it is recommended that the following instructions be adhered to. Clean surface with high pressure water and/or steam cleaner. Use of additives to the water should be restricted to those compatible with Lexan Ultra Stiff MWS LT2XP253X50 sheet.

Important:

- Never use an abrasive or highly alkaline cleaners on Lexan Ultra Stiff MWS LT2XP253X50 sheet.
- Never scrub with brushes, steel wool or other abrasive materials.
- Don't clean Lexan Ultra Stiff MWS LT2XP253X50 sheet in the hot sun or at elevated temperatures as this can lead to staining.

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