

Description

Lexan* Thermoclear* Venetian sheet grades are members of the Lexan Thermoclear sheet range of high quality, multi-wall polycarbonate glazing sheets extruded from Lexan resin. Lexan Thermoclear Venetian is Lexan Thermoclear which has been screen printed with white stripes on the inner surface. This reduces heat build up beneath the sheet, e.g. inside the building. Lexan Thermoclear Venetian drastically reduces the Infra-Red (IR) sun rays absorption whilst maintaining a very good light transmission. About 50% of the total IR rays are reflected to the exterior, resulting in lower solar transmission through the sheet. Lexan Thermoclear Venetian sheet offers: high impact strength, twin, triple, five and six wall structures, light weight, easy installation, one side U.V. protection, long-term weather resistance, one side screen printing, outstanding thermal insulation and low solar transmission.

Typical Property Values ♦

Grade-Color	Gauge (mm)	Weight (kg/m ²)	Sound Red. value [‡] (dB)	U-Value [¥] (W/m ² K)	Hail Impact Test [¶] (m/sec)	LT* D65 (%LT)	DST# (%DST)	TST# (%TST)	SHGC#	LSGR	SC
LTC2RS13VENS 112BWS	6	1.3	17	3.56	>21	49	51	59	0.68	0.83	0.68
LTC2RS17VENS 112BWS	10	1.7	19	3.02	>21	46	49	56	0.56	0.82	0.65
LTC3TS27VENS 12BWS	16	2.7	21	2.27	>21	41	43	54	0.54	0.76	0.62
LTC3TS28VENS 112BWS	16	2.8	21	2.40	>21	41	43	54	0.54	0.76	0.62
LTC3X29VENS 112BWS	16	2.9	22	2.10	>21						
LTC5RS33VENS 112BWS	20	3.3	22	1.77	>21	40	41	52	0.52	0.77	0.60
LTC6RS35VENS 112BWS	25	3.5	23	1.45	>21	38	39	57	0.57	0.67	0.65
LTC5X38VENS 112BWS	32	3.8	24	1.32	>21	36	38	52	0.52	0.69	0.52

♦ These property values have been derived from Lexan* resin data for the material used to produce this sheet product

‡ Sound reduction value based on SABIC Innovative Plastics calculated values according DIN 52210-75

¥ U-values based on SABIC calculated values according ISO 10077 (EN673)

¶ Hail simulation test developed by TNO, the Netherlands, artificial hailstones of 20 mm diameter are shot at the sheet at min. speed of 21 m/sec.

• LT (Light Transmission), DST (Direct Solar Transmission) and TST (Total Solar Transmission) measurements according ISO 9050 (EN 410) on 600x600 mm samples

TST (Total Solar Transmission) divided by 100 equals Solar Heat Gain Coefficient (SHGC) or g-value.

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Definitions

Light Transmission D65 (% LT):

Percentage of the incident visible light that passes through the sheet.

Direct Solar Transmission (%DST):

Percentage of incident solar radiation that passes directly through the sheet.

Total Solar Transmission (%TST):

The percentage of incident Solar radiation transmitted by the sheet which includes the direct Solar Transmission plus the part of the Solar Absorption reradiated inward.

Solar Heat Gain Coefficient (SHGC):

or g-value is the total solar energy that enters the interior of a building, divided by 100.

Shading Coefficient (SC):

The ratio of the total solar radiation transmitted by a given material to that transmitted by normal 3 mm glass, whose light transmission is 87%. $SC = \%TST/87$.

Light to Solar Gain Ratio (LSGR):

The ratio between total light transmission (LT) and the total solar transmission (TST).

Solar Transmission

Transparent grades of Lexan Thermoclear have excellent light transmission. Although Lexan Thermoclear has less solar transmission versus traditional glass, we advise for buildings in hot climates or facing south, Lexan Thermoclear in IR version (absorbing infra red) which will reduce the solar transmission substantially up to 70%.

UV Resistance

Despite transmitting visible light very well, Lexan Thermoclear Venetian sheet is almost opaque to radiation in the UV and far infra-red region. This useful shielding property can prevent discoloration of sensitive materials such as fabrics or other organic materials placed under or behind Lexan Thermoclear Venetian sheet glazing in, for example, a factory warehouse, museum or shopping centre.

The complete Lexan Thermoclear Venetian sheet range features a proprietary one side surface treatment designed to protect the sheet against the degrading effects of ultra-violet radiation in natural sunlight.

Warranty

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

Thermal insulation

The multi-wall structure of Lexan Thermoclear Venetian sheet offers significant advantages where thermal insulation is a major consideration. The hollow form provides excellent insulation characteristics with heat losses significantly lower than mono-wall glazing materials.

Fire Test Performance

Lexan Thermoclear Venetian sheet has good fire behavior characteristics, and receives high ratings in several major European fire performance tests. More detailed information is available from your local SABIC Innovative Plastics' Service Center or authorized dealer.

Sound insulation

The sound insulation characteristics of a material are largely pre-determined by its stiffness, mass and physical construction. According to DIN 52210-75, the maximum obtainable sound is 24dB.

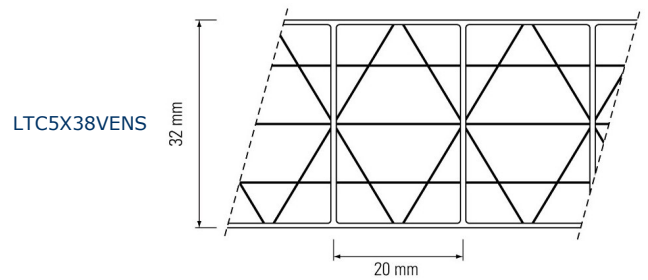
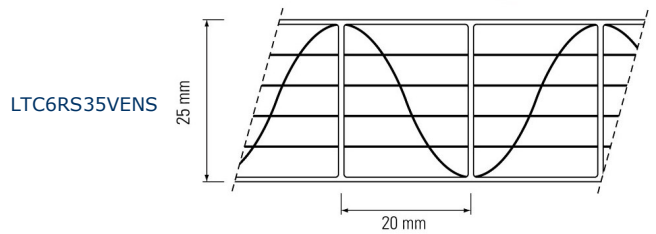
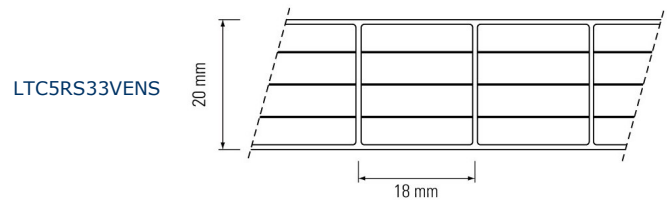
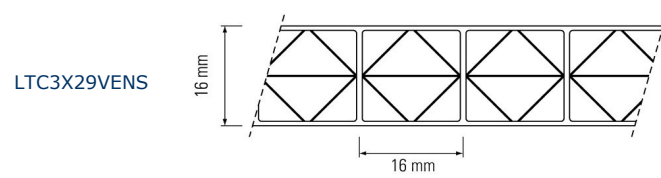
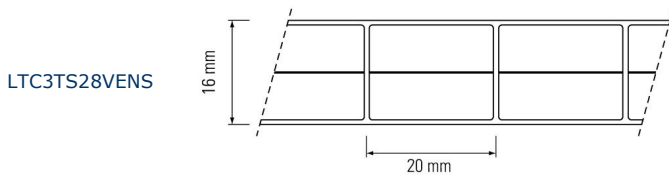
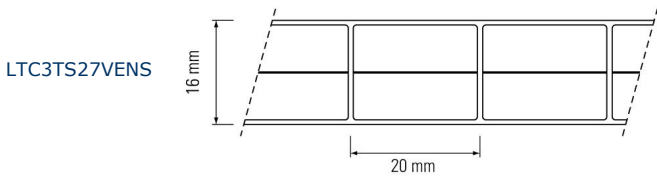
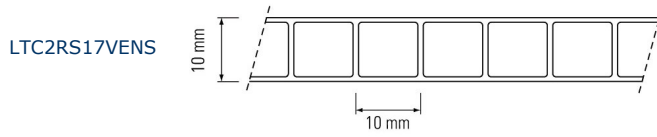
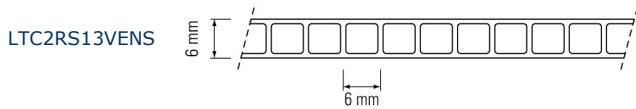
Impact Strength

Lexan Thermoclear Venetian sheet has outstanding impact performance over a wide temperature range, -40°C to 120°C, and also after prolonged outdoor exposure.

Hail Simulation

As roofing material Lexan Thermoclear Venetian sheet is subjected to the extremes of weather; storms, hail stones, wind, snowfalls and ice formation. Under these conditions, the product is virtually unbreakable and is able to accommodate the subsequent temperature change to sunny conditions without breaking or buckling. It should be noted that when the glass and Acrylic are tested their failure characteristics are typical brittle, whilst Lexan Thermoclear Venetian sheet shows a ductile deformation one, e.g. small indentations. SABIC Innovative Plastics offers a Ten Year (10) Warranty on Lexan Thermoclear Venetian sheet covering loss of strength or impact due to weathering.

Structures and nomenclatures



General guidelines

Storage

Lexan Thermoclear Venetian sheet should be stored and protected against atmospheric influences like sun, rain, etc. Care should be exercised when handling and transporting Lexan Thermoclear Venetian sheet in order to prevent scratches on the panel surface and damage to the panel edges.

Cleaning

SABIC Innovative Plastics recommends the following cleaning agent SUMALIGHT D12 from Johnson Diversey Lever (check Technical manual for further details). Small surfaces can be cleaned with luke warm water, using a soft sponge and a solution of mild soap. Do not use any corrosive materials or chemicals to clean Lexan Thermoclear Venetian sheets. Using any other cleaning agents than the recommended one must have the prior approval of SABIC Innovative Plastics in order to validate the Lexan Thermoclear Venetian sheet warranty.

Chemical Resistance

Neoprene, EPT or EPDM rubbers with an approximate Shore Hardness of A65 are recommended. When using glazing compounds it is essential that the sealant system accepts a certain amount of movement to allow for thermal expansion, without loss of adhesion to the frame or sheet. Silicone sealants are generally recommended for use with Lexan Thermoclear Venetian sheet. It is strongly advised when using sealing to check before compatibility before use.

Sawing

Lexan Thermoclear Venetian sheet can be easily and accurately cut with standard workshop equipment. This includes common circular, hand and hacksaws. Saw dust should be blown out of the channels using clean compressed air. Circular saw blade should be fine-toothed panel blades. When hand or power hacksaws are used, the sheet should be clamped to the worktable to avoid undesirable vibration.

Thermal expansion allowance

Since Lexan Thermoclear Venetian sheet has a greater coefficient of linear thermal expansion than that of traditional glazing materials, care should be taken to allow for free expansion of the sheet to prevent bowing and internal stress build-up. Thermal expansion allowance must be made for both the length and width of the Lexan Thermoclear Venetian sheet. In general, thermal expansion of the sheet is approximately 3 mm per linear meter.



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