# LEXAN™ EXELL™-D SHEET

## PRODUCT DATASHEET

## DESCRIPTION

LEXAN™ EXELL™-D sheet is a transparent polycarbonate sheet with proprietary UV protection on both sides offering excellent weathering properties. With its excellent impact resistance it is a good candidate for a wide variety of building and construction applications. LEXAN EXELL-D sheet can be easily cold formed into gentle curves which makes it a good material choice for skylights, covered walkways, barrel vaults etc. LEXAN EXELL-D sheet is thermoformable and can be thermoformed into the desired geometry whilst retaining the UV resistant protection specially developed for weather resistant applications.

## TYPICAL PROPERTY VALUES ◆

| PROPERTY | TEST METHOD | UNITS | VALUE |
|---|---|---|---|
| **PHYSICAL** | | | |
| Density | ISO 1183 | g/cm³ | 1.20 |
| Water absorption, 50% RH, 23 °C | ISO 62 | % | 0.15 |
| Water absorption, saturation, 23°C | ISO 62 | % | 0.35 |
| **MECHANICAL** | | | |
| Yield stress 50 mm/min | ISO 527 | MPa | >60 |
| Yield strain 50 mm/min | ISO 527 | % | 6 |
| Nominal strain at break 50 mm/min | ISO 527 | % | >100 |
| Tensile modulus 1 mm/min | ISO 527 | MPa | 2300 |
| Flexural strength 2 mm/min | ISO 178 | MPa | 90 |
| Flexural modulus 2 mm/min | ISO 178 | MPa | 2300 |
| **IMPACT** | | | |
| Charpy impact, notched 23°C, 3.0 mm | ISO 179/1eA | kJ/m² | 75 |
| Izod impact, unnotched 23°C, 3.0 mm | ISO 180/1U | kJ/m² | NB |
| Izod impact, notched 23°C, 3.0 mm | ISO 180/1A | kJ/m² | 70 |
| **THERMAL** | | | |
| Vicat softening temperature, rate B/120 | ISO 306 | °C | 145 |
| Temperature of deflection under load (type A), 1.8 MPa, flat | ISO 75-2 | °C | 127 |
| Thermal conductivity | ISO 8302 | W/m.°C | 0.2 |
| Coefficient of linear thermal expansion, 23-55°C | ISO 11359-2 | 1/°C | $7 \times 10^{-5}$ |
| Ball pressure test 125 ±2°C | IEC 60695-10-2 | - | Pass |
| **ELECTRICAL** | | | |
| Volume resistivity | IEC 60093 | Ohm.cm | $>10^{15}$ |
| Dielectric strength, in oil, 3.2 mm | IEC 60243-1 | kV/mm | 18 |
| **FIRE RATINGS** | | | |
| **Building & Construction** | | | |
| Europe | EN13501-1 | - | b,s1,d0 (2-6mm) |

◆ These property values have been derived from LEXAN™ resin data for the material used to produce this sheet product. Variation within normal tolerances are possible for various colors. These typical values are not intended for specification purposes. If minimum certifiable properties are required please contact your local SABIC, Specialty Film & Sheet representative. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties are measured on injection molded samples. All samples are prepared according ISO 294.

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## LIGHT TRANSMISSION

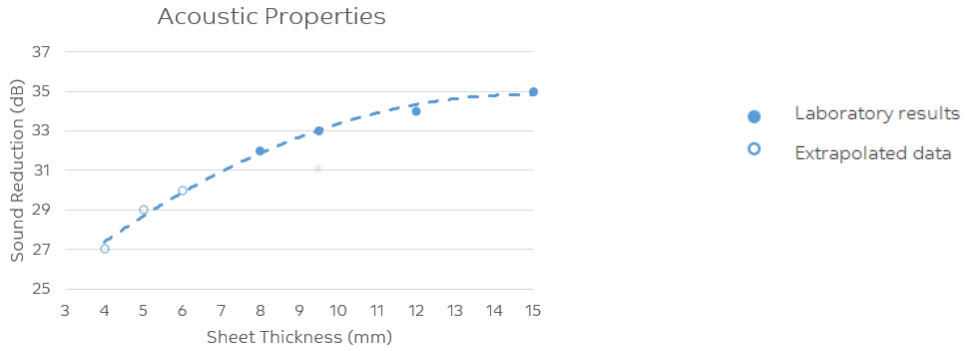
Transparent LEXAN™ EXELL™-D sheet have excellent light transmission, between 84 and 87%. However for buildings in hot climates or with south facing aspects, LEXAN EXELL-D sheet is available in translucent bronze, grey and opal white. LEXAN EXELL-D is essential opaque to all wave lengths below 385 nanometers. This useful shielding property can help prevent discoloration of sensitive materials placed under or behind LEXAN EXELL-D sheet.

## UV PROTECTION

LEXAN EXELL-D sheet has proprietary UV protected surfaces, giving excellent durability to outdoor weathering. This superior UV resistance and toughness of LEXAN EXELL-D sheet is backed by a 10 years limited written warranty against yellowing, loss of light transmission and breakage.

## SOUND REDUCTION

Below graph shows the acoustic properties for different thicknesses of the sheet:




## SOUND INSULATION (noise reduction dB)

| Thickness (mm) | ISO 717-1 ($R_W$) | EN 1793-2 ($DL_R$) |
|---|---|---|
| 8 | 32 | 28 |
| 9.5 | 33 | 29 |
| 12 | 34 | 30 |
| 15 | 35 | 32 |

## PERFORMANCE

LEXAN EXELL-D sheet has a good fire performance against many national fire codes dependant on thickness and color; please check with the local sales office for details.

## PRODUCT AVAILABILITY

LEXAN EXELL-D sheet is normally manufactured in the standard sizes listed below. Deliveries from stock or cut to size can be ordered via our customer service organisation.

**Standard gauge in mm:** 2 - 3 - 4 - 5 - 6 – 8 – 9.5 – 12- 15
**Standard sizes:** 2050 x 3050 mm (is max. size for 15mm), 2050 x 6100 mm
**Masking:** Top side: Coex. opal white PE/purple print, Bottom side: Coex. transparent PE
**Standard colors:** clear code 112, solar bronze code 5109, solar grey code 713, opal white code WH7D287O and opal white code WH4D348O (opal whites max. 8MM)

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