

## Glossary

**Aluminum Tape:** Tape used to cover the top end of a multiwall sheet to prevent water, dust, debris, and bugs from entering flutes.

**Anti-Drip Coating:** A unique proprietary hydrophilic coating which reduces the contact angle of condensation droplets. Also known as Dripgard.

**Cold Bending (Bending Radius):** Multiwall polycarbonate sheets can be successfully cold bent to suit many glazing applications such as arched walkways, barrel vaults, and domed roof lights. Sheets must always be bent longitudinally, never across the width of the sheet. Flexing or installing a sheet past the max bending radius or to the point of buckling may cause rapid deterioration in highly stressed areas. Sheet thickness and structure design will impact the extent of the radius bending. The basic rule states that sheets can be radiused to 100 their thickness ( $R = T \times 100$ ).

**Coefficient of Thermal Expansion (CTE):** Every material has a different response to heat, which is characterized by its thermal expansion coefficient (CTE). The coefficient of thermal expansion measures how much a material expands per degree change in temperature compared to its original size. CTE is calculated by the change in length divided by the quantity of the length at room temperature, multiplied by the change of temperature.

**Deflection:** The degree to which a structural element is displaced under a load. Also known as DMX.

**Diffused Light:** Soft light with neither the intensity nor the glare of direct light. Scattering in many different directions, diffused light is spread over and reflected around objects, and does not cast harsh shadows.

**DRIPGARD:** DRIPGARD is a proprietary hydrophilic coating available on SABIC'S LEXAN™ THERMOCLEAR™ sheet products. The DRIPGARD coating on the inner surface of the LEXAN™ sheet reduces the formation of condensation droplets, improving greenhouse production by preventing crop spoilage and loss of light transmission.

**Easy Clean:** Self-cleaning polycarbonate sheet which features a unique hydrophobic coating on the outside surface. This coating reduces the surface tension of polycarbonate and increases the contact angle of water to the sheet. This causes larger droplets to form and wash away dirt, leaving the sheet almost spotless.

**Flame Spread:** The burning characteristics of building materials.

**Flutes:** Multiwall polycarbonate is defined by two or more layers of polycarbonate sheeting attached by perpendicular supports. “Flutes” are formed by these vertical interior walls within the layers. These flutes trap air, thus making this hollow structure an excellent thermal barrier. Flutes also help to keep the weight low and give the sheet its strength with long spanning capabilities.

**H-Channel:** A polycarbonate profile used vertically to join two multiwall polycarbonate sheets.

**Impact Strength:** A polycarbonate panels ability to withstand a suddenly applied load, absorbing the mechanical shock. I.E. the maximum force a polycarbonate panel can withstand without breaking. When expressed in terms of energy, the impact energy required to fracture a panel.

**K-Value:** The measurement of heat conductivity of a particular material.

**Light Transmission:** Light transmission is the percentage of light that passes through a polycarbonate sheet. When a light beam strikes a polycarbonate sheet, some light is reflected, some absorbed, and the rest is transmitted. Light transmission depends on the reflectance of both surfaces of the sheet and the absorption of light into the sheet. Light transmission decreases with an increase in thickness.

**Masking Film:** A removable protective film tape with no adhesive residue. The masking film prevents scratching and damage of the polycarbonate sheet during transport, fabrication, and installation.

**Multiwall:** A polycarbonate sheet consisting of two or more layers depending on the thickness of the sheet. Flutes are formed by the vertical interior walls within the layers.

**PAR:** Photosynthetic Active Radiation (PAR) is a term that refers to the amount of light within the 400- to 700- nanometer wavelength range. This is the range of light within the visible light range that is used by plants for photosynthesis and is regarded by many horticulturalists as being critical for proper plant growth and development.

**Point Fasten:** A screw that is driven into wooden/metal structure by rotating, most commonly by means of a screwdriver.

**Polycarbonate Translucent Wall:** Used as a façade material or for interior cladding, polycarbonate translucent walls are an efficient and effective way to transmit natural light into a building. Polycarbonate can be used as glazing on vertical, sloped, or curved walls.

**Purlin:** A horizontal structural member often made from wood or steel that directly supports the roofing material. Purlins transfer the roof load to the main roof structure such as trusses, load bearing walls, or large rafters. Purlins run perpendicular to the slope of the roof, vary in size, and the distance between depends on the type of structure, loading requirements, and local codes. Check with your local building inspector or local code requirements.

**PVC:** Polyvinyl Chloride (PVC) is a thermoplastic material. The basic raw materials for PVC are derived from salt and oil. PVC comes in two forms; rigid and flexible. Characteristics of PVC include: durable, strong, lightweight, corrosion and fire resistant, making it an ideal construction material.

**R-Value:** Measures heat gain. A higher r-value is better. To calculate the r-value take 1 and divide by the u-value.

**Rafter:** A series of vertical timbers, usually having a pronounced slope, used for supporting the sheathing and covering of a roof.

**Ridge Cap:** A flexible flashing piece that can be bent to a variety of roof pitches to cover the gap at the very top of a gable type roof.

**Shading Coefficient:** The amount of heat passing through glazing (SC).

**Smoke Density:** The visibility through smoke when material is on fire.

**Solar Heat Gain Coefficient (SHGC):** This is a measurement of the heat energy that comes through a glazing product. This includes heat energy from the visible and infrared portions of the light spectrum.

**Solar Transmission:** Building glazings that permit high levels of natural light may also lead to rapid interior heat buildup due to the penetration of near-infrared (IR) radiation through the glazing. The percentage of the directly transmitted heat that passes through glazing plus the absorbed and inwardly re-radiated heat is called solar transmission.

**SunXP:** A polycarbonate sheet that offers a higher resistance to UV radiation, yellowing, and loss of light transmission.

**Thermal Expansion/Contraction:** In response to changes in temperature, an increase in sheet length is thermal expansion and a decrease in sheet length in thermal contraction. Polycarbonate sheets expand and contract under the influence of temperature change. Allowance for this difference must be taken into consideration by the system used to mount the sheets. As a rule of thumb, 120" of polycarbonate will expand/contract ½" over 100 degrees Fahrenheit.

**Thermal Installation:** A polycarbonate sheets ability to reduce the transfer of heat energy by limiting conduction, convection, and/or radiation. The multiwall construction creates air spaces, increasing thermal resistance. Thermal insulation can keep a building warm or cool. The R-Value indicates how well a material insulates.

**Tongue and Groove:** A tongue and groove joint is a basic “plug-in” connection. One side of the panel has a groove in it. The other side of the panel has a tongue with a matching shape that fits into the groove. Polycarbonate panels with a tongue and groove joint interlock forming walls or windows, eliminating the need for vertical profiles.

**U-Value:** The overall heat transfer coefficient of a material. In simpler terms, it is a measurement for the insulation value of a product and is the inverse of the R-Value.

**U-Channel:** A polycarbonate profile used horizontally to cap off the top and bottom of a multiwall polycarbonate sheet.

**Vent Tape:** Tape used on the bottom end of a multiwall sheet to allow for condensation to drain and to prevent water, dust, debris, and bugs from entering the flutes.

**Visible Light Transmittance:** Visible Light Transmittance or as it’s known Visible Transmittance (VT) is a measure of how much visible light passes through a glazing material such as a window, door, or skylight. The visible spectrum of sunlight is defined as the wavelengths that are visible to the human eye (380 to 720 nanometers). A glazing product with a higher Visible Transmittance delivers more visible light in a space.

**Weep Holes:** Small holes drilled in the bottom of a polycarbonate “U-profile” to allow for drainage and moisture release. It is recommended to drill 1/8” weep holes every 12 inches on center.

**Yellowing Index:** The yellowing index is a number that describes the change in color of a test sample toward yellow. The polycarbonate industry standard is to measure “yellowing” in terms of Delta YI. The difference in the color of the polycarbonate sheet at any point in time to its original color.