



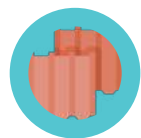
**NOVALITE**  
TOGETHER, WE BUILD BRILLIANCE!

# MULTIWALL

Hollow Polycarbonate Sheet

# NOVALITE® Multiwall

NOVALITE® Multiwall polycarbonate system provides outstanding flexibility in design and advanced heat reflecting and light transmitting performance. An advanced construction of internal walls and cells gives excellent insulation properties and impact strength 250 times that of glass. Both sides of sheet have a co-extruded UV barrier which provides protection from 99.9% harmful UV radiation, giving superior resistance to outdoor weathering. Made from PRIME GRADE polycarbonate resin, Novalite® Multiwall sheets ensures high impact strength, clarity and excellent weather resistance.



## VERSATILE

Engineered to suit a wide array of applications which include roofing & glazing on horizontal, vertical and inclined surfaces.



## LIGHT TRANSMISSION

Wide range of options in terms of clear as well as diffused light. Multiwall Sheets can provide a maximum of 90% and minimum of 27% light transmission.



## 99.9% UV PROTECTION

A co-extruded Ultraviolet barrier on surface of the sheets provides near total protection against UV radiation and prevents TUFLITE® Multiwall from physical degradation and yellowing.



## OPTICAL & THERMAL PERFORMANCES

Allows the light to enter, at significantly lower heat transmission levels, to ensure optimum illumination with maximum comfort.



## CHEMICAL RESISTANCE

Resistant to invasive chemicals and substances, including several mineral and organic acids, oxidizing agents and several others.



## ENERGY EFFICIENCY

Excellent thermal insulation results in phenomenal savings in terms of primary capital and running costs of air conditioning and heating.



## WARRANTY

10 years warranty. A promise to perform.



## IMPACT RESISTANCE

250 times stronger than glass and 30 times tougher than acrylic.



## LIGHT WEIGHT

Easy to carry and maneuver. 16% the weight of standard glass and 34% the weight of acrylic sheets.



## FIRE RETARDANT

Self extinguishing property ensures that TUFLITE® sheets do not aid flame spread. Sheets do not release toxic fumes posing no threat to human life.



## PRIME GRADE POLYCARBONATE RESIN

Manufactured from high quality SABIC/LEXAN Polycarbonate resin, engineered for high impact resistance and excellent transparency.



## WEATHER RESISTANCE

Tolerates extreme outdoor weather conditions, while retaining its normal mechanical properties at temperatures ranging from -40°C to +120°C



## EASE OF INSTALLATION

Convenient slot-in installation system, with a one piece H bar system made from Polycarbonate. Two piece H bar system is also available where greater design flexibility is required made from Aluminum in 50mm and 60mm width.



## WIND LOAD

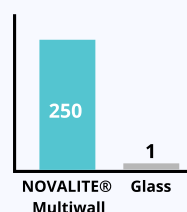
Suitable for use in high wind areas.

## COMPARISON TO GLASS

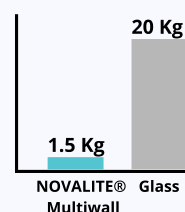
Based on 8mm clear NOVALITE® Multiwall vs 8mm clear standard glass.



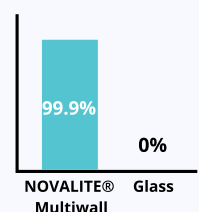
### Impact Resistance



### Weight (per m²)



### UV Protection



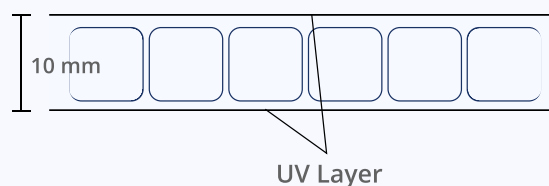
## APPLICATIONS

NOVALITE® multiwall is an advance polycarbonate glazing system offering design freedom in several segments of the building industry like commercial, domestic and industrial applications. Applications include skylights, pergola, patios, carports, gazebos, pool covers, green houses, north light glazing, atriums in shopping malls, stadiums, office partitions, window shutters, etc.

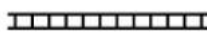

## PRODUCT RANGE

<b>NOVALITE®</b>	Multiwall Polycarbonate sheet with UV Coating
<b>TILEGLASS</b>	Textured Multiwall Polycarbonate sheet for Diffused Light

## GAUGES 10 MM



## STANDARD DIMENSIONS

Structure	Thickness (mm)	Area Weight (Kg/m <sup>2</sup> )	U-Value (W/m <sup>2</sup> °k)	Width (mm)	
				1220	2100
<b>TWIN WALL</b> 	4	0.8	3.8	✓	✓
	4.5	1.0	3.7	✓	✓
	6	1.3	3.5	✓	✓
	8	1.5	3.3	✓	✓
	10	1.7	3.0	✓	✓
<b>X- STRUCTURE</b> 	16	2.7	2.1		✓
	25	3.4	1.7		✓
	32	3.7	1.6		✓
	35	3.9	1.5		✓
	40	4.1	1.4		✓

## LIGHT AND HEAT TRANSMISSION

### SHADING CO-EFFICIENT RATIO (SC)

6mm			10mm	
Clear	0.90	WARMEST	Clear	0.85
Bronze Tint	0.77		Bronze Tint	0.75
Grey Tint	0.61		Grey Tint	0.60
Opal	0.41		Opal	0.40
Metallic	0.39		Metallic	0.38
Green	0.65	COOLEST	Green	0.31

Shading Co-efficient (SC): A ratio of the warming effect of sun's rays through a sheet divided by the sun's warming effect through 3mm float glass (300-2500nm). The lower the figure the cooler it is under the sheet.

### LIGHT TRANSMISSION (LT)

6mm			10mm	
Clear	80%	MORE LIGHT	Clear	79%
Bronze Tint	40%		Bronze Tint	36%
Grey Tint	35%		Grey Tint	32%
Opal	28%		Opal	22%
Metallic	21%		Metallic	18%
Green	38%	LESS LIGHT	Green	32%

Light Transmission: % of visible light transmission (400-700nm) that passes through the sheet. The lower the figure the less light passes through the sheet.



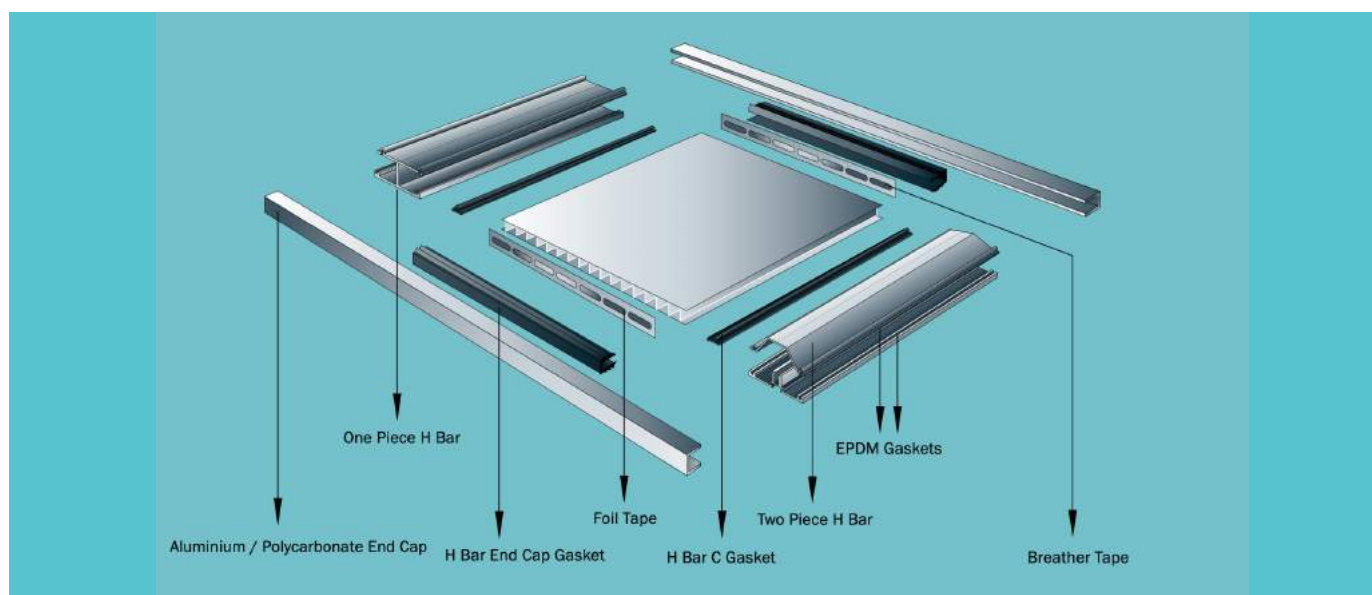
## PROPERTIES

PROPERTY	STANDARD	CONDITIONS	UNITS	VALUE
Density	ASTM D792	-	g/cm <sup>3</sup>	1.2
Heat Deflection Temperature	ASTM D648	1.82 MPa	°C	130
Co-eff of Linear Thermal Expansion	ASTM D696	-	cm/cm °C	6.5 x 10
Service Temperature	ASTM C177	-	W/m <sup>2</sup> °K	0.21
Thermal Conductivity	ASTM D638	10mm/min	MPa	65
Tensile Strength at Yield	ASTM D638	10mm/min	MPa	60
Tensile Strength at Break	ASTM D638	10mm/min	%	6
Elongation at Yield	ASTM D638	10mm/min	%	>90
Elongation at Break	ASTM D638	40mm/min	MPa	2300
Tensile Modulus of Elasticity	ASTM D790	1.3mm/min	MPa	100
Flexural Strength	ASTM D790	1.3mm/min	MPa	2600
Flexural Modulus	ISO 6603/1	2mm/min	Joules	158
Impact Falling Weight	ASTM D785	-	R Scale	125R
Rockwell Harness				

*Values mentioned are based on Polycarbonate Resins as stated in literature*

## THE SYSTEM EXPLAINED

NOVALITE® multiwall polycarbonate system is advanced in design yet simple to install. The sheets simply slot into an H-Bar ready for fixing to the structure. A two piece H-Bar is also available for increased flexibility. The glazing bar system allows for thermal expansion and eliminates the need for penetrations through the sheet, hence the structure is 100% water tight.



# INSTALLATION INSTRUCTIONS\*

**Carefully read all installation instructions before you start.**

- Always exercise extreme care when working on a roof. Use walking boards along purlins.
- Never walk directly on the sheeting.
- Always wear eye protection while using cutting tools.
- For safety precautions NOVALITE® recommends the use of safety mesh for installations above 3mtrs.

**TABLE 1**

Recommended Rafter and Purlin Nominal Spacing (mm)

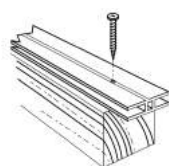
Gauge	Sheet Width	Rafter Centres	Purlin Centres
10mm	1000	1050	1200
10mm	1220	600	1200
10mm	2100	1000	1200

**1** Always Install NOVALITE® Multiwall sheet with vertical ribs in glazing & cladding applications and in the direction of the slope for roofing applications. This will ensure easy drainage of moisture in case of condensation. Improper installation can lead to accumulation of moisture within the flutes and promote the growth of fungi and moss, especially in tropical regions.

**2** Follow recommendations for rafter and purlin spacing as specified for NOVALITE® Multiwall Sheets.

**3** NOVALITE® Multiwall sheets can be cut using a sharp blade, hand saw or a circular saw with a fine tooth blade suitable for plastics. Dust particles (swarf) should be cleared from the flutes using compressed air (or sucked out with a vacuum cleaner). All cut edges should be free of notches. In case of reducing the width of NOVALITE® Multiwall sheets trimming should be done as close as possible to the previous rib so that optimum support to clamping action of the glazing bar is achieved.

**4** Remove masking partially, from the edges of the sheet and apply a Breather Tape to the top and Foil Tape to the bottom ends.



## Two piece H Bar system

Place the first and second measured and cutbase glazing bars on the structure.



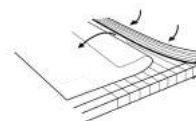
## One piece H Bar system

Secure H Bar to the purlin or rafter with a screw (gauging not exceeding 12g) at no greater than 1200mm apart.

## Two piece H Bar system

Fasten the Base Glazing Bars to the rafter with self fastening screws (10 gauge – 16tpi) at no greater than 500mm apart by fixing through the centre of the base glazing bar and securing it firmly onto the supporting structure. (Self fastening screws for wood are 30mm long; self fastening screws for metal are 21mm in length).

**6** Pull the masking back on the sides of the sheet and place the H Bar C gasket along the whole length of both sides of the sheet. Place one side of the sheet into fixed H Bar.



**7** One piece H Bar system Place the next bar on the other side and secure it to the support structure.



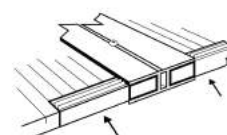
## Two piece H Bar system

Place the sheet between the two secured glazing bars. Position the first top glazing bar in line with the base. Secure the two bars using a rubber mallet. Once the next sheet is installed, the second and subsequent top glazing bars can be fitted.

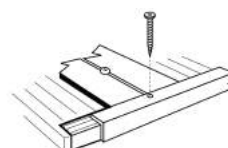


**8** Repeat steps 6-8 until all sheets are in position.

**9** When using Aluminium End Caps, place the end gasket along the end of the Multiwall sheet only, stopping at the H Bar.



**10** Fasten the Aluminium End Cap with a screw to the H Bar. On the underneath of the Aluminium End Cap drill a small weep hole where it meets the H Bar.



**11** Use an Aluminium/polycarbonate End Cap to close off the open edge of the first and last glazing bars.

**10\***  
**YEAR WARRANTY**

This warranty applies from the date of original purchase and is valid only to the original purchaser of the product (claims must be accompanied by original purchase receipt). The sheets must have been installed and cleaned in accordance with NOVALITE®'s recommendations. Full details on the warranty are available from any NOVALITE® Polymers office or website. It is the responsibility of the consumer to obtain a full copy of the warranty conditions. Any claim must be in writing to NOVALITE® Products LLP Or its distributors.

**Loss of Light Transmission: 10 Year Warranty**

The product will not lose more than 10% L.T from its initial value (when tested in accordance with ASTM D 1003-2000)

**Weather Breakage: 5 Year Warranty**

From the date of purchase the product will not break as a result of hailstones measuring upto 15mm in diameter. Damages caused by objects other than hail is excluded from this warranty.



**\*Important:**

**Sealants**

These instructions are designed to prevent leakage and alleviate the requirement for sealants. Sealants, especially silicone, are incompatible with polycarbonate. They will damage the sheet, restrict expansion and contraction & void the warranty. Use the appropriate NOVALITE® Multiwall accessories to complete your project and help protect your structure, without the need for sealants.

**Thermal Expansion**

When inserting sheet into glazing sections allowance must be made for expansion.



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