



TUFLITE®

CORRUGATED

Profiled Polycarbonate Sheet

REDISCOVERING DAYLIGHT

TUFLITE® CORRUGATED

TUFLITE® Corrugated UV Co-extruded profiled polycarbonate sheets have been engineered to suit industrial roof lighting and daylight cladding applications for a wide array of specific needs. These include Industries, warehouses, commercial structures and also residences. Sunlight is abundantly available during the daytime and TUFLITE® Sheets help you to conveniently harness this boundless resource resulting in reduction of energy costs and reducing the effects of industrialization on the environment. TUFLITE® Corrugated UV Sheets provide excellent impact resistance, a very wide range of light transmission options and enhanced safety due to its excellent fire resistant (self extinguishing) properties. The co-extruded UV protective layer ensures that the sheets have superior resistance to weathering and the mechanical & optical properties of the sheets remain intact for an extended period of time. In a nutshell, TUFLITE® Corrugated UV sheets are 250 times stronger than glass, suitable for extreme weather conditions and can be deployed for use in hostile chemical environments. TUFLITE® sheets are corrosion resistant and offer near total protection from harmful Ultraviolet radiation of the sun.

TUFLITE® Corrugated UV sheets are available in clear transparent, embossed and textured options. Typical applications for TUFLITE® Corrugated UV sheets include roofing and cladding daylight panels in industrial sheds, warehouses and public buildings, central atria in shopping malls, swimming pool roofs, greenhouses, verandas, pergolas, patio covers, awnings, carports, gazebos and the list can go on...

Fire Retardant (Self Extinguishing)

TUFLITE® Corrugated UV sheets have an excellent flammability rating (UL94 V-2), are self extinguishing and suitable for use in areas prone to fire. These sheets do not release toxic gases and are comparatively much less flammable than GRP & Acrylic (PMMA) sheets.

Excellent Impact Resistance

TUFLITE® Corrugated UV sheets possess exceptional impact resistance. Manufactured from high quality Bayer® polycarbonate resin, which has 250 times the impact strength of glass and up to 40 times that of Acrylic (PMMA) sheets of similar thicknesses. TUFLITE® Corrugated UV sheets are virtually unbreakable.

Superior Clarity & Light Transmission

Clear TUFLITE® Corrugated UV sheets are as transparent as glass and have a light transmission of 90%. These sheets are also available in translucent configuration for better light diffusion.

Weather Protected

TUFLITE® Corrugated UV Co-extruded sheets possess a special Ultraviolet barrier, which cuts off 99.9% of sun's harmful ultraviolet radiation. This protection ensures zero damage to UV sensitive products like furnishings and upholstery, paint, carpets and also prevents harm to the human skin. Further, this UV layer is co-extruded and hence cannot peel or delaminate from the sheet, ensuring long term durability and sustained weather protection.

Design Flexibility

TUFLITE® Corrugated UV sheets can be cold curved in both directions. That is parallel or perpendicular to the line of corrugation. This offers design flexibility to install these sheets over curved roofs or walls (Radius of curvature will be defined by the profile and thickness of sheet to be used).

Broad Range Temperature Resistance

TUFLITE® Corrugated UV sheets remain stable under extreme climatic conditions, remaining virtually unchanged between temperatures of -40°C and +120°C. This signifies that the sheets can perform below freezing point and above boiling point of water. Adequate allowance needs to be made for thermal movement in the fixing arrangement.

Better Heat / Thermal Insulation

TUFLITE® Corrugated UV sheets exhibit better insulation values against heat or cold when compared to glass or GFRP sheets.

Handling With Ease

Due to their relatively light weight and high impact strength, TUFLITE® Corrugated UV sheets are convenient to store, handle and install. Conventional tools can be used to cut, trim or drill holes in the sheets.

Chemical Resistance

TUFLITE® Corrugated UV sheets are resistant to a wide range of chemicals. They are generally unaffected by acids, alcohols, glycols, mineral oils, animal and vegetable fats, kerosene and non-abrasive cleaners. However, they are effected by benzene, petrol, ketones, acetones, phenols, chlorinated and aromatic hydrocarbons, petroleum based paints, abrasive cleaners and solvents. For more information contact your distributor for a data sheet.

Simple Maintenance

Clean using a mild detergent and warm water. Use a soft sponge. Rinse thoroughly with clean water.

TUFLITE® Corrugated UV Warranty

TUFLITE® Corrugated UV sheets are backed by a 10 year warranty against loss of light transmission and a 5 year warranty against hail breakage. Provided that all installation conditions are satisfied, these warranties will be honored anywhere in the world where TUFLITE® Corrugated UV sheets are sold.

Product Range

Product TUFLITE®(UV1)










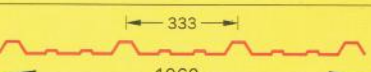

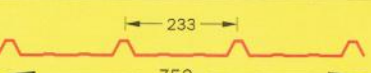
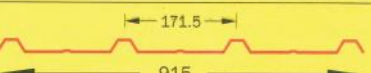

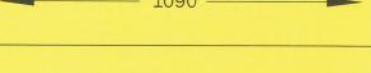


Description: Corrugated Polycarbonate sheet with One side UV Coating




Product TUFLITE® Plus (UV2)

Description: Corrugated Polycarbonate Sheet with both sides UV Coating

Profile Range

TUFLITE® Corrugated profiles are available in a wide range of standard products and specially developed profiles. We can match any of your profiles using advanced technology available with us. Please call us in case you wish to develop a new profile which is not available in our standard range given below.

Name	Profile	Thickness (mm)	Pitch (mm)	Depth (mm)	Width (mm)	Cover (mm)	Weight (mm)
Mini Sinus		0.8	31	9	800	769	1.15
		1.0	31	9	800	769	1.45
Sinus 10.5 Rib		0.8	76	18	790	750	0.84
		1.0	76	18	790	750	1.05
		1.2	76	18	790	750	1.26
Sinus		0.8	76	18	1050	1000	1.10
		1.0	76	18	1050	1000	1.37
		1.2	76	18	1050	1000	1.65
Greca		0.8	76	18	1050	988	1.26
		1.0	76	18	1050	988	1.58
		1.2	76	18	1050	988	1.90
Big 6		1.0	177	57	920	885	1.41
		1.2	177	57	920	885	1.69
AC profile Embossed		1.6	177	57	1050	1000	2.10
		2.0	177	57	1050	1000	2.65
IBR (UV2)		1.0	172	35.5	739	688	1.15
		1.2	172	35.5	739	688	1.38
NURIB (UV2)		0.8	190	28.5	820	770	0.9
		1.0	190	28.5	820	770	1.15
		1.2	190	28.5	820	770	1.38
TRIM DECK Embossed		1.5	203	28.5	1072	1015	2.17
		1.8	203	28.5	1072	1015	2.60
		2.0	203	28.5	1072	1015	2.90
METECNO Embossed		1.8	333	42	1062	1000	2.80
		2.0	333	42	1062	1000	3.11
ZAMIL Embossed		1.8	250	34	1090	1000	2.70
		2.0	250	34	1090	1000	3.00
KLIPLOCK		1.2	233	40	752	700	1.52
IT5		1.0	171.5	34.5	915	857	1.42
		1.2	171.5	34.5	915	857	1.70
KIRBY KR Embossed		1.6	333	32	1090	1000	2.50
		2.0	333	32	1090	1000	3.11
		3.0	333	32	1090	1000	4.66
BHUSHAN Embossed		1.6	250	30	1080	1000	2.32
		1.8	250	30	1080	1000	2.61
		2.0	250	30	1080	1000	2.90
META COLOUR Embossed		1.6	186	32	1016	930	2.32
		1.8	186	32	1016	930	2.61
		2.0	186	32	1016	930	2.90
KAILASH 1070		1.6	200	31	1080	1000	2.34
		1.8	200	31	1080	1000	2.63
		2.0	200	31	1080	1000	2.93

KAILASH 1060		1.6	200	30	1070	1000	2.34
		1.8	200	30	1070	1000	2.63
		2.0	200	30	1070	1000	2.93
PENNAR 1050		1.6	333	32	1090	1000	2.24
		1.8	333	32	1090	1000	2.52
		2.0	333	32	1090	1000	2.80
JSW		1.6	196	32	1060	980	2.34
		1.8	196	32	1060	980	2.52
		2.0	196	32	1060	980	2.80

Guidelines for proper Installation of TUFLITE® Corrugated UV Profiled Sheets

Ensure that all handling & installation instructions are properly read and understood prior to commencing work.

CAUTION: Safety always comes first. Ensure extreme care when working on the roof. Do not walk directly on the sheeting. Use walking planks or boards spanning atleast two purlins. Always wear appropriate footwear. Wear safety glasses while cutting or drilling the sheets.

- 1 Ensure that the pitch of the roof allows adequate water run off (recommend at least 10° of Slope. Which translates into a minimum 180mm rise or drop per linear meter).
- 2 Allow for ventilation, particularly at the highest point, to minimize heat build up and provide air circulation. Good ventilation will also minimize condensation in cold weather and improve working conditions and human efficiency.
- 3 Purlin spacing should not exceed manufacturers stipulations. If sheets are to be fixed in curved applications, confirm minimum radius of curvature for that specific profile and thickness before installation.
- 4 Make sure that the UV protected side faces the sun. Sheets are clearly demarcated with ink jet printing which indicates the UV protected surface.
- 5 The sheets can be easily cut with a pair of shears, a fine-toothed hand saw or a circular saw with either a cut off blade suitable for plastic or a fine tungsten tipped blade.
- 6 Fix sheets at spacing's shown in Table 1. As a guide you will need approximately 7 fixings per linear meter. This may vary depending on the purlin spacing and wind conditions. In high wind areas fix Corrugated (Roma) and Greca on every second corrugation on each purlin. It's also advisable to use barge capping. Fix the sheet through the crests for roofing and through the valleys for walls.
- 7 Lay the lower sheets first. Side laps should always be away from normal wind flow direction. Overhangs should not exceed 100mm (Where wind speeds are high, reduce overhang to 50mm). Fluctuations in temperature could cause expansion and contraction. Adequate allowances for thermal movement are necessary to avoid warping or buckling.
- 8 All holes should be 4mm to 6mm wider than the diameter of the fastener to compensate for expansion and contraction. Ensure washers are wide enough to cover the expansion hole at full expansion.
- 9 Follow vertical direction while fixing fasteners. Torque or tighten the fasteners well enough to prevent vibration. Avoid excessive tightening as this may cause distortion and undue stress, resulting in material failure over a long period. Use only EPDM washers as they are chemically compatible with polycarbonate. Use of inferior washers will result in lapse of the warranty.
- 10 It is advisable to use butyl tapes at all joints/over laps to make the daylight panels water tight

Light and Heat Transmission

(Based on thickness of 1.0mm)

Colour / Type	Light Transmission	Solar Transmission	SC Ratio
Clear	90%	86%	0.98
Clear Embossed	80%	83%	0.85
Opal	50%	46%	0.48
Bronze	50%	54%	0.78
Grey	50%	54%	0.66
Metalic	35%	32%	0.48
Green	45%	49%	0.54

Fixing and Purlin Spacings - Table 1

Fixing Spacings

Profile	End Purlins	Mid Purlins – Normal Wind	Mid Purlins – Normal Wind
Roma	Every 2nd Crest	Every 3rd Crest	Every 2nd Crest
Greca	Every 2nd Crest	Every 3rd Crest	Every 2nd Crest
Trimdek	Every Crest	Every Crest	Every Crest
IBR	Every Crest	Every Crest	Every Crest
AC Profile	Every Crest	Every Crest	Every Crest
Bhushan	Every Crest	Every Crest	Every Crest

Maximum Purlin Spacings – 0.8mm Sheet (mm)

Profile	Roof End Span	Roof Mid Span	Wall Span
Roma	800	1000	1200
Greca	900	1200	1200
Trimdek	900	1200	1200
IBR	900	1200	1200
AC Profile	900	1200	1200
Bhushan	900	1200	1200

Maximum Purlin Spacings – 1.2mm Sheet (mm)

Profile	Roof End Span	Roof Mid Span	Wall Span
Roma	800	1200	1500
Trimdek	900	1400	1500
IBR	900	1500	1500
AC Profile	900	1500	1500
Bhushan	900	1500	1500

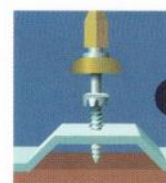
Minimum Curve Radii (mm)

Profile	Max. Span	Min. Radius
Roma	750	6000
Greca	750	6000
Trimdek	750	14,000

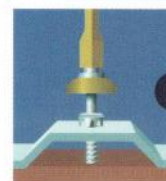
Easy Installation.



1
Firmly place the sharp point of the Self fastening fixing onto the crest of the corrugation to be fixed, to eliminate "skidding" or "wandering".



2
Commence drilling at 2000rpm to pierce the sheet. Screw engages in steel purlin.



3
Cutter engages polycarbonate sheet, cuts the expansion hole and centres the screw.



4
Wait until the rubber weather seal engages and compresses against the roof sheet and under the fixing head, to stop.

Specifications

- 55mm in length
- Suitable for use with Roma, Greca and Trimdek profiles
- 12 gauge, 14 threads per inch
- Suitable for use with steel battens thickness 0.75mm to 4.5mm*
- Suitable for use with 5/16" Drive
- Hex Head
- Mechanically plated to comply with AS 3566 Class 3

Typical Physical Properties

Property	Standard	Units	Value
Density	D-1505	g/cm ³	1.2
Coef Linear Thermal Expansion	D-696	10 ⁻⁵ cm/cm °C	6.5
Thermal Conductivity	C-177	W/mK	0.21
Tensile Strength at Yield	D-638	MPa	62
Tensile Strength at Break	D-638	MPa	65
Tensile Modulus of Elasticity	D-638	MPa	2300
Flexural Strength	D-790	MPa	93
Flexural Modulus	D-790	MPa	1900
Notched Impact Strength	D-256	J/m	800
Heat Deflection Temp	D-648	°C	130

Storage and Handling

- TUFLITE® Corrugated UV sheets should be stored on a flat surface in a well ventilated protected and shaded area, out of direct sunlight. Stacked sheets stored in the sun will cause heat build up and lead to distortion, even if covered. Any damage caused due to faulty storage will result in a lapse of the warranty.
- Sheets must be stored away from moisture at all times.
- Care must be taken to avoid physical abrasion of sheets.