

 **Macrolux**[®]

**MULTI WALL
POLYCARBONATE SHEETS**



COEXTRUDED THERMOGLAZING

Multiwall (Twin, Triple, Five, X-Strong and M-wall) polycarbonate panels from Macrolux USA are assuming a more and more important role in the transparent building materials market. To meet your growing requirements and to serve you more efficiently, we have a fully staffed customer service department. Let us show you what an enjoyable experience it can be to work with Macrolux USA!

Applications



Macrolux® is perfect for applications requiring a material which offers; high light transmission, thermal insulation, lightness of weight with strength, high shock resistance, flame retardance, great economy, vandal resistance and design flexibility. Consider using Macrolux® panels in your next project.



HORTICULTURAL

For greenhouse coverings where good thermal insulation is necessary together with high light transmission.



ARCHITECTURAL GLAZING

With the ability to be cold-formed into arches, Macrolux® offers architects true design freedom. Consider the possibilities of using Macrolux® for walkways, indoor shopping centers, swimming pool coverings, skylights, and other enclosures.



INDUSTRIAL BUILDING

For various glazing applications, skylights, walkways, windows, shelters, and insulated roofing.



HOME IMPROVEMENT

For easy do-it-yourself projects like window replacements, shower enclosures, hobby greenhouses, partitions, light covers, patio covers, carports and more.



Macrolux® sheeting has been designed as a glazing product. It is the sole responsibility of the customer to confirm with their own architect, engineer or other professional consultants that the goods offered by Macrolux USA meet the requirements and specifications of the particular project and use for which they are being purchased.

Features and benefits

Virtually unbreakable

You can be assured that from transport to installation, Macrolux® will maintain its durability. Even when exposed to elevated outdoor temperatures over a long period of time, it will maintain its structural integrity. It resists cracking and splintering during fabrication, assuring you a high degree of safety and it can be cold formed on site.



Impact resistance

Among the thermoplastic products used in the building industry, Macrolux® coextruded thermoglazing has a high impact resistance - 200 times greater than glass and 10 times greater than acrylic.

A Macrolux® 8mm panel is so strong it can withstand the impact of a 16 lb. weight, falling 25 feet onto the

panel, with no breakage. It will maintain its impact strength over a wide temperature range from -40°F to 250°F.



Saves energy

The Multiwalled construction of the Macrolux® sheet offers high thermal resistance, giving excellent thermal insulating values while blocking UV transmission.



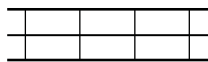
Condensation control

A factory applied condensation control is available on Macrolux® panels. Reducing surface tension, the condensation control allows water to spread into a thin sheet rather than form into droplets. It is available for all applications from greenhouses to backyard patio covers.

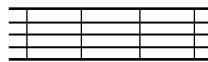
Structure Type



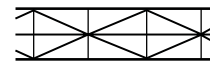
Twin Wall



Triple Wall



Five Wall



X-Strong



Five M Wall


Technical Data


Immediate delivery of sheets in 4 and 6 foot widths. Other widths are available by special order. Sheets may be supplied cut to your exact size specifications. Length tolerance for custom produced materials is -0 +30mm. (Sheets over 236.25" (6m) have a tolerance of -0 +30mm)

CHARACTERISTICS	TWIN WALL				TRIPLE WALL			FIVE WALL		X-STRONG	FIVE M-WALL	
Sheet Thickness mm	4*	6	8	10	6*	8	10	16	25	16	32	35
inch	5/32	1/4	5/16	3/8	1/4	5/16	3/8	5/8	1	5/8	1 1/4	1 3/8
Rib Spacing (inch)	0.236	0.236	0.354	0.354	0.315	0.315	0.315	0.787	0.787	0.551	1.26	1.26
U factor (Btu/ft ² h°F)	0.634	0.616	0.560	0.528	0.600	0.528	0.475	0.335	0.264	0.350	0.250	0.229
R-Value R = 1/U	1.58	1.62	1.79	1.89	1.67	1.89	2.10	2.98	3.79	2.84	4.05	4.36
Min. Bending Radius (inch)	24	36	48	60	36	48	60	95	148	95	189	207
Light transmission (%)												
Clear	82	80	80	80	75	75	75	62	60	62	60	60
Bronze	25	25	25	25	23	23	23	25	20	20	15	15
Opal	60	60	60	55	60	60	55	40	25	40	20	15

Features and benefits


 **Easy to install**
Macrolux® panels resist cracking and splitting during cutting and drilling.

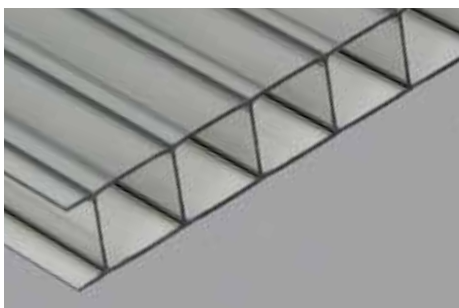
 **Extra wide panels**
Standard widths of 4 feet and 6 feet are available with lengths up to 39'.


 **Light transmission**
Offering up to 82% light transmission in clear. Also available in bronze, opal, and custom colors by special order.

Macrolux® multiwall sheets are available in a wide variety of thicknesses and colors providing up to 82% visible light transmission.

Macrolux® multiwall sheets are essentially opaque at all wavelengths below 385 nanometers limiting the damaging effects of UV light. They have a clear co-extruded outer surface which provides high stability against the effects of UV radiation and gives excellent durability to outdoor weathering. This unique protection insures long term optimal quality under intensive UV exposure.


 **Lightweight**
Weighing just one-eighth the weight of glass, polycarbonate panels do not need the extensive structural support that a heavier glass wall or glazing material requires.




 **UV Co-Extrusion**
Macrolux® co-extruded thermoglazing incorporates new technology which results in exceptional resistance to aging.

Macrolux® multiwall is a high performance polycarbonate sheet. During manufacturing, a layer of UV absorber is co-extruded onto the surface of the sheet, forming a barrier against UV radiation.


This gives Macrolux® multiwall exceptional resistance to ageing without affecting the mechanical properties and impact strength.

 **Flammability**
Macrolux® polycarbonate sheets are classified in accordance with ASTM standards. Compared with other plastic products used in the building industry, Macrolux® multiwall sheets have an exceptional fire performance and most importantly, do not give off toxic gasses.

 **Bending RADII**
Macrolux® multiwall sheets can be cold formed and used in many curved applications, for example, arched walkways. Sheets must always be bent longitudinally, never across the width of the sheet.

In applications of this nature it is important to avoid over tensioning of the sheet. Therefore, when Macrolux® multiwall is cold formed,

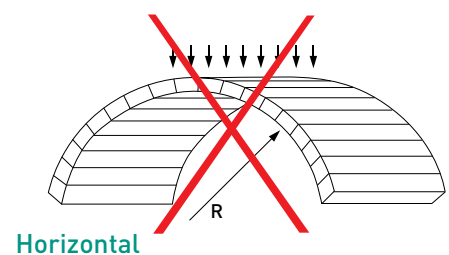
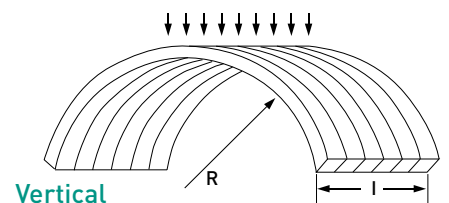
the minimum radius should not be less than 150 times the thickness of the sheet.

 **Warranty**
Macrolux® is backed by a 10 year warranty on light transmission and breakage caused by hail.

Proper installation
Macrolux® is supplied with a protective PE film which should be kept on until the sheet is installed. The UV protected side is to be faced towards the sun and is marked with a white printed film, light blue film or a sticker saying Macrolux® multiwall polycarbonate sheet. Macrolux® crates or sheets should be stored in an area not exposed to the sun, or indirect heat from the sun, which could make the removal of protective film difficult.

Stiff fixing by means of adhesive or putty is to be avoided. Top and bottom ends of a sheet must always be sealed by means of aluminum tape to prevent dust or dirt penetrating the inside of the ribs. Aluminum tape must be protected with proper polycarbonate "U" profiles.

Ribs should always run vertical



Chemical resistance

The compatibility tests are carried out by immersing the polycarbonate sample piece for 180 days in the substance to be tested at a constant temperature of 20°C. The esthetical aspect (dulling, fissures) is then evaluated and the mechanical characteristics are compared with the original values of the polycarbonate.

CHART KEY:

Resistant

Partially resistant

NOT resistant

CHEMICALS

Acetic acid 5%
Acetylene
Alum
Aluminium alum
Aluminium chloride
Aluminium oxalate
Aluminium sulphate
Ammonium chloride
Ammonium nitrate
Ammonium sulphate
Ammonium trichloride
Antimony pentachloride
Arsenic acid 20%
Arsenous acid 20%
Borax
Boric acid
Butane
Butanol
Butilic alcohol
Butylenic glycol
Calcium chloride
Calcium hydrate
Calcium hypo chloride
Calcium nitrate
Calcium soap
Carbonic acid
Carbon oxide
Chloride of lime
Chrome alum
Chromic acid 20%
Citric acid 10%
Concrete
Copper chloride
Coppers sulphate
Copper chloride
Decalin
Ethilenglycol
Ethyl alcohol 96%
Ethylene glycol
Fluosilicic acid 30%
Formalin
Glycol
Glycolic acid
Heptane
Hexane
Hydrochloric acid 10%
Hydrogen sulphide
Iron chloride
Iron sulphate
Kerosene
Lactic acid 5%
Ligroin
Magnesium chloride
Magnesium sulphate
Manganese sulphate
Mercury
Mercury chloride
Methylisobutylketone
Naphtha
n-butyl alcohol
Nickel sulphate
Oleic acid
Oxalic acid
Oxygen

Ozone
Pentane
Perchloric acid 10%
Phosphoric acid
Phosphoric Oxychloride
Potassium alum
Potassium bromide
Potassium carbonate
Potassium chloride
Potassiummetabisulphite 4%
Potassium nitrate
Potassiumperchlorate 10%
Potassiumpermanganate 10%
Potassium persulphate
Potassium Rhodanate
Potassium sulphate
Propane
Propargylic alcohol
Propyl alcohol
Soda
Sodium bisulphate
Sodium bisulphite
Sodium carbonate
Sodium chlorate
Sodium chloride 10%
Sodium hydrate 1%
Sodium hypo chloride
Sodium sulphate
Sulphuric acid at 50%
Synthetic saliva
Synthetic sweat
Tartaric acid
Turpentine
Water
Zinc chloride
Zinc oxide
Zinc sulphate
Acetic acid 30%
Amilacetate
Aniline
Benzoic aldehyde
Bromine
Bromobenzol
Chlorobenzol
Cresol
Diamphtalate
Diethyl ether
Dimethylformaldehyde
Dyburylphthalate
Ether
Ethilenchloride
Ethyl bromide
Etilencloridrina
Hydrofluoric acid
Iodine
Methanol
Methylamine
Methylene chloride
Methylic ester
Methylketone
Nitrobenzole
Nitrous gases
Perchlorethylene
Sodium hydrate 10%
Sulphoral chloride
Sulphurous acid 10%
Sulphur
Tetrahydrofuran
Trichlorethylamine
Trichloro-ethylene

Acetaldehyde
Acetic acid
Acetone
Acrylic nitrile
Acrylonitrile
Allylic alcohol
Ammonia
Ammonia water
Ammonium fluoride
Ammonium hydrate
Ammonium sulphide
Benzene
Benzoic acid
Benzole
Benzyl acid
Benzyl alcohol
Bromobenzene
Butyl acetate
Butylstearate
Butyric acid
Carbon sulphide
Carbon tetrachloride
Caustic potash 5%
Caustic soda 5%
Chlorine gas
Chloroform
Cyclohexane
Cyclohexanon
Cyclohexaol
Cyclohexene
Dimethyl Fluorinamide
Dinonilphthalate
Dioxane
Diocetyl adipate
Diocetyl phtalate
Diphyl
Ethyl chloridrine
Ethyl ether
Ethylamine
Ethylene chloride
Formic Acid 30%
Glycerine
Hydrochloric acid 35%
Industrial petrol
Isoamyl alcohol
Isopropyl alcohol
Lime wash
Methyl alcohol
Methyl metacrylate
Nitric acid 10%
Nitrobenzene
Perchloric acid
Petroleum
Petroleum ether
Phenic acid
Pheniletylic alcohol
Phenol
Phosphor trichloride
Phosphorus chloride
Potassium cyanide
Potassium dichromate
Potassium sulphocyanide
Propionic acid
Pyridine
Sodium bicarbonate
Sodium sulphide
Sulphur dioxide
Sulphuric acid 70%
Styrol
Tetrachlorethane

Tetralin
Thricloroacetic acid
Thrimeticilic acid
Tiophen
Toluol
Tri cresyl phosphate
Trichlorethylphosphate
Triethanolamine
Urea
Vinyl acetate
Xylene

DETERGENTS

Ajax
Bleach
Dor
Fewa
Horoligt M
Into-Fensterklar
Laundry soap
Natril
Parifex 2%
Pril
Rei
Riseptin
Sidolin
Suwa
Trisilin F
WK 60
Calgonit
P3 Asepto
Impact
Omo
Persil
Rapdosept
Somat
Tiba

DISINFECTANTS

Chloramine
Delegol
Lysoform 2%
Maktol
Menfen
Oktozon 1%
Perhydrol
Pure alcohol
Resorcina 1%
Sublimate
Trosilin G extra 1,5%
Baktol
Carboxylic Acid
DDT
Hydrogen peroxide 10%
TB-Lysoform
Dimamin
Sagrotan 5%
Tincture of iodine
Zephirol

FOODS

Apple juice
Beer
Beet
Bovine tallow
Butter
Castor oil
Chocolate
Cinnamon
Coffee
Cognac
Cucumbers
Fish

Fruit juice
Gin
Glucose
Grapefruit juice
Linseed oil
Liquors
Liver oil
Maggi
Margarine
Meat
Mustard
Olive oil
Onions
Orange juice
Raspberry syrup
Rum
Salt
Tea
Tobacco
Tomato sauce
Vanilla
Vegetable juices
Vegetable oils
Vinegar
Vodka
Wine
Clove
Nutmeg
Pimento
Lard

OILS AND FATS

Aral BG
Baysolin
BP Energol
Brunofix
Darina
Esso Estic
Machine oil
Mobil DTE
Molikote
Paraffin oil
Polyran
Rhenocalor N
Shell Spirax 90
Silicone oil
Texano Regal
Brake liquid
Camphor oil
Drill oil
Skydrol
Combustible oil
Diesel oil
Oily paint
Shell Tellus 11-33
Turpentine oil
PHARMACEUTICALS
Ambra solare
Blood plasma
Conditioner
Hydroplex
Lanoline
Odol mouthwash
Periston
Vaseline
Wick-Vaporuf
Nailpolish solvent
Methanol 90%

Recommended Loading

Maximum Deflection 1"

Thickness	Wall Structure	Load (lb./ft ²)											
		15	30	45	60	15	30	45	60	15	30	45	60
		2' Width				4' Width				6' Width			
6mm, 1/4"	Twin, Triple Length (inch)	25	21	20	15	18	16	-	-	18	-	-	-
8mm, 5/16"		31	22	18	16	21	17	-	-	20	-	-	-
10mm, 3/8"		98	34	26	23	27	21	19	17	24	21	18	-
16mm, 5/8"	Five Length (inch)	118	66	36	30	32	24	21	18	29	23	20	18
25mm, 1"		465	150	126	120	44	32	29	26	37	29	26	19
32mm, 1-1/4"	Five M Length (inch)	465	197	146	110	50	37	31	28	40	32	29	25
35mm, 1-3/8"		465	236	157	118	58	42	34	31	44	33	30	26

Maximum Deflection 2"

Thickness	Wall Structure	Load (lb./ft ²)											
		15	30	45	60	15	30	45	60	15	30	45	60
		2' Width				4' Width				6' Width			
6mm, 1/4"	Twin, Triple Length (inch)	66	27	23	16	22	17	-	-	20	-	-	-
8mm, 5/16"		65	33	24	18	25	19	-	-	22	-	-	-
10mm, 3/8"		132	67	45	36	34	26	23	21	26	23	20	-
16mm, 5/8"	Five Length (inch)	177	98	54	41	41	30	26	23	35	27	23	19
25mm, 1"		465	164	146	133	70	43	37	32	44	35	31	20
32mm, 1-1/4"	Five M Length (inch)	465	217	162	134	88	50	40	36	49	39	34	27
35mm, 1-3/8"		465	297	189	148	108	62	47	41	55	42	37	28

Maximum Deflection 3"

Thickness	Wall Structure	Load (lb./ft ²)											
		15	30	45	60	15	30	45	60	15	30	45	60
		2' Width				4' Width				6' Width			
6mm, 1/4"	Twin, Triple Length (inch)	106	32	26	17	26	18	-	-	21	14	-	-
8mm, 5/16"		98	44	30	19	29	21	-	-	23	16	12	-
10mm, 3/8"		165	100	63	49	40	31	27	25	28	25	21	14
16mm, 5/8"	Five Length (inch)	236	130	71	51	50	36	31	28	40	31	25	20
25mm, 1"		465	177	165	146	96	54	44	38	51	41	36	21
32mm, 1-1/4"	Five M Length (inch)	465	236	177	157	126	62	48	44	58	45	39	28
35mm, 1-3/8"		465	357	221	177	157	82	60	50	65	50	44	29

The information contained in these charts has been drafted on the basis of our best knowledge. Macrolux USA reserves the right to change specifications and data, without notice, if deemed necessary in the evolution of its products. It is the sole responsibility of the customer to confirm with their own architect, engineer or other professional consultants that the materials offered for sale meet the requirements and specifications of the particular project and use for which they are being purchased.

Other fine products by Macrolux®

Macrolux® Polycarbonate Profiles

Macrolux® Profiles are available to get the best performance from Macrolux® sheeting. The U-profile closes the cut edge of the multiwall sheet while the H, Snap-H and Ridge Profiles make joining simple and efficient.



Macrolux® Corrugated Polycarbonate

Macrolux® polycarbonate corrugated sheet provides design professionals, greenhouse growers, and do-it-yourselfers with an easily fabricated and installed building product. Unique physical, mechanical, thermal and optical properties combine to make Macrolux® flexible and strong yet light in weight.



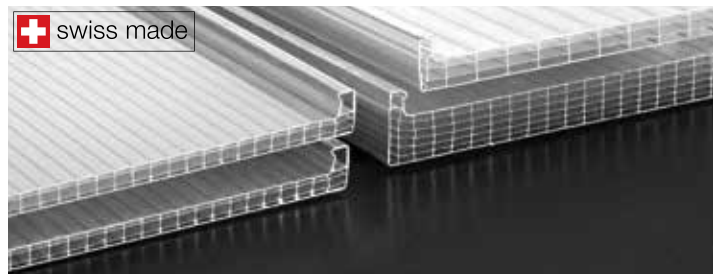
Macrolux® MB Corrugated Skylight

The Macrolux® MB panel is designed to match typical metal building profiles in both 9" and 12" patterns, so it easily creates skylights and sidelights. Macrolux MB® features all the benefits of our standard Macrolux® corrugated panels.



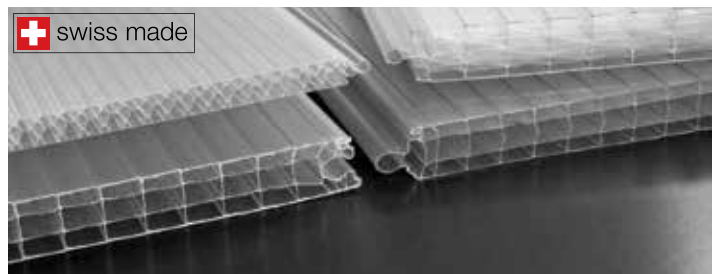
BDL Translucent Polycarbonate Multiwall Panel Systems

BDL is a system of standing seam modular panels used to create vertical and sloped glazing. It is suited for a range of applications from curved skylights to interiors. Thanks to its variety of accessories, the system is complete, versatile, lightweight and easy to install.



Modulit 500 LP Wall System

MODULIT 500 LP system is suitable for any translucent glazing application such as clerestory glazing, external translucent walls and internal translucent partitions.





This information and our product application recommendations are illustrative and must be verified for each project. The pictures presented are merely illustrative.

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