September 2013

Plastics for fabrication

marlon fs

marlon fsx LONGLIFE

marlon fs HARD

marpax

marcryl fs

marpet-g fs

BRETT MARTIN

Plastic Sheets

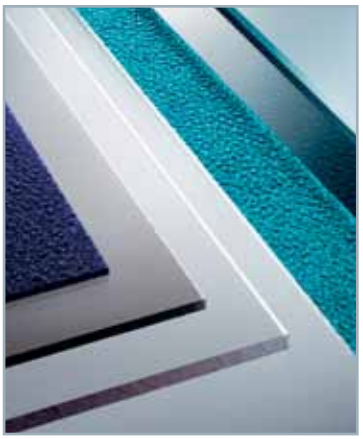
Plastics for fabrication

Brett Martin offers an extensive range of extruded thermoplastic engineering materials which are suitable for a wide array of applications in the sign and display, fabrication and building industries.

BRETT MARTIN
Plastic Sheets

BRETT MARTIN IS THE ONE STOP SHOP FOR ALL TRANSPARENT FLAT SHEET PRODUCTS INCLUDING POLYCARBONATE, ACRYLIC AND PETG FLAT SHEETS. THE CHOICE OF MATERIAL FOR MANY FABRICATORS DUE TO EXCELLENT OPTICAL CLARITY, BROAD WORKING TEMPERATURE RANGE, OUTSTANDING FORMABILITY, EASE OF CUTTING AND MACHINING, FLEXIBILITY, IMPACT STRENGTH AND EXCELLENT FIRE PERFORMANCE OF THE PRODUCTS.

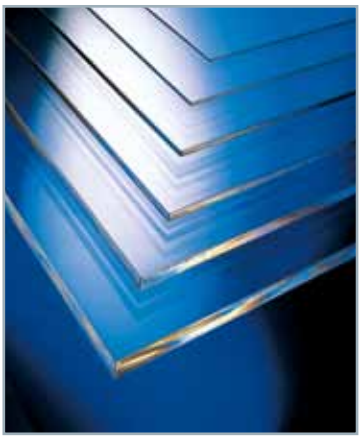
THE FOLLOWING MATERIAL OPTIONS ARE AVAILABLE IN THE FABRICATION RANGE:



marlon fs

FLAT POLYCARBONATE SHEET

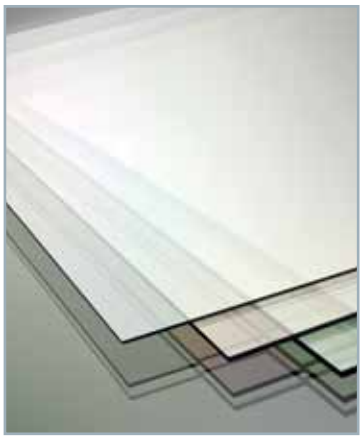
Marlon FS is a clear extruded flat polycarbonate glazing sheet that provides 200 times more impact resistance than glass, with excellent fire resistance.



marcryl fs

FLAT ACRYLIC SHEET

Marcryl FS is a premium flat extruded acrylic sheet with high gloss finish, offering brilliant optical clarity with its glass-like properties and high scratch resistance.



marpet-g fs

FLAT PETg SHEET

Marpet-g FS is a lightweight, durable, clear substrate with excellent optical clarity, thermoformability and light transmission properties. It offers exceptional ease of workability in print and display applications.

Polycarbonate

Brett Martin's range of extruded flat polycarbonate sheets offer ideal solutions for a wide range of applications in construction, fabrication and print & display industries. Durability and design freedom are two of the key features which designers seek when selecting modern materials. Marlon flat polycarbonate sheet offers both, plus many more benefits over traditional glazing and fabrication alternatives.

marlon fs

Marlon FS is available in a range of tints including bronze, green, blue opal and grey providing solar control, and with an embossed textured finish. Product options include double sided UV protection with Marlon FSX and advanced abrasion resistance with Marlon FS Hard.

marlon fs

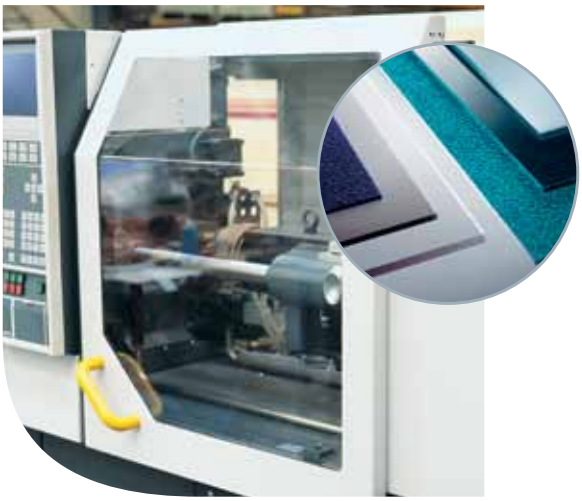
FLAT POLYCARBONATE SHEET

Marlon FS is a premium quality extruded flat polycarbonate sheet which provides 200 times more impact resistance than glass at only half the weight. The sheet is characterised by high optical clarity, light transmission, impact resistance, durability, design flexibility, thermal insulation and fire resistance. Marlon FS Longlife offers single side UV protecting people and property from UV radiation.

Marlon flat polycarbonate sheet offers a superior glazing solution to that of other materials. It's available in clear to maximise light transmission and a range of tints including bronze, green, blue, opal and grey which offer additional solar control. All tints can be provided with an embossed textured finish.

Colours and tints:	Clear, Opal, Bronze and specials* including Green, Blue & Grey
Widths:	Widths up to 2050mm
Thicknesses:	2, 3, 4, 5, 6, 8, 10 & 12mm
Options*:	Embossed texture, single sided UV protection
Specials*:	Special transparent, translucent & opaque options are available on request
Sheet weight:	3.6kg/m^2 (3mm)
U-value:	5.61 W/m^2 °K (3mm)

**Subject to request. Minimum order quantities may apply. Please contact Brett Martin for further information.*



TYPICAL APPLICATIONS

- Vertical glazing
- Protective screens
- Poster covers
- Signage / Displays
- Illuminated signage
- Thermoforming

marlon fsx LONGLIFE

UV PROTECTED FLAT POLYCARBONATE SHEET

Marlon FSX Longlife features co-extruded UV protection to both sides of the sheet cutting out 98% of harmful UV radiation. The UV protective layer provides longer sheet life expectancy, prevents yellowing and guards against loss of strength. Combined with high impact and chemical resistance, light weight and high light transmission, Marlon FSX is the superior glazing material for architectural rooflights, vertical glazing and other specialist glazing applications.

WARRANTY

Marlon FSX Longlife has a limited 10 year warranty against light transmission and breakage as outlined in the warranty statement, available separately.

Colours and tints:	Clear, Opal, Bronze and specials* including Green, Blue & Grey
Widths:	Widths up to 2050mm
Thicknesses:	2, 3, 4, 5, 6, 8, 10 & 12mm
Options*:	Embossed texture
Specials*:	Special transparent, translucent & opaque options are available on request
Sheet weight:	3.6kg/m^2 (3mm)
U-value:	5.61 W/m^2 °K (3mm)

**Subject to request. Minimum order quantities may apply. Please contact Brett Martin for further information.*

FIRE PERFORMANCE

Marlon FS and FSX typically achieve B,s1-d0 in accordance to EN 13501, and Class 1 Surface Spread of Flame in accordance to BS 476:Part 7. Testing per other European standards has also produced high classifications. Contact the technical department for the most up to date certification.

COLOUR	LIGHT TRANSMISSION DIN 5036 (3mm)
Clear (S)	90 - 92%
Bronze (CE)	42%
Grey (IM)	27%
Green (CF)	38%
Opal (FH)	38%

Light transmission values for Marlon FS/FSX

TYPICAL APPLICATIONS

- Rooflights
- Curved rooflights
- Canopies
- Covered walkways
- Exterior signage

UV RESISTANT

TYPICAL APPLICATIONS

- Safety glazing
- Anti-vandal glazing
- Display anti-graffiti protection
- Protective visors
- Riot shields
- Prison windows
- Bus shelters
- Telephone kiosks
- Train windows
- Guard rails
- Thermoforming

MARLON FS HARD ABRASION RESISTANCE (ASTM D 1003)

MATERIAL	CYCLES	HAZE CHANGE (%)
Uncoated	100	29.5
Hard coated	100	3 - 6
	500	<12
	1000	<20

MARLON FS HARD LIGHT TRANSMISSION

COLOUR	LIGHT TRANSMISSION (DIN 5036)
Clear (S)	90 -92% (3mm)
Bronze (CE)	50% (3mm)
Opal (FH)	38% (3mm)

marlon fs HARD

ABRASION RESISTANT FLAT POLYCARBONATE SHEET

Marlon FS Hard is an extruded polycarbonate flat sheet combined with an abrasion and chemical resistant coating. The highly resilient and abrasion resistant surface coating resists marks and scratches, vandalism, graffiti and physical attack and also withstands contact from a wide range of cleaning agents, organic solvents and corrosive elements.

Marlon FS Hard offers a superior toughness to protect those areas where high performance and reliability are essential whilst providing high natural light transmission.

WARRANTY

Limited 10 year warranty relating to breakage, 5 year limited warranty in relation to light transmission and coating.

Colours and tints:	Clear, Opal, Bronze, and specials* including Green, Blue & Grey
Widths:	Widths up to 2050mm
Thicknesses:	3, 4, 5, 6, 8, 10 & 12mm
Options*:	Single or Double sided UV protection**
Specials*:	Special transparent, translucent & opaque options are available on request
Sheet weight:	3.6kg/m^2 (3mm)
U-value:	5.61 W/m^2 °K (3mm)

**Subject to request. Minimum order quantities may apply.*
***Minimum order quantities apply to one side UV protection.*
Please contact Brett Martin for further information.

CHEMICAL RESISTANCE

CHEMICAL RESISTANCE SOLVENT	MARLON FS HARD
Ethanol (90%)	Long
Propanol	Long
Acetone	Short
MEK	Long
Petrol	Long
Dilute Ammonia	Medium
Dilute Caustic Soda	Short
Concentrated Caustic Soda	Short
Dilute Organic Acid	Long
Dilute Inorganic Acid	Long

Short Term Resistance
Drop/spills, significant changes in physical properties

Medium Term Resistance
Up to 8 hrs, some reduction in physical properties occurs

Long Term Resistance
No attack, little or no reduction in physical properties

BRETT MARTIN
Plastic Sheets

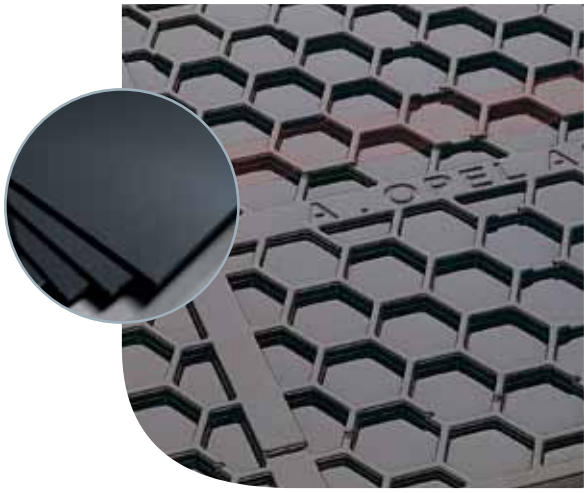
marpax

OPAQUE FLAT POLYCARBONATE SHEET

Marpax is an extruded polycarbonate flat sheet manufactured by Brett Martin. The sheet is characterised by high impact resistance durability and excellent thermoformability. The standard texture is pinseal on one side and gloss on the other. For a minimum order quantity Marpax can be made gloss on both sides.

The product is available with a P.E. film on the gloss surface. A range of standard widths and thickness are available.

- **Outstanding impact resistance**
- **Durable and extreme versatile**
- **Easy to form and fabricate**
- **Cost-effective**
- **High stiffness**
- **Can be used in a variety of applications**



Colours and thicknesses:	Grey (VZ) 4mm Black (XY) 3mm, 4mm
Widths:	Widths up to 2050mm
Options*:	Double sided gloss finish

**Subject to request. Minimum order quantities may apply. Please contact Brett Martin for further information.*

TYPICAL APPLICATIONS

- **Thermoformed trays**
- **Coloured Parts**
- **Signage**
- **Protective Screens where optical clarity is not required**

Polycarbonate Material Properties

The properties below apply across the whole polycarbonate flat sheet range including **Marlon FS, Marlon FSX Longlife, Marlon FS Hard and Marpax.**

PROPERTIES		TEST METHOD	VALUE	UNITS
Physical Properties	Density	DIN 53479	1.2	g/cm^2
	Water absorption in water equilibrium, 23°C	DIN 53495:A	0.35	%
	Water permeability	DIN 53122	< 2.28	g/cm^2
Mechanical Properties	Tensile strength at yield	DIN 53455	> 60	MPa
	Tensile strength at break	DIN 53455	> 70	MPa
	Tensile modulus	DIN 53457	2300	MPa
	Impact strength @ 23°C (notched Charpy)	DIN 53453	50	kJ/m^2
Optical Properties	Light transmission 3mm clear	DIN 5036	87 -91	%
	Refractive index ($D_{1)}$)	DIN 53491	1.586	–
Thermal Properties	Coefficient of thermal expansion	DIN 53752	68	$m/m.K \times 10^{-6}$
	Thermal conductivity	DIN 52612	0.2	W/m.K

Polycarbonate Fabrication Guidelines

SERVICE TEMPERATURE

Marlon FS, Marlon FSX Longlife, Marlon FS Hard and Marpax can be installed in a diversity of applications, with varying temperatures. The materials mechanical performance is known to remain stable in prolonged service in temperatures ranging from -20°C to +100°C.

CUTTING/MACHINING

Polycarbonate flat sheet is easy to saw and cut on standard workshop equipment. It can be machined on conventional milling machines with standard high speed tools.

RECOMMENDATIONS	CIRCULAR SAW	BAND SAW	MILLING MACHINE
Clearance Angle	20 - 30°	20 - 30°	20 - 25°
Rake Angle	15°	0 - 5°	0 - 5°
Cutting Speed	1800 - 2400m/min	600 - 1000m/min	100 - 500 m/min
Feed Speed	19 - 25m/min	20 - 25m/min	0.1 - 0.5 mm/rev
Tooth Spacing	2 - 5mm	1.5 - 2.5mm	–

**Notches adversely affect the mechanical properties of polycarbonate and should be avoided.*

DRILLING

When drilling Marlon or Marpax metal drills without a specially ground bit can be used, though a thermoplastic specific bit would be preferential. Do not use cutting oils.

PARAMETER	VALUE
Clearance Angle	5 - 8°
Tip Angle	90 - 130°
Helix Angle	Ca 30°
Rake Angle	3 - 5°
Cutting Speed	0.1 - 0.5mm/rpm
Drill Tip Speed	10 - 60m/min

Countersink fixing is not recommended. Holes should be a minimum of 1.5 x hole diameter from the edge of the sheet. The hole diameter should be a minimum of 6mm larger than the fixing shank diameter for sheets up to 2m and an additional 3mm per meter length thereafter.

BONDING

Polycarbonate can be bonded using one of the following adhesives: Epoxy, Polyurethane, Hot Melt or Silicone. Ask your adhesive supplier for the most appropriate type of adhesive for your particular application. Solvents such as Methylene Chloride give a good bond but can lead to stress cracking and are therefore not recommended.

THERMOFORMING

Before thermoforming, remove masking films and pre-dry at 120°C to remove absorbed moisture. Air circulation ovens with accurate temperature control are most efficient; air must circulate between sheets. Sheet age and storage conditions determine drying time. Dry storage can reduce pre-drying time in oven by up to one third; some experimentation is usually necessary. As moisture re-absorption starts when the dried sheet temperature falls below 100°C, thermoforming should be performed immediately after drying.
NB. Marlon FS Hard is NOT recommended for thermoforming.

VACUUM FORMING MARLON FS POLYCARBONATE

Components that are relatively simple and shallow in form are thermoformable from sheet heated to an elastic state. Most industrial press and vacuum formers for thermoplastics are suitable. Best results are achievable from machines that control heat on both sides of the sheet. Large area panels and thick panels need some air pressure support during heating to avoid sag. Male moulds are suitable for vacuum forming, female moulds for both vacuum and press forming. The following points should be taken into account when vacuum forming:

- Pre-drying is essential, remove film prior to drying.
- Sheets should be mounted vertically and air allowed to circulate.
- Pre-drying should be at about 120°C and the sheet thermoformed soon after, as moisture will gradually be re-absorbed when cooled below 100°C.
- Drying time*:
  3mm: 8 hours, 4mm: 13 hours, 5mm: 18 hours, 6mm: 24 hours, 8mm: 28 hours, 10mm: 30 hours, 12mm: 33 hours.
  **Approximate: drying time may vary depending on storage equipment.*
- If material has been correctly stored in a dry place, drying time can be reduced by one third.
- Pre-drying may be dispensed if fast and effective heating is used e.g. infra-red heaters.
- Secure clamping of material during forming is essential to avoid shrinking.
- Heating to thermoforming temperatures of 175-200°C should be evenly applied to both sides of the sheet.
- Parts should be allowed to cool in the mould to below 125°C and components must be completely rigid before removal from the mould.

LINE BENDING

- Pre-drying is not normally required.
- Recommended temperature between 155°C and 165°C.
- The area of material to be heated must be approximately five times as wide as the sheet thickness.
- Up to and including 4mm thick can be bent when heated from one side only.
- Over 4mm it is necessary to heat from both sides.
- Bending sharp internal corners should be avoided.
- Use a former radius at least equal to the sheet thickness.

BRETT MARTIN
Plastic Sheets

Acrylic

Marcryl high gloss acrylic extruded sheet offers a combination of excellent optical clarity and weatherability. It is a versatile material that offers ease of fabrication and excellent scratch resistance making it suitable for a wide variety of applications including point of sale, poster covers, menu boards, displays, glazing, interior design projects, store fixtures, fabrication and signage.

marcryl fs

In addition to clear, Marcryl FS acrylic sheet is also available in opal, providing good light diffusion that can be used for dramatic lighting effects, and with a silica green edge which looks like tempered glass.

marcryl fs

FLAT ACRYLIC SHEET

Marcryl FS is a top quality extruded acrylic sheet with a high gloss finish that offers a combination of excellent optical clarity and weatherability.

Marcryl FS is manufactured in a clean production environment ensuring optimum quality. The versatility, ease of fabrication and scratch resistance of Marcryl FS rend it suitable for a wide variety of applications in interior design, point of sale and display, fabrications and building industries. Marcryl FS can be flame polished creating a bright, shiny edge finish.

Colours and tints:	Clear, Opal and specials* including Dense White & Silica Green
Widths:	Widths up to 2050mm
Thicknesses:	2, 3, 4, 5, 6, 8, & 10mm
Options*:	Special options are available on request

**Subject to request. Minimum order quantities may apply. Please contact Brett Martin for further information.*

TYPICAL APPLICATIONS

- Displays
- Glazing
- Point of Purchase/Sale
- Signage
- Fabrication

BRETT MARTIN POLYCARBONATE 10 YEAR LIMITED WARRANTY

Marcryl FS can be flame polished creating a bright, shiny edge finish.

Acrylic Material Properties

Typical properties of Marcryl (Acrylic) Resin

PROPERTIES		TEST METHOD	VALUE	UNITS
Physical Properties	Density	DIN 53479	1.19	g/cm^3
	Moisture absorption (24hours @ 23°C)	ISO 62	30	mg
Mechanical Properties	Tensile strength at yield (ambient 23°C)	DIN 53455	72	MPa
	Elongation at break	DIN 53455	4.5	%
	Flexural modulus	DIN 53452	105	MPa
	Notched izod impact	ISO 180	2.6	kJ/m^2
Optical Properties	Refractive index	ISO 489	1.491	%
Thermal Properties	Vicat softening temperature	ISO 306	102	°C
	Thermal conductivity, K	DIN 52612	0.19	W/m.K
	Thermal expansion coefficient	DIN 53752-A	0.07	mm/m°K
	Service temperature range	–	-20 to +60	°C
Electrical Properties	Dielectric strength	ASTM D 149	16	kV/mm
	Surface resistivity	ASTM D 287	10^{16}	Ω

BRETT MARTIN
Plastic Sheets

Acrylic Fabrication Guidelines

SERVICE TEMPERATURE

Marcryl FS can be installed in a diversity of applications, with varying temperatures. The material's mechanical performance is known to remain stable in prolonged service in temperatures ranging from -20 to +80°C.

CUTTING/MACHINING

Marcryl FS is easy to saw and cut on standard workshop equipment. It can be machined on conventional milling machines with standard high speed tools. Notches adversely affect the mechanical properties of acrylic and should be avoided. If the feed rate is too low, unwanted heat build up may occur at the cut edges. The blades of circular saws should only protrude slightly beyond the sheet. Switch on the saw before starting the cut. Secure the sheet against fluttering or vibration.

RECOMMENDATIONS	CIRCULAR SAW	BAND SAW	MILLING MACHINE
Clearance Angle	10 - 15°	20 - 30°	2 - 10°
Rake Angle	0 - 5°	0 - 5°	0 - 5°
Cutting Speed	1800 - 2400m/min	600 - 1000m/min	1000 - 2000m/min
Feed Speed	19 - 25m/min	20 - 25m/min	0.1 - 0.5mm/rev
Tooth Spacing	9 - 15mm	1.25 - 3.3mm	–

DRILLING

Use only compatible cutting oils or emulsions for cooling when drilling Marcryl FS. Fixing threads should only be used if there is no alternative, the sheet may break as a result of notching. The hole should be at least 1.5 x hole diameter from the edge of the sheet. When drilling thin sheet it is advisable to clamp them to a flat solid surface. Do not punch a centre hole prior to drilling as this will cause stress to build up in the sheet. In order to locate the drill a pilot hole should be drilled first. Special ground bits are required when drilling Marcryl.

PARAMETER	VALUE
Clearance Angle	3°
Tip Angle	60 - 90°
Helix Angle	12 - 16°
Rake Angle	0 - 4°
Cutting Speed	0.1 - 0.3mm/rpm
Drill Tip Speed	10 - 60m/min

BONDING

Marcyl FS can be bonded using acrylic cements. It is imperative that the material selected is compatible and suitable for the intended end use. Care must be taken to avoid stress cracking. A cycanocrylate adhesive is suggested for use when bonding Marcryl to other substrates such as metal, glass or wood.

THERMOFORMING

Marcryl FS can be highly stretched at relatively low temperatures. The forming process can occur more slowly, as it is of a rubbery nature and the surface quality of the semi-finished material is largely retained. Prior to pre-drying or thermoforming it is recommended that the protective film is removed as heating may result in it adhering to the sheet. Pre-drying is not normally required when line bending or if fast effective heating is used. If required pre-dry between 75 - 80°C for 24 hours for sheets with a relatively high moisture content. Thermoforming should be carried out as soon as possible after pre-drying, as re-absorption of moisture will occur.

When using thermoplastic moulding techniques the material should be heated to 140 - 170°C, some experimentation may be required to maintain the good optical quality of the surface.

FLAME POLISHING

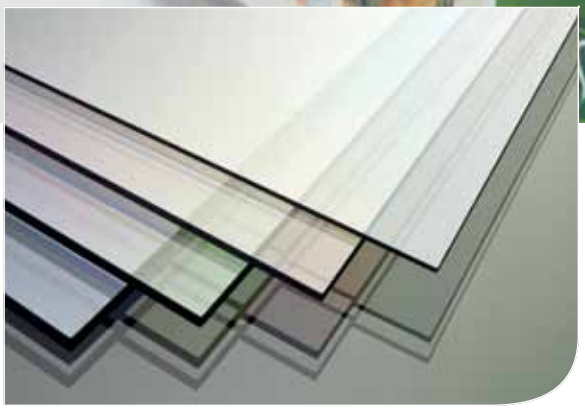
Marcryl acrylic flat sheet can be flame polished. Normally the marks of the preceding sawing or milling operation are still visible after polishing unless an intermediate step of scraping the edge smooth is carried out. The edges must be free from notches, swarf or dust and oils or greases.

Thicker sheets cannot normally be flame polished because of the excessive surface stress that can build up during the treatment. Ensure that the flame does not touch the area behind the edge as this may result in thermal stress build up which could lead to cracking or crazing during further treatment or in use. A high temperature flame is most appropriate. Do not allow the flame to remain stationary otherwise the material may scorch, bubble, become discoloured and even catch fire.

PETg

Marpet-g FS is a clear transparent thermoplastic co-polyester that offers excellent strength to weight ratio, superior chemical resistance, durability and outstanding thermoformability.

It is suitable for digital and screen printing and typical applications include point of sale, table holders, menu holders, lightboxes, sign & displays, graphic art, poster covers, machine guards, vending equipment, protective screens and shower surrounds.



marpet-g fs

The excellent thermoforming properties of clear Marpet-g FS makes it the ideal product for sign, display and store fixture applications.

marpet-g fs

FLAT PETG SHEET

Marpet-g FS sheet is a clear transparent thermoplastic (polyethylene terephthalate glycol) co-polyester flat sheet that can be used as an alternative to polycarbonate, solid acrylic and PVC sheets. It offers excellent strength to weight ratio, outstanding optical clarity, superior chemical resistance, durability, fire resistance and is 100% recyclable.

Its key benefit is the exceptional ease of workability and thermoformability particularly at low temperatures, it offers in print and display applications. Marpet-g FS is available in 2mm, 3mm, 4mm, 5mm & 6mm and is the ideal graphics adhesion solution suitable for digital and screen printing.

Colours and tints:	Clear
Dimensions:	2050mm x 3050mm
Thicknesses:	2mm, 3mm, 4mm, 5mm, 6mm
Options*:	Special options are available on request

**Subject to request. Minimum order quantities may apply. Please contact Brett Martin for further information.*

TYPICAL APPLICATIONS

- Signage & displays
- Point of sale equipment
- Graphic art
- Poster covers
- Vending equipment
- Protective screens
- Shower surrounds
- Lightboxes

PETg Material Properties

Typical properties of PETg (polyethylene terephthalate glycol comonomer) resin

PROPERTIES		TEST METHOD	VALUE	UNITS
Physical Properties	Density	ASTM D792	1.27	g/cm^3
	Moisture absorption (24hours @ 23°C)	ASTM D570	<0.2	%
	Water solubility	DIN 53122	Insoluble	–
Mechanical Properties	Tensile strength at yield	ASTM D638	53.7	MPa
	Tensile Strength at Break	ASTM D638	26.2	MPa
	Flexural modulus	ASTM D 790	2150	MPa
	Notched izod impact	ASTM D 256	91	J/m
	Rockwell hardness (R-Scale)	ASTM D 785	116	-
Optical Properties	Refractive index	ASTM D 542	1.570	%
Thermal Properties	Vicat softening temperature	ASTM D 125	82.8	°C
	Thermal expansion coefficient	DIN EN ISO 75-2	0.04 - 0.05	mm/m°C
	Service temperature range	–	-20 to +60	°C
Electrical Properties	Dielectric strength	ASTM D 149	16	kV/mm
	Surface resistivity	ASTM D 287	10^{16}	Ω

PETg Fabrication Guidelines

STORAGE & HANDLING

Marpet-g FS sheets are best stored indoors under ambient warehouse conditions up to 20°C, away from direct sunlight, in a cool dry store. Do not store indoors close to heat sources, for example, radiant heaters or boilers. Standing sheets on ends or sides should be avoided.

SERVICE TEMPERATURE

Marpet-g FS can be installed in a diversity of applications, with varying temperatures. The material's mechanical performance is known to remain stable in prolonged service in temperatures ranging from –20 to +60°C.

CHEMICAL RESISTANCE

Marpet-g FS is resistant to many chemicals and atmospheric pollutants. Contact with solvents must be avoided.

FABRICATION

Marpet-g FS transparent sheet is easy to handle and very suitable for fabrication, heating and vacuum forming without whitening or cracking. It has a wide window of processing conditions enabling complex shapes, whilst maintaining good impact strength. Always ensure adequate allowance for thermal expansion.

CUTTING/MACHINING/SAWING

Marpet-g FS can be sawn using standard hand tools, circular saws and band saws with carbide-tipped blades that will produce the cleanest finish. Ensure that the blade is sharp and the material is clamped to prevent vibration which may result in cracking. Marpet-g FS is notch sensitive which can adversely affect the mechanical properties of the material.

DRILLING

When drilling Marpet-g FS it is recommended to use drill bits designed for plastics. To avoid overheating, it's best to use compressed air or wide and highly polished flutes. To prevent vibration, which may result in cracking, it's recommended to clamp the part securely.

DIE STAMPING

Marpet-g FS can be die-cut, with excellent results on thinner sheets. Sharpened steel blades up to 2.5mm can be used. The back board must be correctly aligned for a clean cut, with the blade completely traversing the sheet to avoid notches. Ensure adequate allowance for thermal expansion.

BENDING

Marpet-g FS is suitable for cold and hot bending techniques. Cold bending is ideal to create simple shapes. It is recommended to heat sheets above 3mm to produce more complex shapes. The best result is obtained by heating the sheet on both sides using an electric heater. When the optimum temperature is reached (+105°C) the sheet can be bent with a small radius.

THERMOFORMING

Marpet-g FS can be easily thermoformed using general forming techniques including thermoforming, vacuum forming and line bending. Marpet-g FS does not require pre-drying and forms between 120 - 160°C.

BONDING

Bonding Marpet-g FS can be achieved using suitable adhesive tape, mechanical fixing or welding. When using adhesives ensure they are chemically compatible with PETg. Adhesive types such as polyurethanes and two-component acrylics give good results.

EDGE FINISHING

Following cutting, a good edge finish can be obtained using a suitable polishing paste in conjunction with a medium density Reiter wheel, followed by a soft fabric polishing wheel without paste.

PRINTING

Marpet-g FS can be printed with standard screen and digital printers in conjunction with inks that are suitable for use with thermoplastic co-polyesters. It's recommended to protect the ink from scratches by applying a light coat of clear lacquer. Before printing ALWAYS clean the surface with a soft cloth and use ionized air to clear dust.

INSTALLATION

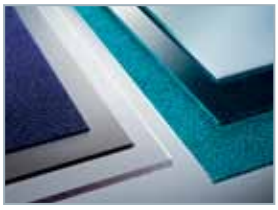
Applications of Marpet-g FS must make adequate allowance for thermal movement. Adequate clearance must be allowed in the holes drilled for fixing and sheet lengths have to be limited so that there is not excessive movement at the ends.

BRETT MARTIN
Plastic Sheets

Typical applications

FLAT POLYCARBONATE SHEET

marlon fs

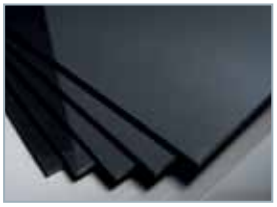


It can be used for:

- Vertical glazing
- Protective screens
- Curved rooflights
- Canopies / Covered walkways
- Signage / Displays
- Illuminated signage
- Thermoforming

OPAQUE FLAT POLYCARBONATE SHEET

marpax

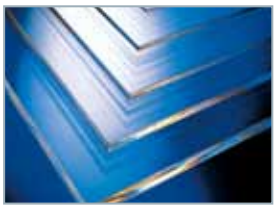


It can be used for:

- Thermoformed trays
- Coloured parts
- Signage
- Protective screens where optical clarity is not required

FLAT ACRYLIC SHEET

marcryl fs

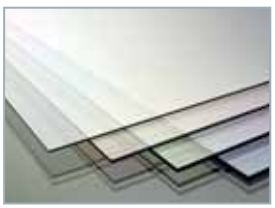


It can be used for:

- Menu boards
- Poster covers
- Glazing
- (Non)-illuminated signage
- Store fixtures
- Picture framing
- Fabrication

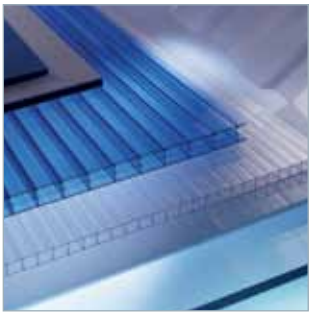
FLAT PETg SHEET

marpet-g fs



It can be used for:

- Signage & displays
- Point of sale equipment
- Graphic art
- Poster covers
- Vending equipment
- Protective screens
- Shower surrounds
- Themoforming
- Lightboxes



Brett Martin's plastic sheet product range includes extensive options in foam PVC, polycarbonate, PVC, acrylic, aPET, PETg, SAN and Styrene.

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Plastic Sheets

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