



ABRASION AND CHEMICAL RESISTANT FLAT POLYCARBONATE SHEET

The properties of the hard coated version of Marlon FS opens up opportunities for applications as diverse as test rigs, specialist traffic signage and commercial glazing - anywhere where continued high levels of transparency are essential but where exposure to deliberate or accidental damage is likely. It not only resists marks and scratches, vandalism, graffiti and physical attack but also withstands a variety of chemicals and increased wear and tear. Marlon FS Hard, with its highly resilient and abrasion resistant surface coating, is most suitable for use in more exposed environments for example, bus shelters, train windows or any application requiring high durability.



marlon **fs** HARD



OPTIONS

- Thicknesses: 3-12mm
- Tints: Clear, Bronze, Green, Blue, Opal, Grey
- Specials: Transparent, Translucent and Opaque options are available on request
- Protective Coatings: Double sided UV, IR Heat Block, Condensation Control

MAIN BENEFITS

- Advanced abrasion resistance on both sides
- Legendary strength 200 times greater than glass, it's virtually unbreakable
- Lightweight, less than half the weight of glass
- Enhanced protection against vandalism and graffiti
- Increased resistance to chemicals
- High natural light transmission
- Design flexibility
- Easy to handle, install and clean
- Weather and UV resistant
- Thermally insulating
- Easy to mount
- Suitable for cold curving
- Fire resistant
- Limited 10 year warranty*

APPLICATIONS

- Security glazing
- Anti-vandal glazing
- Display anti-graffiti protection
- Protective visors
- Police/security shields
- Prison windows
- Bus shelters
- Train windows
- Guard rails
- Telephone boxes
- Sound barriers
- Industrial and architectural applications which require impact, scratch resistance and/or anti graffiti protection





PRODUCT RANGE	
PRODUCT	PRODUCT DESCRIPTION
Marlon FS	Flat Sheet Polycarbonate
Marlon FS Textured	Clear Embossed Flat Sheet Polycarbonate
Marlon FSX Longlife	Flat Sheet Polycarbonate with UV Protective Coating (on one or both sides)
Marlon FSX Textured	Clear Embossed Flat Sheet Polycarbonate with UV Protective Coating (on one or both sides)
Marlon FS Hard	Flat Sheet Polycarbonate with Abrasion and Chemical Resistant Coating (one or both sides)

STANDARD RANGE		
PRODUCT	SHEET SIZE (mm)	SHEET THICKNESS (mm)
Marlon FS Hard	2000 x 3000	3, 4, 5, 6, 8, 10, 12

+ Bespoke sizes can be made – subject to minimum order qty's

PHYSICAL PROPERTIES				
PROPERTIES		TEST METHOD	VALUE	UNITS
Physical Properties	Density	DIN 53479	1.2	g/cm ³
	Water Absorption in Water Equilibrium, 23°C	DIN 53495:A	0.35	%
	Water Permeability	DIN 53122	<2.28	g/cm ³
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	DIN 5036	87-91	%
	Refractive Index	DIN 53491	1.586	
Thermal Properties	Coefficient of Thermal Expansion	DIN 53752	68	m/m.K X 10 ⁻⁶
	Thermal Conductivity	DIN 52612	0.2	W/m.K
	Maximum Continuous Service Temperature		>100	°C

CHEMICAL AND ABRASION RESISTANCE

The innovative protective coating of Marlon FS Hard has been specially formulated to offer enhanced resistance to impact and chemical attack. Graffiti can be easily removed and cleaned and due to its unique coating, it is ideal for use in a variety of speciality applications.

CHEMICAL RESISTANCE	
SOLVENTS	RESISTANCE
Ethanol	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	Drops/Spills
Medium Term Resistance	Up To 8 Hrs
Long Term Resistance	No Attack

ABRASION RESISTANCE ASTM D 1003		
MATERIAL	CYCLES	HAZE CHANGE %
Uncoated	100	29.5
Hard Coated	100	3-6
	500	<12
	1000	< 20

MOUNTING AND CLEANING

Marlon FS Hard can be installed in most types of frames including PVC, wood, steel, and aluminium. The framing system must retain the sheet but allow thermal movement.

Only compatible sealants must be used, these include silicone, EPDM, neoprene or "plasticiser free" chloroprene materials with proven performance. PVC gaskets are not compatible with polycarbonate.

A mild detergent with lukewarm water and a soft cloth or sponge should be used to clean Marlon FS Hard. Ethyl Alcohol used sparingly will remove paint and other such substances.



FIRE PERFORMANCE

COUNTRY	THICKNESS (mm)	TEST METHOD	CLASSIFICATION
EU	2-5	EN 13501-1	Bs1-d0

WARRANTY



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



Marlon polycarbonate is also available in a range of multiwall, corrugated and corrugated multiwall sheet options. For further details please visit the website.

