DESIGNING FOR DAYLIGHT

Architectural Polycarbonate Glazing Systems
OUR REPUTATION

With over 60 years’ experience, Brett Martin has earned a global reputation for the quality and performance of its Marlon polycarbonate glazing, cladding and roofing solutions in architecture. Using this expertise, Brett Martin has extended this experience into the design and development of the Marlon Clickfix1040 Architectural Polycarbonate Glazing Systems. Marlon Clickfix1040 is manufactured in Brett Martin’s own UK based BSI quality approved factories, powered by 25% renewable energy, to meet and exceed the latest industry and legislative requirements, whilst delivering exceptional functionality, guaranteed performance and contemporary design.
CLICK & FIX

Marlon Clickfix1040 is a complete architectural glazing system providing quality natural light, superior thermal insulation and UV protection in addition to the impact resistance, resilience and structural strength inherent in polycarbonate. The modular design consists of interlocking panels which simply click and fix into place for fast and easy installation and a completely seamless finish. With a choice of glazing bar systems Marlon Clickfix1040 is suitable for use in all building types in either the façade or roof, as cladding or partitioning, internally or externally. Systems are designed and extensively tested to limit air and water permeability.

GLAZING SYSTEMS

VF 90mm  VF 55mm  RL 80mm

Cardiff Ice Arena
Scott Brownrigg Architects
THERMALLY EFFICIENT & ENERGY SAVING

Marlon Clickfix1040 is a 40mm structured polycarbonate panel with 10 insulating internal walls. This means there is significantly less thermal conductivity in the panel resulting in a lower U value of 0.99 W/m²K for a more energy efficient building. It also maximises the energy saving benefits of natural daylight. By admitting natural daylight into a building, Marlon Clickfix1040 Architectural Glazing Systems reduce the need for artificial lighting. So when used with lighting controls this system can assist in reducing the energy consumption of a building.

Waterfront Hall
TODD Architects
SOLAR CONTROL

Marlon Clickfix1040 has been designed to achieve optimal solar performance. The translucency of the polycarbonate panels provides a quality diffused light transmission devoid of solar glare for even light distribution and visual comfort. What’s more, light transmitting and thermal properties combine to control solar gain for a comfortable thermal environment.
HEALTH & WELLBEING

Marlon Clickfix1040 admits good quality natural daylight which is particularly beneficial to the well-being and performance of those who occupy the building. Research proves what common sense suggests, that improved natural daylight has important physiological benefits resulting in brighter students, increased industrial productivity and higher retail sales.
VERSATILE ARCHITECTURAL SOLUTION

Offering flexibility and freedom in design and application, Marlon Clickfix1040 can be installed in both horizontal and vertical planes internally and externally. Building designers can create contemporary architectural statements in schools, industrial buildings, leisure and retail facilities with imaginative use in facades, rooflights, northlights and canopies.
DESIGN CONSULTANCY

For specialist projects our Design Consultancy Service provides expert advice throughout the design and construction phase, from CPD presentations, technical design meetings, and on-site installation training, therefore early involvement is key. From initial sketch designs with an Architect, or a material change proposal from a contractor, we can help develop projects using a pragmatic approach to material suitability, aesthetic design, and construction feasibility.

With extensive independent test certification we can advise on the most appropriate use of the system, and design or implement unique solutions to fulfil the client brief.

Environmental factors such as wind and snow loads, temperature, and incident sunlight should be considered in the selection of material colour, transparency, surface finish and spanning capability. Internal factors should also be considered, with building use defining the quantity, quality and internal play of light.

Using our knowledge of construction techniques we can suggest alternative fixing methodologies, and detail bespoke material junctions.
WATERFRONT HALL

Project: £29.5m extension which includes conference and meeting facilities
Solution: 1750m² of Marlon Clickfix1040 wrapped over 150m long riverfront façade
Architect: TODD Architects

ICE ARENA WALES

Project: Building redevelopment project
Solution: 450m² of Marlon Clickfix1040 in irregular shapes on the stadium walls
Architect: Scott Brownrigg

DUQM AIRPORT

Project: Construction of passenger terminal at Duqm Airport
Solution: Blue Marlon Clickfix1040 applied on 37m Air Traffic Control Tower
Architect: Hamza Associates
TECHNICAL SPECIFICATION

STRUCTURE AND DIMENSIONS

![Diagram showing structure and dimensions]
**PANEL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Thickness</td>
<td>40mm</td>
</tr>
<tr>
<td>Panel Structure</td>
<td>10 wall</td>
</tr>
<tr>
<td>Modular Width</td>
<td>500mm ±2.5%</td>
</tr>
<tr>
<td>Overall Width</td>
<td>526mm ±2.5%</td>
</tr>
<tr>
<td>Thermal Insulation</td>
<td>0.99 W/m²K to EN 673</td>
</tr>
<tr>
<td>Weight</td>
<td>4.3kg/m² ±5%</td>
</tr>
<tr>
<td>Non-Fragility Classification</td>
<td>Class B to ACR[M]001 at 1200mm rail/purlin centres</td>
</tr>
<tr>
<td>Fire Performance</td>
<td>B-s1,d0 to EN13501-1</td>
</tr>
<tr>
<td>Recommended Minimum Pitch</td>
<td>10° (for lower pitches, please contact Technical Dept)</td>
</tr>
</tbody>
</table>

**OPTIONS**

- Sheet lengths: up to 12m as standard (longer lengths available to order subject to transport restrictions)
- Standard Colours: Clear (g)*, Pearlescent
- Special Colours: Available to order
- Protective coatings: Double sided UV protection

**GLAZING BAR SYSTEMS**

- Marlon Clickfix 1040 VF 90mm - Vertical Installations 6-12m
- Marlon Clickfix 1040 VF 55mm - Vertical Installations up to 6m
- Marlon Clickfix 1040 RL 80mm - Rooflight Installations up to 6m (min pitch 5°)

**MECHANICAL PROPERTIES**

**STRENGTH & DAMAGE RESISTANCE**

Damage to glazing can be hazardous and expensive but Marlon Clickfix1040 manufactured from polycarbonate offers excellent protection against hailstones, vandalism and accidental damage with an impact resistance up to 200 times greater than glass. This characteristic is maintained over a broad temperature range and prolonged service life. The Marlon Clickfix1040 panel will retain its physical properties in extreme weather conditions making it an ideal glazing system throughout the world. Marlon Clickfix1040 can withstand temperature extremes from -40°C to 100°C (-40 to 212°F) long term and up to 130°C short term. No other glazing material can offer this combination of impact resistance and wide working temperature range.

**UV PROTECTION**

Marlon Clickfix1040 has a high performance UV absorption layer, co-extruded on the outer surface of the panel. This protective layer prevents damaging UV radiation from penetrating the sheet for long term optical clarity and mechanical strength.

**NATURAL LIGHT ENERGY**

With a light transmission of 52% for clear panels and a low insulation value of 0.99 W/m²K, Marlon Clickfix1040 maximises the use of natural light energy. The highly insulating properties of the panel help regulate the temperature of the internal environment for more efficient heating and cooling systems. In addition the panel allows natural light to penetrate the building, reducing the need for artificial lighting. This use of natural light energy reduces CO₂ emissions and the environmental impact of a building.

**CHEMICAL RESISTANCE**

Polycarbonate has good resistance to many chemicals (with the exception of solvents and strong alkalis) so is often suitable for use in aggressive environments.

**FIRE PERFORMANCE**

Marlon Clickfix1040 exhibits excellent fire performance and in the event of a fire it will soften and open, allowing smoke, heat and gases produced by the fire to escape. This ‘venting’ property means that damage within buildings can be limited. For details of fire ratings please contact our Technical department.

**WARRANTY**

Marlon Clickfix1040 is manufactured under Quality Management Systems registered to BS EN ISO 9001:2015. The panel carries a 10 year warranty. For full warranty details please contact our Technical department.

**TESTING**

Systems are designed and tested to the relevant industry standards and performance criteria. For further information please contact our Technical department.
### PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>TEST METHOD</th>
<th>VALUE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tensile strength at yield</td>
<td>DIN 53455</td>
<td>&gt;60 MPa</td>
<td>MPa</td>
</tr>
<tr>
<td>Tensile Strength at break</td>
<td>DIN 53455</td>
<td>&gt;70 MPa</td>
<td>MPa</td>
</tr>
<tr>
<td>Elongation at yield</td>
<td>DIN 53455</td>
<td>6-8</td>
<td>%</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>DIN 53455</td>
<td>&gt;100</td>
<td>%</td>
</tr>
<tr>
<td>Modulus of elasticity</td>
<td>DIN 53457</td>
<td>&gt;2300</td>
<td>MPa</td>
</tr>
<tr>
<td>Charpy notched impact strength</td>
<td>DIN 53453</td>
<td>&gt;50</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Physical Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>DIN 53479</td>
<td>1.2</td>
<td>g/cm³</td>
</tr>
<tr>
<td>Refractive index nD25</td>
<td>DIN 53491</td>
<td>1.586</td>
<td></td>
</tr>
<tr>
<td>Water absorption, 24h @23°C</td>
<td>DIN 53495</td>
<td>0.35</td>
<td>%</td>
</tr>
<tr>
<td>Water permeability (thickness 1mm)</td>
<td>DIN 53122</td>
<td>&lt;2.28</td>
<td>g/m²</td>
</tr>
<tr>
<td>Air Permeability</td>
<td>BS EN 12114:2000</td>
<td>@+50</td>
<td>Po 0.18m³/h.m²</td>
</tr>
<tr>
<td></td>
<td>(BRE)</td>
<td>@-50</td>
<td>Po 0.21m³/h.m²</td>
</tr>
<tr>
<td>Thermal Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softening temperature Vicat 'B'</td>
<td>DIN 53460</td>
<td>148</td>
<td>°C</td>
</tr>
<tr>
<td>Deflection temperature, load 1.8MPa</td>
<td>DIN 53461</td>
<td>142</td>
<td>°C</td>
</tr>
<tr>
<td>Linear thermal expansion</td>
<td>DIN 53752</td>
<td>6.8X10⁻⁵</td>
<td>m/m.K</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>DIN 52612</td>
<td>0.2</td>
<td>W/m.K</td>
</tr>
<tr>
<td>Maximum service temperature</td>
<td></td>
<td>Permanent 100</td>
<td>°C</td>
</tr>
<tr>
<td>- no loading</td>
<td></td>
<td>Short-Term 130</td>
<td>°C</td>
</tr>
</tbody>
</table>

### LIGHT TRANSMISSION

<table>
<thead>
<tr>
<th>COLOUR</th>
<th>LT</th>
<th>SHGC</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear (g)*</td>
<td>52%</td>
<td>0.42</td>
<td>0.48</td>
</tr>
<tr>
<td>Pearlescent</td>
<td>44%</td>
<td>0.28</td>
<td>0.032</td>
</tr>
</tbody>
</table>

* glass effect

Special colours and colour matching available on request. Minimum order quantities apply.
MARLON CLICKFIX1040
GENERAL GUIDELINES

SEALING
It is recommended that the ends of the Marlon Clickfix1040 panel are sealed to minimise the build-up of moisture or dust contamination within the channels. A sealing tape, preferably aluminium, is applied at the top of the sheet to prevent ingress of moisture, dust and insects. A breather tape applied to the bottom end of the sheet permits air to move freely in and out of the sheet, helping minimise condensation. Panels can be supplied pre-taped and cut to specific length to help reduce installation time.

THERMAL EXPANSION
In practical terms it is necessary to allow 3.5mm per linear metre between the top edge of the panel and the glazing profile.

CLEANING
As a condition of ensuring that Marlon Clickfix1040 performs at optimum throughout its service life, it is recommended that the panel be cleaned periodically using suitable household cleaning agents as follows:

• Use lukewarm water to rinse sheet and soften dirt.
• Make up a solution of lukewarm water and ordinary household cleaner or a mild soap and use this to wash sheet.
• A sponge or soft cloth should then be used to gently remove dirt and grime.
• The cleaning process should then be repeated and the sheet rinsed and dried with a soft cloth.
• For larger areas clean the surface with a high-pressure water cleaner.

WARNING
Care should be taken to observe the following precautions:

1. Do not scrub Marlon Clickfix1040 panel with brushes or sharp instruments.
2. Avoid contact with the UV protected surface of Marlon Clickfix1040 by Butyl Cellosolve, Isopropanol or any other solvent.
3. Avoid any abrasives or cleaners of a highly alkaline composition.

It is generally advisable in all instances to test any cleaner on a sample piece of Marlon Clickfix1040 first and it should also be remembered that cleaners and solvents which state that they are suitable for cleaning polycarbonate may not be safe for use on the UV protective surface of Marlon Clickfix1040.
Global Sales
Brett Martin Plastic Sheets
24 Roughfort Road,
Mallusk, Co. Antrim
Northern Ireland BT36 4RB
Tel: +44 (0) 28 9084 9999
Fax: +44 (0) 28 9083 6666
Email: mail@brettmartin.com

UK and Ireland
Brett Martin Daylight Systems Ltd
Sandford Close
Aldermans Green Industrial Estate
Coventry, West Midlands
England, CV2 2QU
Tel: +44 (0) 24 7660 2022
Fax: +44 (0) 24 7660 2745
Email: daylight@brettmartin.com

UAE
Brett Martin Daylight Systems LLC
Office 506
Serene Business Center
Dusseldorf Business Point
Al Barsha
Dubai
PO Box 390667
Email: BMDSLLC@brettmartin.com

Comprehensive sales and technical literature is available for each product range.

All reasonable care has been taken in the compilation of the information contained within this literature. All recommendations on the use of our products are made without guarantees, as conditions of use are beyond the control of Brett Martin. It is the customer’s responsibility to ensure that the product is fit for its intended purpose and that the actual conditions of use are suitable. Brett Martin pursues a policy of continuous product development and reserves the right to amend specifications without prior notice.

For the latest information visit the company’s web site:

www.marlonclickfix.com