

Harlequin BLOC™ Stage System

Technical Summary



Harlequin BLOC is a high-quality modular timber floor system that can be installed to any stage, re-hearsal or show space. The system is adaptable to any stage or room shape.

Harlequin BLOC uses a timber top surface with a high-quality birch plywood panel base layer. It is designed for heavy duty multi-use show and stage flooring and is available in three thicknesses: 36mm, 45mm or 60mm. The exact composition depends on the thickness specified; the 45mm board has an upper surface of 18mm wood with a 27mm plywood base layer.

The wearing and refinishing upper layer is made of softwood timber staves of between 60 and 70mm wide by 18mm thick for a 45mm thick panel, and up to 24mm thick for a 60mm panel. The upper wood layer is pressure bonded to the birch-ply base layer.

The plywood base layer provides high dimensional and structural stability. A bespoke upper layer can be specified with alternative timber types to suit client requirements, local building codes or local environmental considerations. The selected timber will be subject to testing and verification.

The panels are cut and machined to a uniform size using automated CNC machines. Standard Harlequin BLOC panel sizes are 1m x 2m and 2.4m x 1.2m. Bespoke sizes can be manufactured to order, including curved radius edges as required.

The panel edges are subtly chamfered to ensure a gap-free, homogeneous upper surface. Panels can be grooved, pre-drilled and cut for technical access openings, curves for revolves, traps and specialist openings off site using CNC machines, reducing installation time on site.

The Harlequin BLOC system has a grooved recess on all edges and is bonded together on-site using a glued ply tongue inserted during installation.

General Requirements

1. Works must be carried out by suitable qualified personnel. Harlequin BLOC is designed to meet durability and performance safety standards.
2. The panels must be in good condition and dry when installed with a humidity content of 8-10% according to DIN 4074.
3. The sub floor joists (sleepers) must also meet the above standard and be of good quality first class timber, such as pine or fir with no twisted fibres. Joists with large cross-sections can be made of laminated wood.
4. The carrier joists must be fixed to steel using carriage bolts, washers and circlips or as approved by the client's structural engineer. Suitable fixings must be used to fix the flooring sleepers to concrete floors. The dowels must be set in the centre of the sleeper. Any wooden supports that need to be used to where sub-floors are uneven must be glued or nailed to the flooring sleeper. Wedges are not be used.



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5. The boards to the leading edges, contact angles, flaps, technical access panels, offset openings or slots should not have any grooves or rebates and should have a solid wood cross-section or steel angle. Any recess areas necessary to the underside of the flooring must be kept to a minimum to maintain structural strength.
 6. The Harlequin BLOC panels must be laid level. The structure /sub-structure levels should be surveyed before works commence and any deviations in levels must be highlighted and remedied. The maximum difference in levels is +/- 2 mm to the site datum and structure/sub-structure level. For stages that have a slight fall or rake this tolerance only applies to the site datum/design levels as required. Technical stage installations such as power distribution boxes, sockets and traps must be marked up and documented prior to dismantling the previous stage flooring where a replacement stage is required.
 7. The Harlequin BLOC Stage System must be laid with sufficient space round the edges to allow for expansion.
 8. Flaps, slides and traps must be made of the same material as the flooring, the board structure must be homogeneous. Any projection must be equal on all sides.
 9. The screw holes must be sealed flush to the surface before sanding using a suitable liquid wood putty or plug as required/specified.
 10. Harlequin BLOC is pre-sanded and sealed in the factory but can be re-sanded on site using sanding equipment as required. The sanded surface must be smooth and level. Once sanded, the flooring surface must be resealed/treated with a pigmented, open-pore, non-film forming stage oil (natural oil, free of aromas) or stained, painted or covered in a sacrificial layer as required. This may require successive coats. All coating systems must be approved by Harlequin.
 11. Harlequin BLOC Board Specification & Dimensional tolerances:
 - Timber: DIN 4074
 - Softwood Cross Laminate Timber
 - Thickness 36mm, 45mm & 60mm thick +/- 0.02mm
 - Supplier: Harlequin
 - Strength UDL: 7.5 kN/m²
 - Length: 1000 or 2000 or 2400 +/- 0.15mm
 - Note: length chamfer 0.25 to lower edge. +/- 0.02mm
 - Width: 1000 or 1200 +/- 0.15mm
 - Note: length chamfer 0.25 to lower edge. +/- 0.02mm
 - Thickness: 36mm, 45mm or 60mm +/- 0.15mm
 - Groove: depth 9mm +/- 0.02mm x width 16mm +/- 0.05mm
 - Tongue: depth 9mm +/- 0.02mm x width 30mm +/- 0.02mm
 - Curved/Radius edges: Radii measurement +/- 0.15mm
 - The board comes pre-coated (sealed) ready for final finishes e.g. lacquer or paint applications

