BRITAL
ALUMINIUM FACADE DESIGNS

SG - 4 - 56 - RG

4 Sided Frameless Structurally Glazed Roof System

Specification (Sheet 1 of 2)

Introduction

All Brital systems are designed to be interchangeable with each other and enable a range of various constructions to be achieved providing they comply with the requirements of the technical manuals.

The Brital 4-sided frameless structural glazed roof glazing system is designed to be fully compatible with the other Brital curtain walling systems.

Structural support for the Brital products are derived from aluminium mullion/transom systems which are common to the 4-sided structurally glazed curtain walling which must be erected as described in the appropriate manual.

Double glazed units are fitted with aluminium channel inserts using a recognised and approved structural grade silicone installed to manufacturer's recommendations.

The system currently suits 35.5mm double glazing units as either fixed or opening shutters. Used in conjunction with each other an almost limitless number of permutations can be achieved to suit most architectural requirements.

Fixed double glazing incorporates flush edged double glazing units whilst the opening shutters utilise double glazing units that have stepped edges to enable clean and continuous sight lines whilst providing high levels of performance. All double glazed units MUST be dual sealed with a P.I.B. primary seal and a silicone secondary seal suitable for units being placed in SSG applications.

Structural Bond

Since the structural bond between the glass and aluminium vent / aluminium channel inserts in DG units is of critical importance, Brital insist that the glazing is bonded to the channel inserts under controlled factory conditions by a company that have met the stringent requirements of the silicone sealant manufacturer. Brital will, if necessary, recommend specialist applicators who can bond the glazing into the carrier frames. In addition the Brital system has the mechanical restraint to the glass, for added long term security and safety.

Materials

Aluminium profiles are extruded from aluminium alloy 6063 T6 complying with the recommendations of

BS EN 12020-2:2008/
BS EN 755-9:2008.

Structural grade silicones are supplied to specialist manufacturer's specifications and must be tested before use, by the sealant manufacturer, for both adhesion and compatibility.

Rubber extruded gaskets and thermal break sections are manufactured from EPDM rubber, purpose designed to suit the Brital 4-sided frameless structurally glazed curtain walling system. Only EPDM sections supplied by Technical Seal Co. Ltd. specified for the Brital system are to be used.

The roof glazing mullions are provided with a thermal break between the external and internal sections.

Finishes

Very little of the finish is visible externally, therefore, on the non-thermal break vents the finish should be selected to best suit the internal decor.

1. Anodized to BS 1615 or BS 3987 (Natural or Coloured)
2. Powder organic coating to BS 6496

Subject to Brital approval other finishes may also be used.

Construction

Structural glazing vents are fabricated from aluminium sections mitre cut at 45°, the corners are reinforced with extruded aluminium cleats and corner braces. Secure joints are formed by mechanically crimping into the extruded crimping cleat.

Glazing

The double glazed units are site glazed into the roof glazing grid.

The inside pane of all fixed DGU to be Toughened glass (Heat Soak Test) to BS EN 14179 Part 1. For the best appearance Brital recommend the use of either reflective glass or a glass with a low light transmission coefficient and either opaque or reflective glass to spandrel areas.

Installation

The installation of the double glazed units into the roof glazing is designed to be very quick and easy.

Once positioned in the curtain walling grid, local fixing lugs at 400mm max centres applied to frame jambs are fixed back using Pan headed screws. These then push the double glazed units back against the curtain walling inner gasket to seal the inner faces.

Following installation of all the double glazed units an approved compatible weather seal (non-structural) must be applied between the glazing joints.

Fixed lights

The maximum sizes of carrier frames for fixed lights will be dictated by the roof glazing grid's limitations and the fabricator's own handling limitations (both in factory and on site).

Where individual units are greater than 2.5m high x 1.5m wide, Brital's approval should be sought.

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4 Sided Frameless Structurally Glazed Roof System

Specification (Sheet 2 of 2)

Opening Vents

The only opening vents the system provides are fully structurally glazed projected top hung windows.

These windows are hung utilizing specialist Master hinges and windows can be made in various sizes.

The opening roof lights are designed to be used at angles between 70 and 15 degrees to the horizontal.

The opening roof lights are designed to be operated by means of electrical or mechanical remotely operated gear, for details of teh gear refer to specialist suppliers (e.g. SE controls.)

Fittings

Master friction hinges.

Only specified fittings and components are to be used.

Performance

The Brital curtain walling systems have been designed to comply with the requirements of the CWCT (Centre for Window and Cladding Technology; Bath University, UK) standard for systemised building envelopes. This standard is equal to or better than the requirements of ASTM/AAMA & EN standards for curtain walling systems.

Reglazing

In order to reglaze a broken double glazing unit or panel, the weather seal around the pane must be cut out to expose screw fixings. The fixing lugs are then removed to allow the double glazed unit to be removed for the purpose of reglazing.

Design

Mullions are to be designed to resist the maximum wind loads expected in a 50 year period as defined using the British Standard Code of Practice 3 Chapter V part 2. Under such conditions the maximum deflection in the mullion should not exceed the span between points of attachment to the building divided by 200, or not more than 20mm, whichever is the lower.

Glass Tolerances

The Brital systems have been designed for the following glass tolerances:

Max. glass or double glazing unit sizes:

Width ± 1mm
Height ± 1mm

All the visible glass edges are to have a 1mm x 1mm arrissed finish.

Maximum Sizes Limits. (top hung opening)

Hinge Reference	Hinge Length (mm)	Opening Angle	Maximum Height (mm)	Maximum Width (mm)	Maximum Weight (kg)
BR-1206.10	260.5	35	450/600	1200	50
BR-1206.12	311.0	30	601/800	1200	70
BR-1206.14	349.5	30	801/1000	1200	80
BR-1206.16	410.5	25	1001/1200	1200	95
BR-1206.18	458.5	25	1201/1400	1500	108
BR-1206.20	509.5	20	1401/1500	1500	115

Only specified Master hinges to be used.