BRITAL
ALUMINIUM FACADE DESIGNS

CG - 4 – 56
4 Sided Fully Capped Curtain Walling 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 fully capped curtain walling system is designed to be fully compatible with the structurally glazed Brital curtain walling systems.

Structural support for the Brital products are derived from a basic curtain walling system which is common to both the structurally glazed curtain walling and capped curtain walling which must be erected as described in the appropriate manual.

Top hung opening units are structurally glazed into the vent frames and must use a recognised and approved structural grade silicone installed with the manufacturer's recommendations.

The system currently offers frames for three types of glazed units, a 24mm thick double glazed fixed light unit, a 6mm single glazed spandrel panel and a 24mm double glazed top hung casement. 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 top hung windows utilise double glazing units that have stepped edges to enable clean and continuous sight lines whilst providing high levels of performance.

All fixed double glazed units MUST be dual sealed with a P.I.B. primary seal and a secondary seal.

All top hung double glazed units MUST be dual sealed with a P.I.B. primary seal and a structural silicone secondary seal suitable for units being placed in SSG application.

Structural Bond

Since the structural bond between the glass and aluminium vent section is of critical importance, Brital insist that the glazing is bonded into the vent frames 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.

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 are manufactured from EPDM rubber and thermal break sections are manufactured from PVC materials, purpose designed to suit the Brital Fully Capped curtain walling system.

Only EPDM sections supplied by Technical Seal Co. Ltd. specified for the Brital system are to be used.

The curtain wall mullions and transoms are provided with a thermal break between the external and internal sections. Top hung vents may be either thermally or non-thermally broken.

Finishes

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.

Because the curtain wall incorporates different sections inside and outside, a combination of colours and finishes can also be achieved between inside and outside.

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 curtain walling grid.

For the best appearance Brital recommend the use of either opaque or reflective glass to spandrel areas.

Installation

The installation of the glazing and vent frames into the curtain walling is designed to be very quick and easy. Once positioned into the curtain walling grid, the glazing/vent frame is retained by pressure plates fixed at 50mm from each end and at 300mm max centres around the frame using pan headed screws. These then push the glazing/vent frame back against the curtain walling inner gasket to seal the inner faces.

Fixed lights

The maximum sizes of glazing for the fixed lights will be dictated by the curtain walling grid 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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Panel Units

Spandrel panels may be either Single or Double glazed. Single glazed panels require an aluminium carrier frame bonded on the inside.

The maximum size of glazed spandrel panel units will be dictated by the curtain walling grid set-out limitations and the fabricator's own handling abilities (both in the factory and on site).

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

Where the internal backing is exposed to the inside of the building, the design should consider the rigidity of the lining panel and its external finish, this may involve bonding insulation to a lining panel or using a thicker panel with a greater stiffness if necessary.

Opening Vents

The only opening vents the system provides are fully structurally glazed projected top hung windows and open in Thermally Broken (TB68) vents as well.

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

*Where windows are at 1st floor and above Brital recommend the maximum opening should not be more than 100mm. This can be achieved by using additional Master restrictors in the lower part of the window jambs.

Fittings

Opening Vents:- Master friction hinges, Master operating handle, Espagnolette & keeps at cill, Corner transmissions & keeps at jamb. Espagnolette size to suit vent width.

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. Charts are provided which show the maximum mullion spans for each mullion type at various wind loads and mullion spans.

These charts are based on Single span Mullions - (simply supported)

These charts are for guidance only and all structural calculations must be checked by a structural engineer.

Double Span Mullion - (as propped cantilever)

Where double span situations exist (or more spans) outside of these parameters, Brital must provide a technical assessment of the design. All calculations must be checked by a structural engineer before procurement and production.

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 (45)	450/600	1200	50 (36)
BR-1206.12	311.0	30 (40)	601/800	1200	70 (43)
BR-1206.14	349.5	30 (40)	801/1000	1200	80 (50)
BR-1206.16	410.5	25 (35)	1001/1200	1200	95 (65)
BR-1206.18	458.5	25 (35)	1201/1400	1500	108 (78)
BR-1206.20	509.5	20 (30)	1401/1600	1600	115 (90)
BR-1206.22	555.5	20 (30)	1601/1800	1600	120 (100)
BR-1206.24	599.5	20 (25)	1601/1800	1600	130 (120)
BR-1206.28	713.0	10 (20)	1801/2000	1600	145 (140)

Only specified Master hinges to be used.
Note: The opening angle may be increased to the value shown in the brackets provided that the maximum weight is reduced to the value in brackets in the maximum weight column.