

Introduction

The Brital unitised curtain walling system is designed to give an alternative to the structural glazed and capped Brital curtain walling systems.

The unitised curtain walling systems have been growing in popularity and have many advantages over the conventional stick system, particularly for tall building projects. Unitised systems are easy to erect on site and should give faster site programmes. The build quality is improved and the quality of factory manufactured units is easier to control.

Glazed units are fitted into the unitised frames using 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 28mm thick double glazed fixed light unit, a 6mm single glazed spandrel panel and a 28mm 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 at SSG transom MUST be dual sealed with a P.I.B. Primary Seal and a Structural Silicone secondary seal suitable for units being placed in SSG applications.

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 vent 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, purpose designed to suit the Brital unitised curtain walling system. Only EPDM sections supplied by Technical Seal Co. Ltd. specified for the Brital system are to be used.

Finishes

Very little of the finish on the frame sections are visible externally; therefore, the finish should be selected to best suit the internal décor. The type of finish may be either of the following:

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

Unitised frames, transoms and vent frames are fabricated from aluminium sections mitre cut at 45°, the corners are reinforced with extruded aluminium cleats. Secure joints are formed by mechanically crimping into the extruded crimping cleats. The machining of the bars for this system is best undertaken using CNC machining equipment.

Glazing

The double glazed units must be factory glazed into the unitised frames by approved specialists. 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 glazed unitised frames into the building is designed to be very quick and easy. The units are positioned horizontally in the building at the lowest level and fixed to prefixed adjustable fixing brackets.

A second row of units can then be stacked horizontally on the top of the first row, fixed back to the prefixed brackets at the head and with splice plates at the cill locating into the lower units.

Fixed lights

The maximum sizes of unitised frames for fixed lights will be dictated by the curtain walling grids limitations and the fabricators own handling limitations (both in factory and on site).

Where individual units are greater than 4m high x 1.5m wide, Brital's approval should be sought.

Fittings

Thermally broken Vents:- Master friction hinges and operating handles, Espagnolette & Keeps at cill. Espagnolette size to suit vent width.

Only specified fittings and components are to be used.

Reglazing

Reglazing has to be carried out on site.

Brital's Technical Office should be consulted on the best way to carry this out.

Opening Vents

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

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

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) Standard for systemised building envelopes. This standard is equal or better than the requirements of ASTM / AAMA & EN standards for curtain walling systems.

Design

BRITAL recommend mullion deflection limits in accordance with the CWCT recommendations.

Length(mm)	Allowable Deflection (mm)
L<3000	L/200
3000<L<7500	L/300 +5
7500<L	L/250

Alternatively mullion deflection limits may be used from other internationally accepted standards such as AAMA standards (L/175)

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

Glass Tolerances

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

Max. glass or double glazing unit sizes:

Height \pm 1 mm

Width \pm 1 mm

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.

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