

Introduction

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

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 28 to 38mm thick double glazed fixed light unit, a 6mm single glazed spandrel panel and a 28 or 36mm 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 glazing units that have stepped edges to enable clean and continuous sight lines whilst providing high levels of performance. All low 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/mullion/transom is of critical importance, Brital insist the glazing is bonded into the 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 can bond the glazing into the vent frames and unitised frames. In addition the retail system has the provision to incorporate mechanical restraint to the glass for added long-term security and safety.

For areas where a larger silicone bite size is required a wider (100mm) section is available.

Materials.

Aluminium profiles are extruded from aluminium alloy 6063 T6 complying with 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 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 Brital approved suppliers 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 decor. 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 written 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 mechanical crimping into the extruded crimping cleats.

The machining of the bars for the 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 unitize 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 grid's limitations and the fabricator's own handling limitations (both in factory and on-site).

where individual units are greater than 4m high by 1.5m wide Brital's approval should be sought.

Fittings

Thermally broken vents Master friction hinges and operating handles Espagnolette and 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 shall be 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 utilising specialist Master hinges and windows can be made in various sizes.

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	50 (36)
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 not be more than 100mm. This can be achieved by using additional Master restrictors in the lower part of the window jambs. Opening windows are not designed to be left open in high winds, therefore clients should be advised.

Weather Resistance

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 and EN standards for curtain walling systems.

Thermal performance

The Brital edge protection curtain walling section is designed to both protect the edge of the glass from accidental damage and to improve the thermal performance of the curtain walling system in order to achieve the improved U values now required by clients and statutory authorities. The thermal performance of the IGU's can be further improved by the use of warm edge spacers and/or gas

filling of the IGU's. Brital's technical department will be pleased to advise on the improvements that can be made using these techniques.

Design

Brital recommend million deflection limits in accordance with the CWCT recommendations.

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

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

The deflection on the edge of any single IGU is usually restricted to 15mm.

Glass Tolerances.

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

Max. glass or double glazing unit sizes:

Height ± 1mm

Width ± 1mm

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