

### 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 manufacturers recommendations.

The system currently offers frames for three types of glazed units, a 28 mm 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 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 aluminum vent /mullion / transom

is of critical importance, Brital insist that 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 who can bond the glazing into the vent frames and unitised frames. In addition the Brital system has the provision to incorporate mechanical restraint to the glass, for added long term security and safety.

### Materials

Aluminum profiles are extruded from aluminum 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 manufacturers 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 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 Brital approval other finishes may also be used.

### Construction

Unitised frames, transoms and vent frames are fabricated from aluminum sections mitre cut at 45°, the corners are reinforced with extruded aluminum 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 form 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 ± 1 mm

Width ± 1 mm

All the visable 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 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 100 mm. This can be achieved by using additional Master restrictors in the lower part of the window jambs.