

800 Series Thermally Broken Window System - SPECIFICATIONS

1. Scope

This specification defines the basic design concept, construction, materials, fittings and performance of WGL 800 series thermally broken Casement and Tilt/Turn window.

2. Design Concept

The profiles and components in this range have been specially designed to provide a thermally broken Casement and Tilt/Turn window that is glazed externally or internally.

Compatible with WGL 500 series curtain wall and WGL 200 series entrance screen system.

In addition to use as a Casement window, the system can be used as ground floor screen work up to a height of 3.6m by using coupling mullion reinforced with steel.

3. Materials

Aluminium alloy 6063 TE & TF, stainless steel and appropriate high quality seals used throughout.

4. Finishes

The construction allows for fabrication of all exposed members from pre-finished lengths of aluminium extrusion.

These exposed profiles will be available in a range of finishes:

- a) Anodised to BS 3987, Grade AA25. Etched and anodised natural self-colour, black, bronze and standard colour range.
- b) Synthapulvin paint standard colour range.
- c) Non-standard colours are available upon request.
- d) Synthapulvin paint finish to a marine / swimming pool environment finish.

5. Construction

Perimeter members are cut at a 45° mitre. The corners being reinforced and joined using extruded aluminium

corner cleats and ties then sealed with a corner jointing adhesive. Intermediate mullions and transom bars are square cut, machined and fixed to outer frame using self-tapping screws and stainless steel pins.

6. Hardware

Side and top hung projecting vents are fitted as standard with friction hinges and either cockspur handles or espagnolette bar and handle. Tilt and turn windows with specialised gear is also accommodated. A parallel hinge option is also available.

7. Glazing/Infill

The range has been designed for a basic 28mm glass or panel thickness.

Glass is set against rubber retaining gasket set into a groove in the bead/frame, with internal locking wedge gasket completing the glazing. Glazing gaskets are manufactured from BS7412 trade standard TPE material with silicon lubricant. TPE material can be used with self-cleaning glass, such as Pilkington Active. The glass is then held in place with either WGL835 or 837 clip-in spring bead depending on glass thickness.

8. Performance (weather)

The construction allows for a very effective inside seal between glass and aluminium. This, combined with pressure equalised drainage, means that a correctly installed window system will be completely watertight. The system having been tested in house up to the test pressure 'class 600Pa' as specified in BS 6375: Part 1: 1989 for water, air permeability and wind resistance.

The system has also been tested by a UKAS accredited testing facility, for water, air permeability and wind resistance and passed BS 6375: Part 1:2004.

9. Important note

Profiles must be used in their insulated form (thermally broken) to conform to Part `L` of the building regulations

SIZE LIMITATIONS - Casement Vents

Vent height / width is measured from rebate to rebate. All hinges used must have a **stack height of 17mm**

Normal duty hinges (using **Defender (D) / Nico (N) Hinges**) ~ Top Hung

Max vent height (mm)	Max vent weight (kg)	Hinge size	Opening Angle	Opening angle for Restricted Hinges	Restricted Angle	Man'f (D)Def'er (N) Nico
351	12	204mm (8")	65°	-	-	D/N
401	16	255mm (10")	80°	-	-	D/N
551	20	305mm (12")	80°	65°	14°	D/N
781	21	408mm (16")	80°	59°	10°	D/N
1101	26	510mm (20")	50°	50°	8°	D/N
1301	40	608mm (24")	37.5°	37.5°	7°*	D/N
1500**	50	608mm (24")	27°	-	-	Def only

Note: Minimum opening sash size for crimping, is 400mm overall sash. Sash sizes below this may need to be screwed & glued together at the corners.

Normal duty hinges (using **Defender (D) / Nico (N) Hinges**) ~ Side Hung

Max vent width (mm)	Max vent weight (kg)	Hinge size	Opening Angle	Angle of opening (restricted)	Restricted Angle	Man'f (D)Def'er (N) Nico
601	22	305mm (12")	60°	58°	13°	D/N
701	24	408mm (16")	60°	58°	11°	D/N
¹ 901	30	408mm (16")	90°	-	-	Def only
² 1000	40	408mm (16")	60°	-	-	Def only

Note: Minimum sash height for hinge and restrictor or restricted hinge is 375mm

Maximum sizes of vent can be exceeded provided opening movement of vent is permanently restricted - suitability to be confirmed with technical department.

Heavy duty hinges (using **Sterling Hinges**) ~ Top Hung

Max vent width (mm)	Vent height (mm)	Max vent weight (kg)	Hinge size	Opening Angle
2000	267-635	37	262mm (10")	50°
2000	636-787	45	313mm (12")	50°
1800	788-1090	55	415mm (16")	50°
1650	1091-1500	75	567mm(22")	45°
1100	1501-1800	100	680mm(26")	20°

Note:
 **Heavy duty 608mm (24") top hung hinge reference is EDTH24
 *NB. 24"restricted Max vent h't =1300mm

Heavy duty hinges (using *Sterling Hinges*) ~ Side Hung

Max vent width (mm)	Vent height (mm)	Max vent weight (kg)	Hinge size	Opening Angle
661	1550	38	262mm (10")	85°
838	1725	55	415mm (16")	60°

Bottom Hung Open Out

Casement sash WGL 815 can also be used with butt hinges to provide bottom hung open out vents.

Maximum sash width ~ 1800mm

Maximum sash height ~ 1000mm

Maximum sash weight ~ 50kg

SIZE LIMITATIONS – Top Hung Vents –WGL815

Top hung vents with a sash size of more than 1500mm must be fitted with shoot bolt locking with 'wrap around' corner espagnolette (250mm extensions must be used with rebates over 1400mm). Night vent facilities are NOT compatible with 'wrap around' corner espagnolette.

SIZE LIMITATIONS - Tilt and Turn (Tilt First).

Concealed Tilt and Turn hardware is recommended for use on the 800 series Tilt Turn system.

Hardware height / width sizes are measured from sash rebate to rebate (eurogroove to eurogroove).

Maximum sizes permissible for Tilt/Turn hardware is: (For single pane sashes)

Sash rebate size Height = 2000mm. (weight limited to 100 kg)

Sash rebate size Width = 1400mm. (ratio limitation – width of gear must not exceed 1.5x the height)

NB. Any intermediate rails on sashes to be detailed with georgian bar or external trims unless otherwise approved.

Tilt Only (Open in)

Concealed Tilt only hardware is recommended for use on the 800 series Tilt system.

Hardware height / width sizes are measured from sash rebate to rebate (eurogroove to eurogroove).

Maximum sizes permissible for Tilt hardware is:

Sash rebate size Height = 1400mm. (weight limited to 80 kg)

Sash rebate size Width = 1400mm.

Turn Only (Open in)

Concealed Turn only hardware is recommended for use on the 800 series Turn system.

Hardware height / width sizes are measured from sash rebate to rebate (eurogroove to eurogroove).

Maximum sizes permissible for Turn hardware is:

Sash rebate size Height = 1400mm. (weight limited to 80 kg)

Sash rebate size Width = 1400mm.

Note:

1. Heavy duty 408mm (16") side hung hinge reference is EDSM16HA-SP
2. Heavy duty hinge reference is EDSH16

Parallel window (Open out)

Parallel hinge hardware is used on the 800 series parallel window system.

Hardware height / width sizes are measured from sash rebate to rebate (eurogroove to eurogroove).

Maximum sizes permissible for Parallel hardware is:

Sash rebate size Height = 2916mm. (weight limited to 80 kg)

Sash rebate size Width = 1416mm.

SIZE LIMITATIONS – Framing members

Framing Members

Framing members. – Examples of the limitations on the span of framing members based on a maximum distance between mullion centres of 1000mm and at a pressure of 900Pa are thus:-

WGL 841 teebar – 1950mm

WGL 841 teebar with 44x44mm support box behind - 2150mm (additional information concerning these spans can be obtained by referring to Wind Load Chart for WGL802 back to back)

WGL 841 teebar with 75x51mm support box behind - 3150mm (additional information concerning these spans can be obtained by referring to Wind Load Chart for WGL830 without insert flat)

WGL 830 coupling mullion – 3350mm

WGL 830 coupling mullion with reinforcement – 3950mm

