

The Clement W20 Steel Window & Door Technical Specification

Product Summary

A traditional, tried and tested robust window, designed in the 1960s, but still in demand today. W20 may be used in all types of building where strong, durable frames, efficient opening casements and hard wearing fittings are required.

Part L Regulations

Compliant to Part L, using the centre pane glass U value method.

Manufacturing Specification

Made to suit your individual requirements W20 windows are generally manufactured in accordance with BS 6510:2010 specifications for hot rolled steel windows. The mild steel sections used for Clement window and door frames are precision rolled in Switzerland using recycled steel to suit Clement's unique profiles and tolerances. All frames and ancillary profiles are hot dip galvanised to BS EN ISO 1461 and available with a factory applied polyester powder coating to BS EN ISO 13438 from the RAL colour range, exceeding the minimum paint thickness over the zinc of 60 microns.

Manufacturing Description

Frames are manufactured from hot rolled mild steel profiles with corner joints mitred, welded and dressed square and flat. Small panes can be formed with T glazing bars whose ends are tenon riveted and/or welded to the frame and cross joints are interlocked and welded with rigid joints. Composite windows can be assembled by connecting windows horizontally and/or vertically with mullions and/or transoms of hot rolled slim steel profiles. Box sections are available as tubes or as box mullions which can be either hot rolled or manufactured from sheet steel. Pressed metal cills are available in a choice of profiles. Trickle vents can be fitted in accordance with Part F of the Building Regulations.

Locking system

The W20 range of windows is available with multi point locking to PAS24 or traditional single point locking and other security devices if required.

Fixing

W20 windows can be fitted into timber subframes, or direct to brickwork, concrete or stone. Windows are installed using fixing lugs or direct using stainless steel screws.

Glazing

W20 can be supplied with various glazing options, from both inside or outside including:

- Clear glazing
- Genuine T bars
- Leaded lights, using real lead that is soldered by hand in a diamond or rectangular pattern in variable widths of lead
- G+, no grille in cavity

Combinations of fixed lights, top hung, side hung, bottom hung, horizontal and vertical pivot windows are available as well as single and double doors in both 'open in' and 'open out' configurations.

W20 windows are available as single or insulated glass units up to 16 mm. When working on highly sensitive, Listed Buildings there is an option for outside single glazing with either putty or silicone fronting. All opening vents are weather-sealed using EDPM.

In accordance with Glass & Glazing Federation best practice, Clement steel windows are factory glazed, however, our concealed fixings mean that fixed light windows need to be glazed on site after the frames have been installed. Glazing beads are made of aluminium.

W20 windows can be supplied shaped, with shaped heads, and 'curved on plan'.

Dimensions (Provided for guidance purposes only)

| | |
|---------------------------------------------|--------|
| Nominal profile width | 32mm |
| Typical sight lines: fixed lights perimeter | < 40mm |
| Hinged casements | < 70mm |

Windows and doors for composite panels are purpose made, generally within the limits shown in the table below; sizes outside these limits may be discussed with one of our sales consultants.

| WINDOWS | | | | | |
|------------------|-------|------|--------|------|-----------|
| | Width | | Height | | Perimeter |
| | Min | Max | Min | Max | Max |
| Fixed light | 300 | 3000 | 300 | 3000 | 9200 |
| Top hung | 300 | 1800 | 300 | 1800 | 8400 |
| Side hung | 300 | 900 | 300 | 2400 | 6400 |
| Bottom hung | 300 | 1800 | 300 | 1500 | 6400 |
| Horizontal pivot | 400 | 1800 | 400 | 1800 | 6400 |
| Vertical pivot | 400 | 1500 | 400 | 2400 | 6500 |
| DOORS | | | | | |
| | Width | | Height | | Perimeter |
| | Min | Max | Min | Max | Max |
| Single | 600 | 900 | 2000 | 2500 | 6600 |
| Double | 1200 | 1800 | 2000 | 2500 | 8400 |

Source: Steel Window Association

Performance

W20 windows meet the weather-tightness (air infiltration, water penetration and wind loading) performance criteria within BS 6375-1:2009 appropriate to the specified design wind pressure.

BS EN6375 part 1

W20 side hung vents have been weather tested to BS EN6375 part 1 achieving the following results:

Air permeability 600Pa, class 4
 Water tightness 750 Pa, class E750
 Wind resistance 2000Pa, class C5

BS 6375-1:1989

Air permeability was measured in terms of opening joint length (m³/h/m) against progressively increasing test pressures through 200Pa (class A), 300Pa (class B) up to 600Pa (class C). Class B, or a maximum value at 300Pa of about 16 m³/h/m, was the UK standard requirement. Water tightness was measured in resistance to leakage at progressively increasing test pressures, 300Pa being considered the most severe UK requirement. Wind load resistance entailed deflection and gusting tests at pressures ranging from 1200Pa to 2400Pa.

| BS 6375-1 Test Pressure Class 1989 edition | | | | |
|--------------------------------------------|-----|-------|------|-----------------------------|
| Window Type | Air | Water | Wind | BS 6375-1 Exposure Category |
| Fixed light | 600 | 300 | 2400 | 2400 |
| Top hung | 300 | 200 | 2000 | 2000 |
| Side hung (open out) | 300 | 200 | 2000 | 2000 |
| Side hung (open in) | 200 | 100 | 1600 | 1200 |
| Bottom hung | 200 | 100 | 1600 | 1200 |
| Horizontal pivot | 200 | 100 | 1600 | 1200 |
| Vertical pivot | 200 | 50 | 1600 | 1200 |

Source: Steel Window Association

| BS 6375-1 Test Pressure Class 2015 Edition | | | | | | | |
|--------------------------------------------|-----|-------|-------|-------|------|-------|-----------------------------|
| Door Type | Air | Class | Water | Class | Wind | Class | BS 6375-1 Exposure Category |
| MPL Single Door | 600 | 4 | 450 | 8A | 2000 | C5 | 2000 |
| MPL Double door | 600 | 4 | 300 | 7A | 2000 | A5 | 2000 |

Heat

W20 windows when double glazed with argon filled low-E warm edge insulating glass units, will have a typical “U” value of 2.9.

Sound

The average sound reduction index (SRI) of a double glazed unit is approximately 31 dB, but this varies with window type and size and glass thickness.

Security

In accordance with approved Document Q we can achieve PAS24:2016 on top hung and side hung vents, as well as single and double doors when using our multi point locking systems.