

## L 10 WINDOWS / ROOFLIGHTS / SCREENS / LOUVRES

### 320 STEEL WINDOWS AND DOORS

- Manufacturer: Steel Window Service and Supplies Limited, 30 Oxford Road, London N4 3EY  
Tel: 020 7272 2294, Fax: 020 7281 2309, web: www.steelwindows.co.uk, email: post@steelwindows.co.uk
- Product reference (standard security): W40 range mild steel window sections.
- Product reference (enhanced security): W40-SBD "Secured by Design" range mild steel window sections.
- Mild steel: To BS EN 10025-2 and cold straightened.
- Manufactured in accordance with BS 6510 and recognised good practice.
- Manufactured in the United Kingdom to ensure compliance with, and understanding of, relevant British Standards in addition to relevant harmonised European Standards.
- Weather tightness: To BS 6375-1 (2009 edition).
- Exposure category (design wind pressure): 1200 (Pa) unless otherwise specified.
- Air permeability, water-tightness and window resistance test data:

<b>Window Type</b>	<b>Air permeability</b>	<b>Water tightness</b>	<b>Wind resistance</b>	<b>Exposure category</b>
Fixed light	Class 4	300 Pa	Class C5	2000 Pa
Top hung open out	Class 3	300 Pa	Class C5	2000 Pa
Side hung open out	Class 4	300 Pa	Class C5	2000 Pa
Side hung open in	Class 4	300 Pa	Class C5	2000 Pa
Bottom hung open in	Class 4	300 Pa	Class C5	2000 Pa
Horizontal pivot casement	Class 4	300 Pa	Class C5	2000 Pa
Vertical pivot casement	Class 2	150 Pa	Class C5	1200 Pa

- Operation and strength characteristics: To European harmonized testing methods specified in the window and door product standard BS EN 14351-1 and to BS 6375-2 Performance of Windows and Doors – Operation and Strength.
- Construction: Frames shall have welded corners, dressed square and flat, and be sized within tolerances of +/- 2mm. Tee glazing bars shall be tenon riveted and/or welded to frames and interlock with rigid joints displaying face gaps of no more than 1mm.
- Hot dip galvanising: Frames and ancillary profiles (steel attachments, coupling members and ancillaries) shall be positively rustproofed by hot-dip galvanising to BS EN ISO 1461.
- Glazing details: Will accept glazing thickness of between 24 and 26.8mm thick.
- Thermal insulation: Approximately 2.1 W/m<sup>2</sup>K (90% Argon gas filled soft coat low E 24mm sealed double Glazing units) down to minimum 1.8 W/m<sup>2</sup>K (90% krypton gas filled soft coat low E 24mm sealed triple glazing units) combined frame and glass U values.
- Acoustic insulation: Sound insulation of weather stripped windows/doors (approximate values averaged over a frequency range of 100 to 3150Hz) to be 28-30dB reduction (Double Glass) / 35-40dB reduction (with secondary window and 200mm cavity).
- Dual Weatherstripping: External and internal black EPDM self adhesive weather / air seals.
- Ironmongery / accessories: Refer to Steel Window Services for project specifics.
- Finish as delivered: Polyester colour coated to BS 6497 or BS EN 13438 in a standard RAL colour, or:
- Finish as delivered: Hot-dip galvanised to BS EN ISO 1461 ready for, if required, site priming (with Special Metals Primer suitable for galvanised steel surfaces), undercoating / final decorations by others.
- Sightlines (typical) of window range to be no more than:
- Fixed light: 45mm (using extended perimeter fixing legs) / 30mm (using short perimeter fixing legs)
- Opening window: 69mm (using extended perimeter fixing legs) / 54mm (using short perimeter fixing legs)
- Glazing bar: True steel "T" section (not face applied): 45mm - Face applied cosmetic bar: 19mm or 26mm.
- Section size (front to back): 40mm

### **328 IRONMONGERY / ACCESSORIES:**

- Standard provisions: Refer to Steel Window Services.
- Hinged casements shall have rustproofed steel or brass hinges, face mounted and welded, screwed or riveted to the frame. A variety of handles, catches, stays and openers, with locking options, are available in chromed or toned brass, anodised or painted aluminium, and chromed or painted zinc alloy. Double fasteners or concealed multi-point locking systems shall be fitted on ventilators over 1200mm long or 1500mm high.
- Enhanced Security W40-SBD windows to be fitted as standard with:
  - Hinges, either:  
"Magnum" Variable Geometry friction hinges with either "Dog Bolts" on the hinge side or proprietary hinge protector fittings (all concealed when window is in the closed position), or Type 1260 traditional brass face-fix butt hinges with security pin (may be required for larger windows or for conservation reasons).
- Operation: Concealed multi-point locking system driven by a single handle.

### **331 FINISH COATING**

- Type / reference: Polyester powder coating to BS 6497 or BS EN 13438
- Preparation: Following galvanising, windows are chemically cleaned and pre-treated to provide a surface to which powder coating will adhere.
- Covering: Minimum 60 microns on all significant surfaces.
- Colours: Any standard RAL colour reference
- Gloss level: Standard matt (30% +/- 7% gloss level). Optional semi-gloss and full gloss levels available.
- Process: Coating will be undertaken by our specialised polyester powder coat applicator.

## **EXECUTION**

### **710 PROTECTION COMPONENTS**

- General: Do not deliver to site components that cannot be installed immediately, or placed in clean, dry-floored and covered storage.
- Stored components: Stack vertical or near vertical on level bearers, separated with spacers to prevent damage by and to, projecting ironmongery, beads etc. Windows must not be stacked near lime or ashes on site

### **750 BUILDING IN**

- General: Not generally permitted unless indicated on drawings.
- Brace and protect components to prevent distortion and damage during construction of adjacent structure.

### **730 PRIMING / SEALING**

- Timber surfaces inaccessible after installation: Prime or seal as specified before fixing components.

### **760 REPLACEMENT WINDOW INSTALLATION**

- Standard: To BS 8213-4.

### **765 WINDOW INSTALLATION GENERALLY**

- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction: Minimum: 2mm / Maximum: 8mm
- Distortion: Install windows without twist or diagonal racking.
- Operatives: When contracted to install, this to be carried out by Steel Window Service directly employed (not subcontracted) 100% CSCS card registered installers qualified to NVQ2/equivalent standard.
- Insurance: Minimum level of Public / Employers and Products Liability Insurance: £ 10,000,000.00.

### **780 FIXING OF WOOD FRAMES (timber subframes where required)**

- Standard: As section Z20.
- Fasteners: Windows shall be supplied with rustproofed screws, plugs, and/or lugs to suit specified openings.

- Spacing: When not pre-drilled or specified otherwise, position fasteners not less than 150mm from ends of each jamb, adjacent to each hanging point of opening lights and at maximum 450mm centres.
- Sealing: When contracted to install, Steel Window Services shall apply appropriate external perimeter sealants.

### **781 FIXING OF STEEL FRAMES**

- Standard: As section Z20.
- Fasteners: Windows shall be supplied with rustproofed screws, plugs, and/or lugs to suit specified openings.
- Spacing: When not pre-drilled or specified otherwise, position fasteners not less than 50mm and nor more than 190mm from ends of each jamb, adjacent to each hanging point of opening lights and at maximum 900mm centres.
- Composite assemblies: Shall be delivered in separate units to be coupled together on site.
- Sealing: When contracted to install, Steel Window Services shall apply appropriate external perimeter sealants.

### **800 BACKFILLING OF STEEL FRAME SECTIONS**

- Windows fixed direct into openings: When required for weathering - after fixing, fill back of steel frame With waterproof cement fillet, or use an impregnated expanding sealing tape.

### **810 SEALANT JOINTS**

- Sealant:
- Manufacturer: Selected to suit structural surround type.
- Product reference: Selected to suit structural surround type.
- Colours: White, Portland Stone, Buff, Brick Red, Brown, Grey, Mid Grey, Anthracite, Black, Translucent Or Magnolia, optional colours or RAL colour matched (consult Steel Window Services)
- Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

### **820 IRONMONGERY**

- Fixing: Assemble and fix carefully and accurately using fasteners with matching finish supplied by Ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
- Checking / adjusting / lubricating: Carry out at completion and ensure correct functioning. Window Air Water Wind Exposure Type permeability tightness resistance category

## **L 40 GENERAL GLAZING**

### **150 WORKMANSHIP GENERALLY**

- Glazing:
- Generally: To BS 8000-7 / BS 6262.
- Integrity: Wind and watertight under all conditions with full allowance for deflections and other movements
- Panes / sheets to be within +/- 2mm of specified dimensions.
- Materials:
- Avoid contact between glazing panes / units and alkaline materials such as cement and lime.
- Keep materials dry until fixed. Keep insulating glass units and plastics glazing sheets protected from the sun and away from heat sources.
- Ensure that glass / plastics, surround materials, sealers, primers and paints / clear finishes to be used together are compatible. Comply with glazing and sealant manufacturer's recommendations.

### **152 PREPARATION:**

- Clean surrounds, rebates, grooves and beads (where fitted) and prepare as specified before installing glazing.

### **155 GLASS GENERALLY:**

- Glass:
- Standards: Generally to BS 952 (Glass for glazing) and the relevant part(s) of:

- BS EN 572 for basic soda lime silicate glass.
- BS EN 1096 for coated glass.
- BS EN 1748-1 for borosilicate glass.
- BS EN 1748-2 for ceramic glass.
- BS EN 1863 for heat strengthened soda lime silicate glass.
- BS EN 12150 for thermally toughened soda lime silicate safety glass.
- BS EN 12337 for chemically strengthened soda lime silicate glass.
- BS EN 13024 for thermally toughened borosilicate safety glass.
- BS EN ISO 12543 for laminated glass and laminated safety glass.
- Quality: Panes / sheets to be clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects. Edges generally undamaged. Shells and chips not more than 2mm deep and extending not more than 5mm across the surface are acceptable if ground or polished out.
- Dimensional tolerances: Panes / sheets to be accurately sized.
- Material compatibility: Glass/ plastics, surround materials, sealers primers and paints / clear finishes to Be compatible.

### **160 LINEAR PATTERNED/WIRED GLASS (if applicable)**

- Alignment: Vertical / Horizontal as appropriate and pattern matched across adjacent panes in close proximity.

### **370 BEAD FIXED INSULATING GLASS UNITS**

- Pane material: Hermetically sealed double or triple insulating glass units supplied by Steel Window Services with a thickness of between 24 and 26.8mm. In the absence of specification, assume high-end insulation by way of:
  - Outer pane: 4mm clear float or where required - toughened or obscure or obscure toughened glass.
  - Inner pane: 4mm clear float or toughened safety glass (where required) with a 0.03 En Low E coating to face 3.
- Spacer: 16mm dual seal spacer bar with a fill of 90% Argon gas / 10% air.
- Insulating properties of sealed unit: Centre pane U value of glass ( $U_g$ ) of 1.1 W/m<sup>2</sup>K.
- Resultant combined frame/glass U value ( $U_w$ ):
  - 2.1 W/m<sup>2</sup>K\* based on European norm standard commercial reference window.
  - \* Other glass combinations can bring this figure down to minimum of 1.8 W/m<sup>2</sup>K
  - 2.2 W/m<sup>2</sup>K\* based on GGF (Glass and Glazing Federation) domestic norm standard reference window.
  - \* Other glass combinations can bring this figure down to minimum of 2.1 W/m<sup>2</sup>K
- Surround/ bead:
  - Aluminium extruded beads with a flush profile and butt-joint corner detailing.
  - Preparation: Polyester powder coat if windows not supplied plain galvanised finish.
  - Bead location: Outside or inside (W40-SBD Enhanced Security windows must have internal beads only)
  - Bead fixing: Beads clip into under-glass mill-finished aluminium extruded clip carrier section (which is secured to the steel frame by rust-proofed screw or rivet fixing). No visible fixings when glazed.
  - Glazing compound: Silicone mastic sealant (optional black or white glazing gasket may be fitted on glazing bead side in lieu of tape and silicone glass capping).
  - Silicone mastic colour: to be a standard available colour sympathetic to frame colour.
  - Optional: Premium RAL colour matched silicone mastic.
  - Optional: Bead side glazed using black or white wedge gasket in lieu of silicone glass capping.
- Glazing installation:
  - Glass: Located centrally in surround using setting and location blocks and distance pieces.
  - Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
  - Glazing leg seal: 10x3mm (compressed) glazing tape capped with silicone mastic sealant.
  - Beads side seal: 10x3mm (compressed) glazing tape capped with silicone mastic sealant.
  - Visible edge of glazing capping: Finish internally and externally with a smooth chamfer.
  - W40-SBD Enhanced Security windows glass selection: The local police liaison officer must be consulted during the design process as the glass choice must be suitable for the local environment and the specific application. They will be responsible for approval of the finished installation and therefore it is imperative to agree the glass specification early . There is no "hard and fast" ruling over the glass types to be used in SBD windows, but invariably there will be a requirement for toughened or laminated

security glass. The maximum glass thickness allowable in W40 of 26.8mm will allow for the most onerous of glass specifications likely to be requested - comprising of 6.8mm laminated safety glass one side and 4mm toughened safety glass the other. However, some SBD installations will only require 4mm toughened safety glass one side and normal float glass the other.

- W40-FR Fire-rated windows: Please refer to Steel Window Services and W40-FR data sheet for glass selection / specific glazing method and materials ensure compliance with required fire rating.

## **M60 PAINTING / CLEAR FINISHES**

### **Z 20 FIXINGS / ADHESIVES**

#### **310 FASTENERS GENERALLY**

- Materials: To have:
- Bimetallic corrosion resistance appropriate to items being fixed.
- Atmospheric corrosion resistance appropriate to fixing location.
- Appearance: Submit samples on request.

#### **320 PACKINGS**

- Materials: Non-compressible, non-corrodible, rot proof.
- Area of packings: Sufficient to transfer loads.

#### **340 MASONRY FIXINGS**

- Light Duty: Plugs and screws
- Heavy Duty: Expansion anchors or chemical anchors

#### **350 PLUGS**

- Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

#### **360 ANCHORS**

- Types:
- Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
- Adhesive or chemical: For use in substrate where expansion of anchor would fracture substrate.  
For use in irregular substrate where expansion anchors cannot transfer load on anchor.
- Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

#### **370 WOOD SCREWS**

- Type: Wood screws (traditional pattern).
- Standard: To BS 1210.
- Pattern: Parallel, fully threaded shank or twin thread types.
- Washers and screw cups: Where required are to be of same material as screw.

#### **380 MISCELLANEOUS SCREWS**

- Type: To suit the fixing requirement of the components and substrate.
- Pattern: Self-tapping, metallic drive screws, or power driven screws.
- Washers and screw cups: Where required to be of same material as screw.

## **EXECUTION**

#### **610 FIXING GENERALLY**

- Integrity of supported components: Select types, sizes, quantities and spacing of fixings, fasteners and packings to retain supported components without distortion or loss of support.
- Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
- Appearance: Fixings to be in straight lines at regular centres.

#### **620 FIXING THROUGH FINISHES**

- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

### **630 FIXING PACKINGS**

- Function: To take up tolerances and prevent distortion of materials and components.
- Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
- Locations: Not within zones to be filled with sealant.

### **660 SCREW FIXING**

- Finished level of countersunk screw heads:
- Exposed: Flush with timber surface.
- Concealed (holes filled or stopped): Sink minimum 2 mm below surface.