

SURVEY AND INSTALLATION GUIDELINES FOR ID30 DOORS

Scope

Information covered is designed to emphasize the good practices required for successful surveying and installation of the door sets and screens. It is not intended to replace any British or European standards, but to supplement them.

It is known that faulty or poor survey and installation techniques can lead to problems. It is essential that the recommendations of Code of Practice are followed if doors are to be installed successfully.

The surveyor and installer should be aware of the aluminium material being used and should closely follow the manufacturer's recommendations for survey and installation.

Compliance with any Code of Practice does not of itself confer immunity from the need to comply with any other relevant legal or statutory requirements. This includes Building Regulations if applicable.

Surveying for Replacement Windows and Door Sets

General

Good surveying is the basis of ensuring a quality installation. Surveyors shall be fully trained in window and door set installation techniques, and in the requirements of surveying for the particular window or door system being used.

The surveyor or other competent person should carry out a Risk Assessment for the installation process and the suitability of the window design. Information on the safety of windows in use and during cleaning is given in BS 8213-1. The requirements of CONDAMI and COSHH2 regulations should also be considered.

- Construction Design and Management Regulation
- Control of Substances Hazardous to Health

When sub-contracting, the surveyor, as part of the risk assessment, should ensure that the main contractor will provide a safe working environment including safe access.

When a load bearing situation is suspected or confirmed, then consultation with a structural engineer should be made to verify suitability of the system. In all cases the manufacturer's instructions must be followed as closely as possible.

Suitability of the Aperture

The surveyor shall check for any apparent defects and deficiencies around the structural opening. If any defects are found then the customer shall be notified, and agreement reached as to who is responsible for rectifying these defects prior to the new windows or door sets being installed.

Services in the Aperture

The presence of any electrical or specialist items such as television aerials and telephone wires in the aperture shall be noted. Wherever possible such services shall be routed around and not through the outer frame of the window or door. When this is not possible, a solution shall be agreed with the customer which does not compromise the performance of the product.

The presence of any curtain tracks in the aperture shall be noted. This is particularly important for inward opening windows and net curtains. These could cause problems either during installation, or interfere with the function of the window and door set after installation. Action to prevent any problems shall be agreed with the customer prior to the installation.

Design

The Surveyor shall determine the design load for the application and then satisfy himself that the doors and/or screens are suitable for that exposure.

Lintels

The Surveyor shall take reasonable steps to check that there is a lintel or other means of supporting the structure above the window or door set. Where no such support exists and the load is carried on the existing window or door set, then alternative means of providing this support shall be provided.

Building Regulations

Refer to Safety Glazing of the Building Regulations and do not make compliance any worse with respect to all other Parts of the Regulations. For more information see www.fensa.org.uk or contact local authority building control.

For new build installations, full compliance with Building Regulations may be required.

Coupled/Combination Frames

Where windows and/or door sets are to be coupled, the Surveyor shall determine the method to be used taking into account wind any loads, visual appearance and position of the coupling.

Opening Type and Direction

The Surveyor must confirm with the customer whether the door is to be opening direction and the handing. On any doors, it is strongly recommended that a restriction device is fitted to the door or a physical door stop is positioned to help avoid damage caused by sudden careless opening or pedestrians over rotating the door. Any external physical door stops should take into account pedestrian free movement outside and not restrict access in accordance with Building Regulations.

The protrusion of doors opening into the path of pedestrians should also be considered.

On door sets with side panels, it may be necessary to consider "mullion bounce" and stiffen the mullion to limit this. Any such stiffening shall be clearly specified.

Brickwork Removal

Where bricks are to be removed to install products, the method of any cavity closing shall be specified. The method of making good shall be agreed with the customer.

Note. It is advisable to consult local authority building control to ensure any local interpretations, for instance, with respect to cavity closing, are taken into account.

Special Glasses

The Surveyor shall specify or confirm the position, style and orientation of any glass pattern or decoration including leading or Georgian Bar inserts and the need for any alignment.

Measurement

Three measurements of width and height shall be taken and the squareness of the aperture determined by taking diagonal measurements. See Figure 1. The smallest measurement of width and of height is used to determine manufacturing sizes.

Taking the measurements across the aperture corners will also check its squareness, along with the use of a spirit level as illustrated in Figure 1.

The difference between any internal and external reveal sizes shall be determined and checks made to ensure that the operation of any opening door leaf will not be impeded by plaster, render or tiles etc.

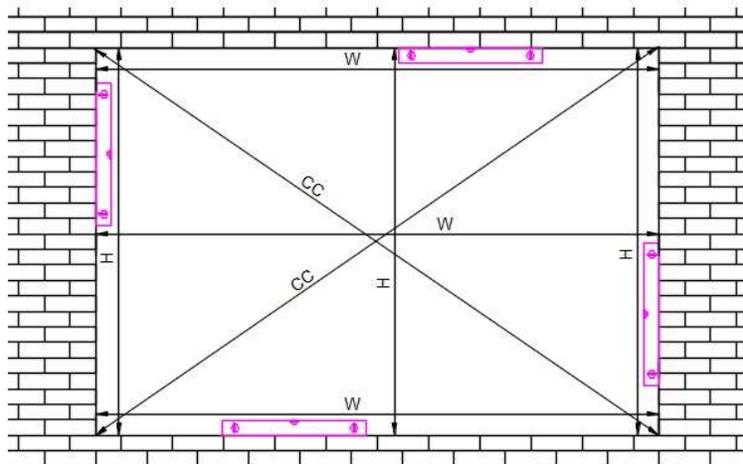


Figure 1. Measurement of flat windows

Manufacturing Sizes

Materials expansion and contraction is to be expected due to temperature fluctuations and this must be taken into consideration.

Recommended deductions from structural opening sizes (mm). The surveyor shall determine the manufacturing sizes of the doors or screens after the survey to take into account any building features or anomalies.

Installation Techniques

The Surveyor shall determine the optimum installation techniques.

The Surveyor is responsible for specifying the nature, location and quantity of the fixings taking into account the manufacturer's instructions.

Removal of Existing Windows and Door Sets

General

The installation team should ensure that all relevant documentation, e.g. drawings, survey sheets, special instructions, etc. is available and understood. Care should be taken to ensure that the delivery vehicle has been loaded correctly with the relevant products and equipment. Prior to the commencement of work the sizes, type, and condition of all door sets and screens should be checked both against the survey sizes and types and against the actual aperture sizes.

At the request of the installer, prior to the commencement of work the customer should be given adequate notice to remove any furniture, fixings or fittings that may otherwise be damaged during the installation.

The installer is responsible for both internal and external protection of the property during the installation work.

Care should be taken to avoid soiling of, or damage to floor coverings and needless damage to decorations. Damage will inevitably be caused to the reveals adjacent to the installation and reasonable care must be taken to keep this to a minimum.

The installer should plan to install and seal the new door sets and/or screens on the same day that the existing windows or door sets are removed to maintain the function of the building. When this is not practical, for example, on large contracts, an alternative arrangement should be agreed in advance between installer and client.

The existing door sets should be removed with care to avoid unnecessary damage to the building structure and its finishings, and without permitting any subsidence of the superstructure during or after the installation procedure.

Any electrical or specialist items, such as television aerials, or telephone wires, shall be re-routed around, and not through the frame of the window. Where this is not feasible, then alternatives shall be agreed with the customer. Appropriate trades should be employed where necessary.

Safety

All site practices shall be carried out in a safe manner. Work procedures shall comply with all current health and safety at work legislation. For more information see the Health and Safety Executive web site www.hse.gov.uk. Safety precautions shall be observed at all times. All new operatives shall be formally trained in the safe use of all tools, and installation companies shall ensure that their operatives have the correct equipment, including personal protective equipment. Full training and assessment records of all operatives must be kept in an acceptable manner.

Important safety precautions include:

When handling broken glass, all operatives shall wear safety goggles, thick gloves and safety helmets.

All electricity powered tools MUST work either on 110 volts mains power or be battery operated (see BS 7671:2001 Section 604).

A safe working platform to give safe access to the structural openings is essential. (See HSE Construction Information Sheet 49).

When operating a grinding disc, the following safety precautions shall be observed:

- Heavy gloves, face visors, helmets and chest protection shall be worn, as discs can easily shatter into lethal projectiles.
- Ensure clear access, and that sparks cannot ignite combustible material such as dustsheets.
- All non-essential personnel shall be moved a safe distance away.

Special care should be taken to avoid contact with the asbestos. When the presence of asbestos is suspected, then contact MUST be made with the local Environmental Health Officer.

The components of old door sets shall be recycled wherever possible. They shall always be stored and disposed of safely.

Installation

General

For correct door or screen fixing, each frame member should be fixed to the substrate or to an adjacent frame to resist all likely imposed loads which will cause the frame to deflect. These loads may be due to: operating loads, gravity or accidental impact.

Fixing methods are affected by: the presence or absence of a wall cavity: the nature and condition of any cavity: the relative position of the frame and cavity: the position of the plaster line and the need to minimise disturbance and damage to interior decorations: the design of the reveal: any requirements for fire resistance.

Fixings

There are two principal methods of fixing available, which may be used separately or in combination. These are, through frame fixings and lug fixings. If lug fixings are used then they shall be of a suitable material to resist corrosion.

Screws shall be sized to penetrate at least 25mm into plugged holes in brick, block, or masonry, unless equivalent demonstrable provision can be made by other means, for example in accordance with an appropriate structural code. Connections to steelwork up to 2mm thick such as folded sheet lintels should be made with appropriate thread cutting screws, to steelwork over 2mm thick into pre-tapped holes with machine screws of minimum 5mm diameter, alternatively with power-driven hardened self-drilling screws.

Fixing Distances

The Surveyor is responsible for specifying the nature, location and quantity of the fixings.

Generally, all four sides of the frame shall be secured as follows:

- Corner fixings shall be between 150mm and 250mm from the external corner.
- Intermediate fixings shall be at centres no greater than 600mm.
- There shall be a minimum of two fixings on each jamb.
- Windows over 1800mm wide, centre head and sub-sill fixing shall be provided.

Finishings

Finishings, such as trims, are generally used to neaten the interface between door or screen and the substrate.

Coupled Assemblies

Coupled assemblies are usually delivered to site as separate units, to ease handling and minimise damage. When building up components into the required assembly, care should be taken to keep coupling joints equal, and frames both aligned and plumb. Ensure that perimeter fixings are made close to coupling bar ends.

Replacement Doors and Screens

Door sets and screens shall be installed plumb and square within the aperture, without twist, racking or distortion of any member in accordance with the manufacturer's recommended tolerances to operate correctly after installation and in accordance with the surveyor's instructions.

Frame Position

Replacement door sets are generally positioned to minimise the amount of making good. An important point to consider is that the correct movement gap has been provided.

Installation Packers

Appropriately sized installation packers shall be used adjacent to fixing positions to prevent outer frame distortion during installation. Installation packers shall be resistance to compression, rot and corrosion. They shall span the full depth of the outer frame. The fixings shall be tightened so that the frame is held securely against the packers. Over tightening may lead to distortion and shall be avoided.

When lugs are used, they shall be packed off the substrate to prevent distortion. Where enhanced security is required, additional packers shall be used adjacent to hinge and locking points.

Finishing Off and Making Good

Internal reveals shall be made good as agreed, ready for the customer to redecorate if necessary.

Any materials, such as trims or sealant, should not be applied on top of existing wall coverings or protective tapes as any subsequent removal of that wall covering or tape could also remove the trim or sealant.

Any protective tapes should be removed as soon as practicable as ageing of tapes can cause difficulties in removal. Refer to manufacturer's guidance.

Where the replacement product has a smaller front to back dimension than the original, then the final finish to the customers satisfaction must be as agreed at the initial survey stage..

The method of, and responsibility for, repair to any render must be as agreed with the customer.

New Build

The position of the door within the reveal is normally agreed at the time of original design. This may provide a means of locating and fixing the door or screen.

Glazing

General

All glazing shall comply with the requirements of BS 6262 and BS 8000 Part 7.

All glass shall be examined for damage prior to installation. Defective glass shall not be used.

Glazing Methods

Many windows and doors are delivered ready glazed. Alternatively, they may be supplied with glass units and preformed glazing gaskets to be applied on site in accordance with the manufacturer's instructions.

Some may require butyl based, polyethylene, PVC or acrylic glazing tapes. When used externally, these shall be capped with silicone sealant.

Others will use non-setting compounds, gun-grade solvent release types, one-or two-part curing sealants or two part rubberizing compounds.

In all cases manufacturer's instructions shall be followed. Insulating glass units, setting and location blocks (see figure 2), distance pieces, frame to glass and bead to glass gaskets, bead to frame airseals, corner sealing blocks, beads and bead end caps, bedding and capping sealants shall be installed in accordance with BS 8000-7:1990.

Sealing

Sealing around the framework and making good with plaster lines etc shall be done by the installer to finish it to the customer's requirements or project specification.

One-part sealants rely upon atmospheric moisture to initiate curing, and although modern formulations cure quickly, curing proceeds from the exposed surface inwards, therefore deep filling should be avoided. Also, the sealant shall be applied against a firm backing so that it is forced against the sides of the joint during application.

Setting and Packer Position

Setting Corner Packer – Use divert weight and to adjust clearance gap.

Spacer Corner Packer – Use to keep glass and frame in position (slightly loose).

Flat Packer 1mm to 3mm – Additional packer.

Depending on size of the glass and security requirement, more packers should be used in the centre.

Generally the dead weight is supported on the hinge side when it is opened, there is nothing on the lock side to support the weight, and without the procedure of toeing and heeling the door or window will 'drop' on the handle side, sooner or later. To stop dropping, the glass itself has to be braced diagonally corner to corner by the insertion of plastic packers slipped in the gap between the glass and frame. On the hinge side the packers go at the bottom corner, whilst on the lock side, the packers go at the top (opposite) corner.

Final Inspection - Commissioning

After installation a final inspection shall be carried out to ensure that the installation is fully in accordance with requirements, preferably accompanied by the customer.

It is essential that the customer is made aware of the method(s) of operation, locking and unlocking, safety features and fire egress. This should be accompanied with written operating and maintenance instructions, such as those published by trade federations, which must be passed on to the occupier.

In addition, it is good practice to have the customer or customer's designated representative sign off the installation after passing the inspection.

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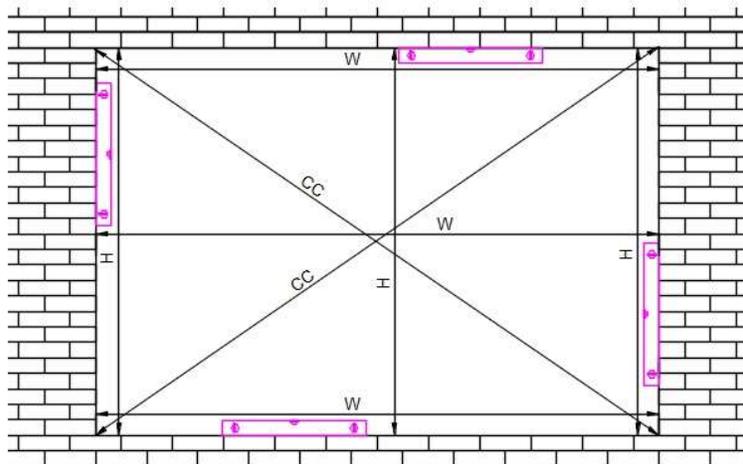


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