

FORZA FD90/FD120 - IRONMONGERY SUITABILITY & INSTALLATION GUIDE

Knuckle Hinges: A variety of hinges have been successfully tested with the door leaves assessed. Hinges may be used, subject to compliance with the specifications below.

Hinge types: Fixed pin, washered butt, ball bearing butt, lift-off type and journal supported hinges may be used.

Number of hinges: 3no.(1&½ pair) per leaf on leaves upto 2200mm high. 4no.(2 pairs) per leaf on leaves upto 2800mm high. 5no. (2&½pair) per leaf on leaves over 2800mm high (FCW only).

Positions: The top first hinge must be positioned 175mm down from the head of the leaf to the top of the hinge. The top second hinge to be positioned 200mm down from the bottom of the first hinge to the top of the second hinge. The bottom hinge positioned 200-250mm up from the foot of the leaf to the bottom of the hinge. All other hinges to be equally spaced between the top and bottom hinges.

Fixings: Steel screws, as recommended by the hinge manufacturer, but in no case smaller than 4mm diameter having thread for the full length, 50mm long for fixing into the door leaf and 32mm long for fixing into the frame.

Hinge blade size: 2.5-3.5mm thick x 100-110 high x 30-36mm width. These dimensions refer to the blade size, ie the part of the hinge that is recessed into the edge of the leaf/frame.

Hinge materials: Steel or Stainless Steel (Aluminium, Nylon or "mazaq" are not permitted). No combustible or thermally softening materials to be included.

Additional protection: All hinge blades must be bedded on minimum 2mm thick non-pressure forming intumescent material. Rising butt, non-cracked butts and spring hinges are not suitable for use on doors approved within the scope of this generic assessment. (Such hinges may be suitable on the basis of an individual and project specific fire engineering evaluation. Contact Forza Technical)

Mortice Latches /Locks

Where mortice latches or locks are fitted, they should be centred at 1000mm (+/-200mm) above the bottom of the door leaf, and should comply with the following specifications;

Latch/lock type: Mortice latches, tubular mortice latches, sashlocks, deadlocks.

Maximum dimensions: (FCH90/120 core)

- Forend plate: 165mm long x 25mm x 3mm thick.
- Latch body: 20 mm thick x 165 mm high x 100mm wide.
- Strike plate: 165mm long x 25mm wide x 3mm thick.

(FCW90/120 core)

- Forend plate: 235mm long x 22mm x 3mm thick.
- Latch body: 18 mm thick
- Strike plate: 165mm long x 22mm wide x 3mm thick.

(FCM90 core)

- Forend plate: 235mm long x 22mm x 3mm thick.
- Latch body: 18 mm thick x 170mm high
- Strike plate: 200mm long x 20mm wide x 3mm thick.

Additional protection

Materials: The latch body, forend, strike plate and latch keep must be encased and bedded on minimum 1mm thick non-pressure forming intumescent material.

Latches must have no essential part of their structure made from polymeric or other low melting point (<800c) materials, and should not contain any flammable materials. Over-morticing is to be avoided; mortices should be as tight as possible to the latch. If gaps around the case exceed 2mm, then these must be made good with intumescent mastic or sheet material. Holes for spindles or cylinders should be kept as small as is compatible with the operation of the hardware.

Where glazing apertures are also incorporated, and are positioned such that locks/latches are included in the margin between the aperture and door edge, care must be taken to ensure that the effective door 'stile' is not weakened by the mortice. It is a condition of this certification that, except where tubular latches are employed, the margin must be at least 75mm wider than the lock/latch mortice. If the mortice latch/lock is fitted in line with a 'rail' between two apertures, no part of the lock mortice shall be closer than 50mm to the edge of any aperture.

Door Closers

Where required by regulatory guidance or specific fire strategy each hinged door leaf must be fitted with a self-closing device unless it is normally kept locked shut and labelled as such with an appropriate sign which complies with BS5499-10:2014.

It is essential that all closers fulfil the requirements of BS EN 1154: 1997 and are of the correct power rating for the width and weight of the door assemblies (minimum power size 3). They must be fitted according to the manufacturer's instructions and be adjusted so that they are capable of fully closing the door leaf, against any friction imposed by the latch (and smoke seals if fitted) from any position of opening.

A variety of closers may be used, subject to compliance with the specifications below:

Face Fixed: Faced fixed overhead door closers (and accessories such as soffit brackets) that have been tested, assessed or otherwise approved by the manufacturer for use on unlatched FD90/FD120 cellulose door leaves in timber frames (& for FCW mineral cores e.g Dorma TS83V or Briton 2003SES) may be used. Any accessory that is located within the door reveal must have appropriate test or assessment evidence. In addition, where areas of uninsulated glazing are adjacent to the closer, the selected closer type must have been tested on the unexposed face of an uninsulated steel door, or a fully glazed door fitted with uninsulating glass, to demonstrate that the closer does not emit flammable fluids onto the glass face that would otherwise cause integrity failure before the required period of fire resistance.

Concealed Overhead Closers: There are two types of concealed overhead closers suitable for inclusion in FCH90 & FSM90 door assemblies and one for FCW90/120 door assemblies. These are 'slide arm' type closers with the closer morticed into the head of the leaf and a single arm and roller acting in a slide channel morticed into the frame head. The closer is installed in a relatively deep mortice in the door head with the slide channel in a mortice in the frame head.

FCH90 & FSM90: Dorma ITS96 (power size 2-4 model) & GEZE Boxer (power size 3-6 model).
FCW90/120: Hoppe UK. AR7883 (power size minimum 3)

These closers having been tested by their manufacturers and subject to the limitations below may be used.

- Inclusion of the intumescent gasket kit as tested and supplied by the Manufacturer, encasing the closer body & closer arm slide body.
- When using in doors with vision panels the top margin between the leaf head and the aperture must be at least 175mm.
- A minimum of 15mm width of intumescent must be residual alongside the arm recess in the head of the frame.

All closers fitted in accordance with the closer manufacturer's instructions must be adjusted so that they are capable of fully closing the door leaf, against any friction imposed by the latch and any smoke or acoustic seals if fitted, from any position of opening.

Bolts

All surface mounted and flush face fixed bolts must be steel or stainless steel.

- Maximum size of flush bolt 250mm long x 20mm wide x 25mm deep.
- The body of the Bolt to be bedded on minimum 1mm thick non-pressure forming intumescent material.
- Flush bolts edge fixed (FCW90/120 & FCM90 only) shall be positioned centrally in the leaf with a minimum of 10mm width of intumescent strip running past either side the body of the bolt.
- Face fixed flush bolts and surface mounted barrel bolts shall be positioned so that there is a minimum of 50mm between the bolt and the door edge.
- Surface mounted barrel bolts shall not exceed 400mm in length but there is no limitation on their width.
- All bolts to be fitted using steel full threaded screws at least 25mm long.

Non-Essential Hardware Items

Push plate, kick plates, etc: Plastic, pvc or metal plates may be surface-mounted to the door assemblies, but if more than 800mm in length by nominally 200mm wide, they must be attached in a way that would prevent them distorting the door leaf, e.g. glued with thermally softening adhesive or screwed with short aluminium screws and fitted in such a way so they will not be prevented from falling away by being trapped under door stops, glazing beads or handle escutcheons etc.

Pull handles: These may be surface fixed to the door assemblies, provided that the fixing points are no greater than 800mm apart. Pull handles that are fixed through the leaf should use clearance holes as close fitting as possible to the non-combustible bolt and be lined with a 1mm non-pressure intumescent material. (Through fixing on FCH90/120 not permitted)

Dropseals: Fully morticed automatic drop threshold seals may be fitted provided that the body of the drop seal does not exceed 35mm high x 15mm wide (excluding fixing flanges). The body of the automatic drop seal must be in aluminium or steel, encased in 1mm non-pressure forming intumescent and morticed central to the thickness of the door core.