

Falcon Panel Products

STREDOR®

Installation of CE Marked Doorset System

Stredor E30 FED

Stredor EI30 FED

Stredor EI30Sa FED



1. Introduction



This manual will cover the installation of CE Marked, fire rated doorsets that uses the Falcon Panel Products Stredor system.

Always follow the manufacturer's installation instructions. This document is written to compliment general advice from manufacturer's but should not be used in isolation or as a substitute for manufacturer's installation instructions.

Whilst every effort has been made to ensure the accuracy of the advice given, Falcon Panel Products cannot accept liability for loss or damage arising from the use of information providing in the document.

If you are in any doubt of the quality of the installation of a performance door set, please contact the Responsible Person. If concerns are not dealt with by the Responsible Person, please contact the manufacturer, the systems house, the notified body or the HSE.

Doorsets are not freestanding products and they will not provide for any design performance until they have been competently installed into a suitable structure. Installation is as vital to saving lives as the specification of the doorset itself. If the installed doorset is poorly installed or difficult to operate, it will not provide the required performance, and could lead to users of a building disabling elements of the doorset on the basis of convenience, with consequential safety risks, for example by wedging the doors in an open position. A badly installed doorset can also risk property insurance, may invalidate the expected performance and certification provided with the doorset, and could become a legal issue for the Responsible Person in the event of a fire.

Rules and Regulations governing installation

It is vital that performance doorsets are installed by competent tradesmen and it is strongly recommended that the installer is a member of a recognised quality assurance scheme. Installers should be familiar with the content of BS 8214: 2008 'Code of practice for fire door assemblies'.

The Building Regulations for Fire safety Approved Document B states –

'Recommendations for the specification, design, construction, installation and maintenance of fire doorsets constructed with non-metallic door leaves are given in BS 8214.

Guidance on timber fire resisting doorsets, in relation to the new European test standard, may be found in Timber Fire Resisting Doorsets: Maintaining Performance Under the New European Test Standard published by TRADA.'

The Regulatory Reform (fire safety) Order 2005 (RRO) requires that all 'non-dwelling' buildings are subject to regular and ongoing fire risk assessments, in which fire doors should be inspected and maintained. The order also designates a Responsible Person (RP) for a building and makes them responsible for the fire risk assessment. Failure to do so may make the Responsible Person liable for any failures in fire safety.

Regulations/Documents that relate to fire doors in England and Wales include –

Approved Document B – Fire Safety

Approved Document E – Resistance to Sound

Approved Document M – Access and use of buildings

Regulation 7 – Materials and Workmanship

Regulation 38 – requires the handover of 'as built' fire safety information to the Responsible Person.

With reference to this specific CE Marked doorset system, the installation should be carried out in accordance with the following extended applicable documents (EXAPs).

- [WF428387](#) Stredor 44 - E30 Fire EXAP
- [WF428388](#) Stredor 44 - EI30 Fire EXAP
- [WF428364](#) Stredor 44 - EI30 Smoke EXAP

Third-party certification for the installation of fire doors

Third-party certified installers undergo training and are subject to regular audits to ensure continued quality. A third-party certified installer can only install fire doors using products and techniques within their approved system. This means that all elements of their installations have been tested or allowed through expert assessment and certified by a UKAS accredited body.

Some third-party certification installations schemes are shown below, although others are available.

- **Q Mark Fire Door Installation**
- **FIRAS**
- **IFCC**

Labelling for CE Marked Doorsets

The standards require the manufacturer to provide sufficient information to ensure the traceability of the product (e.g. by means of product codes) giving the link between the product, the manufacturer and the production. This information shall either be contained on a product label or detailed in accompanying documents or in the manufacturer's published technical specifications.

Relevant designations of characteristics as well as information about intended use, handling, installation, maintenance and care shall either be contained on a product label or detailed in accompanying documents or in the manufacturer's published technical specification(s).

It should be noted that where a performance characteristic is not a requirement under the applicable local UK Building Regulations, the manufacturer has the option of making a "no performance determined (npd)" declaration against certain performance characteristics as indicated in the individual standards.

Labelling for third party certification

CE Marked doorsets may also be subject to third party certification and should be identified as such. These doors be labelled or marked appropriately to enable quick and easy identification of the fire and security rating. Doors can also be labelled to assist with distribution on site or to assist with manufacturing and chain of custody requirements.

Doorsets manufactured under third party certification need to be labelled as required by the scheme. The technique of labelling varies across the schemes.

- **Q Mark Fire – Plugs**
- **Q Mark Security – Silver labels**

Labels for third party certified doorset will generally be obtained from the certification body as part of the membership scheme.

2. Preparation



Delivery and Storage of Door sets

Delivery of doorsets should be at the latest possible moment in a build schedule.

Doorsets are affected by dramatic changes in humidity and temperature, as this causes timber to swell or contract, thereby changing the crucial gaps that have been allowed during manufacture and possibly jeopardizing the stability of the product. For this reason, it is also vital that doorsets are not stored in damp or exposed areas for any length of time, and that they are not installed before wet trades have completed their works and sufficient time has been allowed for drying.

Delivery

Doorsets are heavy, with a standard FD30 single door leaf weighing around 50kg alone. Ensure that there are sufficient offloading and distribution facilities available, and that any persons handling the door components are suitably trained in manual handling.

Doors should be lifted evenly and securely to avoid any bending or damage to the components or surrounding area.

Any protective packing should be left on the doors for as long as possible.

Check the doors for any damage, defect or incorrect specification on delivery, and mark this on the delivery note.

Storage

Store in a dry, ventilated area.

Do not store in any area that is damp or exposed to weather, near standing water. Do not store in direct sunlight as ultra violet light can cause discolouration to timber products.

Store on the supplied pallet/bearers, or on at least 4 equal size flat bearers on a flat surface.

Protect doorsets from dirt and damage from other trades in necessary, but do not restrict the air flow.

Ensure that any doorsets with projecting hardware or threshold have adequate spacers to separate them in the stack.

Internal doors should be conditioned slowly to the temperature and humidity of the building once operational, this applies before and after installation.

Do not store doors in areas that wet trades are still working, and ensure the building has sufficiently dried out before taking delivery.

Storage on site should be kept to a minimum.

Preparing the installation area and the structural opening

Ensure that the work area is clean and clear of debris, and that it is accessible with a doorset.

Check that the structural opening is square and plumb, and has enough tolerance to fit the frame. **The fitting tolerance must be between 4mm and 19mm** to accommodate the sealing material.

Check the labelling to ensure that you are fitting the correct door in the correct opening, and that the performance is suitable for the application.

Check the overall height, width and depth of the frame to ensure that the product supplied is the correct size.

Keep any manufacturer's instructions on hand during the installation.



The supporting construction in which the doorset is mounted must have a fire resistance equal or greater than the fire resistance of the doorset.

The fire resistance of the supporting construction shall have been established separately in a previous test.

The doorset may be hung in a rigid supporting construction (blockwork/brickwork/masonry) or a flexible standard supporting construction (timber/steel stud) meeting the following requirements.

- The doorset has been tested in low density rigid standard supporting construction as specified in EN 1362-1 and can therefore be mounted in the same manner in alternative walls provided the density and the thickness of the wall are equal to or greater than that in which the doorset was tested.
- The doorset has been tested in one of the flexible standard supporting constructions specified in EN 1363-1 and can therefore be mounted in the same manner in a wall or partition which is of the board covered type with studs made from metal or timber.

3. Frame Installation

Preparing the frame

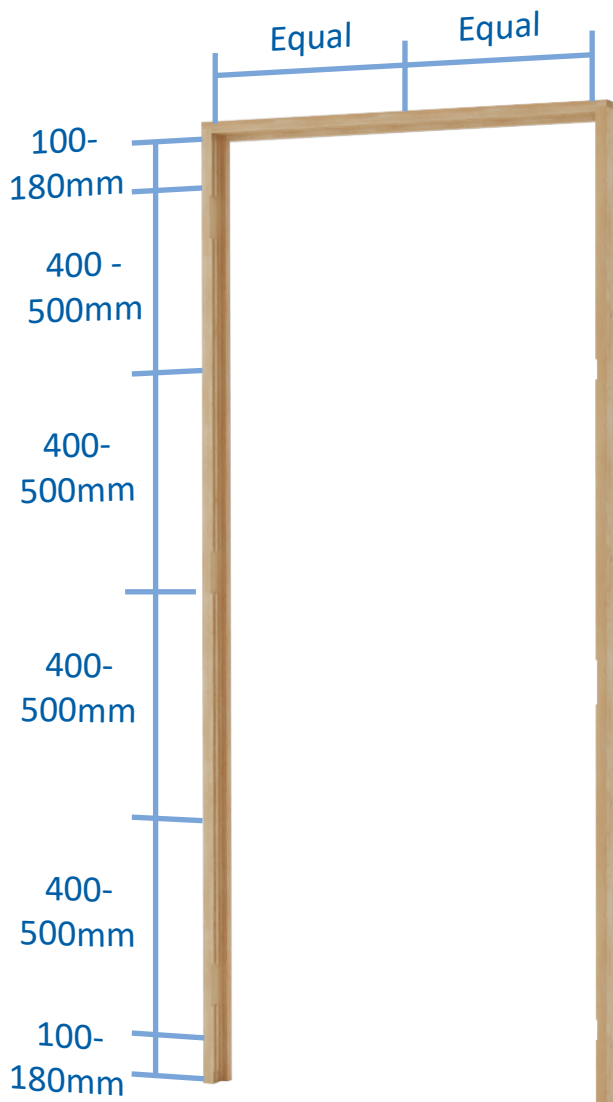
Prior to positioning the frame in the opening, you should prepare the fixing points.

All fixing points must be pilot drilled and counter bored to prevent the timber from splitting. Remove any loose timber fibres from the edges of the hole with a fine grade finishing paper.

If the fixings are to be concealed by an intumescent strip, the counter bored cavity only needs to be as deep as a screw head. If the fixings are not concealed, allow a deeper counter bored cavity so that a timber plug can be fitted over the screw head.



Counter bored pilot hole in intumescent seal groove



On the frame jambs, the top and bottom fixing must be located at 100 - 180mm from the top and bottom corners of the door frame. The intermediate fixings must be located at approximately 400 - 500mm centres.

A fixing to the centre of the frame head is recommended for door leaves over 900mm in width.

There should be a minimum of It is permitted to increase the size and number of fixings but not decrease.

The positioning of installation fixings should be planned to avoid conflicts with hardware, sealing systems and other building elements.

Locating the frame in the opening

Ensure that the frame is central in the width of the opening, with equal tolerances on both sides.

Ensure that the frame is plumb level and square, and that the tolerances are between 4mm and 19mm.

It is possible to vary the position of the door frame within the supporting construction providing that the door frame does not project beyond the supporting construction more than tested.

Fit plastic, timber or non-combustible packers into the tolerance gap, between the back of the frame and the wall. Make sure that you use packers of the correct thickness that fully fill the tolerance gap, but don't distort the frame. This will also prevent the frame from being distorted when the fixings are applied. Packers should be located at the fixing points already pilot drilled in the frame. Refer to the approved fire stopping method for details of packer material required.

Drill pilot holes through the existing frame holes and packers into the wall construction, of a suitable size and depth for the fixing type.

For a rigid supporting wall constructions (blockwork/brickwork/masonry), fit wall plugs to each fixing point in the wall, or consider using other expanding fixings.



Fixing the frame to the opening

Fixings should penetrate the wall construction by a minimum depth of approximately 40mm, so consider the thickness of the frame, the depth of the counter bored cavity and the tolerance gap when selecting a fixing.

The door frame should be fixed to the opening using 80 x 5mm steel screw fixings.



Start at the top of the hinge jamb, and then move on to the top of the lock jamb, moving down each jamb in turn.

Insert screws slowly and do not over tighten as this may cause distortion in the frame. Ensure that the screw heads are tightly against the frame and are below the flush level of the frame within the counter bored cavity.

Once all the fixings are applied, check that the frame is still square and plumb, and is free of distortion. Check that the rebate size of the frame is correct to accommodate the door leaf, with acceptable operating gaps being 2.5mm - 4mm between the leaf and frame all around.

Fitting seals to the frame

Stredor CE Marked fire rated doorsets will be supplied with intumescent seals, that swell in extreme heat to fill and close operating gaps in the event of a fire. These seals are located in the frame, around the sides and top of the door leaf. Stredor CE Marked smoke rated doorsets will be supplied with a rubber fin type seal to close the operating gap when the door is shut in the frame. Intumescent seals will be fitted into a groove that has been prepared the size of the seal. Loose smoke seals will be fitted against the door stop.

A Stredor CE Marked doorset will usually be supplied with seals installed, however the seals may be supplied loose or temporarily removed for the purpose of installation fixing and finishing.



Intumescent and smoke/acoustic seals being fitted to the frame

In this case, the thickness of any finish should be considered when machining intumescent grooves, as the intumescent seal should finish flush with the face of the frame. Some seals may be painted over, check the manufacturer's instructions.

It is important to ensure that the seals extend the full height and width of the perimeter, to enable suitable sealing at the top joints of the frame. Make sure that the seals are fitted tightly into the corners.

TIP!

Squareness can be checked by measuring diagonally across a square or rectangular shape, such as a door leaf or frame. Measure diagonally in both directions, and if both measurements are equal it is square.

Ensure that the seals are undamaged as this may affect the performance of the doorset.

Ensure that the seal grooves are machined cleanly and are free of any deviation, defect or contaminant.

Cut the seal to size before removal of adhesive cover. Peel off the adhesive cover and ensure the adhesive does not contact fingers, or any other contaminants. Place the seal directly into the groove or onto the area required, applying firm, overall pressure to achieve a good bond to the contact area. Do not remove the seal once fitted.

If the surface has been primed, lacquered, or painted, it must be completely dry before the seal is fitted.

If surface materials and/or the self-adhesive tape are too cold the adhesive will harden, severely affecting the bonding process. Store and apply the seals in temperatures above 10°C, and ideally between 20°C - 30°C. The seal will withstand extremes of cold and heat when properly applied.

Frame hardware

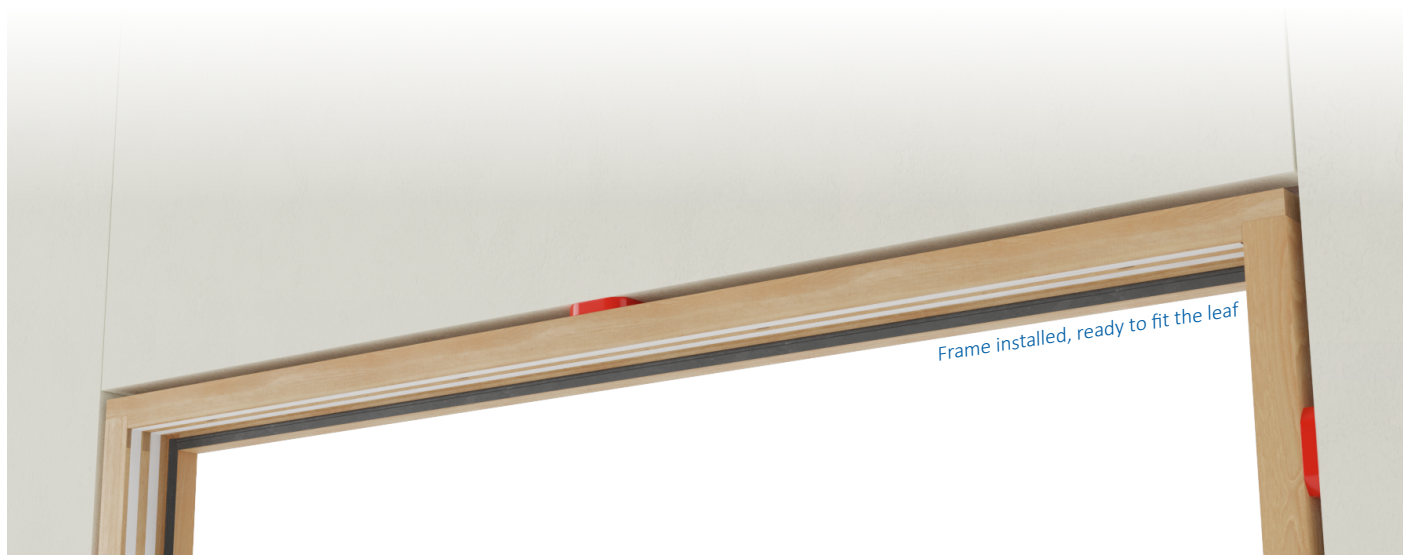
If the doorset has a lock or flush bolt, it will typically need metal keeps fitting to the frame. Stredor CE Marked doorsets will be supplied with all recessing for keeps completed and with keeps or other frame hardware fitted.

Ensure that the recessing is machined cleanly and is free of any deviation, defect or contaminant.

Ensure that the correct and compatible fixing screws have been used.



Multi-point lock style keep fitted to frame



4. Leaf Installation

Drop down threshold seals

Stredor CE Marked fire rated doorsets will be fitted with a drop down threshold seal, otherwise called drop seals, fitted to the bottom edge of the door leaf.

Ensure that the groove for the drop seal is located correctly and is the correct dimension. If additional intumescent protection is required ensure this has been fitted prior to fixing. Check that the drop seal operates correctly once fitted. Always lock the drop seal in the closed position whilst hanging the door leaf and only release when final checks of the door leaf are complete. This will reduce the chance of damaging the drop seal.



Fitting leaf hardware

Leaf hardware for a Stredor CE Marked doorsets will be for the most part factory prepared and fitted. Protruding items such as door handles or letter plate security cowls will most likely be fitted on site for ease of transportation and storage. Loose face fixed items such as signage, kick plates and push plates will also often be supplied loose for site fixing.

When fixing hardware, ensure that the fixing used is a compatible size and material, and ensure that pilot holes are drilled to prevent splitting. All screw heads should be flat and not over tightened.

Make sure that there is no damage to hardware components, that all components fit tightly into recessing, and that all screws are fitted where required.



Hanging the leaf

The hinges should be fitted to the leaf first for the purpose of hanging. Fit any required additional intumescent protection prior to the hinges. Fit all hinges into the leaf recesses, drill pilot holes into the leaf through the hinge screw holes, and fix the hinges to the leaf using the supplied fixings. All screw heads should be flat and not over tightened.

Position the leaf at around 90 degrees to the frame, with the hinges in the frame hinge recesses. Use packers or wedges at the bottom of the leaf to hold it at the correct height if required. Take care not to damage the bottom of the leaf or the drop seal.

Fit any required additional intumescent protection prior to the hinges. Drill pilot holes into the frame through the hinge screw holes. Apply two fixings at each hinge point into the frame.

Remove the packers or wedges from under the door leaf, and check that the door swings and closes correctly into the frame, and that the operating gaps around the door are correct. Check that the under cut is correct for the final floor covering.

Apply the final fixings to the frame hinges, and check that all hinge screws are flat and not over tightened.

Release the drop seal and ensure that it is operating correctly, and drops enough to make contact with any threshold or final floor covering. Ensure that any smoke or acoustic seals make a good contact with the door leaf.



Leaf with hinges fitted is lined up with hinge recesses in frame using wedges



Hinges fixed to the frame



Leaf operation tested and gaps checked

5. Finish the Installation

Sealing to structural opening

Sealing the doorset into the structural opening is a vital part of ensuring that the product performs as desired. Guidance for sealing the frame to the structural opening is given in BS 8214: 2008, 'Code of Practise for Fire Door Assemblies', which may be referred to where appropriate. Sealing to the structural opening is otherwise known as 'fire stopping'.

Ensure that the fitting tolerance gap is between 4mm and 19mm. It is not permitted to install the door frame without the tested sealing material between the door frame and the supporting construction.

The following sealing method is as tested and approved for Stredor CE Marked doorsets.

A minimum of 60mm deep infill of Rockwool RWA 45 or Rockwool FLEXI stone based mineral fibre tightly packed and friction fitted between the rear of the frame and structural opening.

The mineral fibre is to be capped with a nominally 10mm deep (minimum) bead of intumescent mastic on both sides of the rockfibre, to finish level with the face of the door frame. The mastic is to be one of the following tested and approved types -

- Mann McGowan - Pyromas A
- Everbuild - Fire Sealant 300



Automatic closing devices

Automatic closing devices, otherwise known as door closers, will generally be the last piece of hardware fitted, after the frame is sealed to the structural opening.

Ensure that any recessing for the door closer is clean and free of defect and is tight to the product.

Ensure that any additional intumescent protection required is fitted before the door closer.

Fixings for door closers will typically be supplied with the product. Drill pilot holes before fixing to prevent any timber splitting.



When fixed to both leaf and frame, the door closer should be adjusted to comply with opening and closing forces as stated in Approved Document M. Check the manufacturer's instructions for details of adjusting the door closer.

Architrave

For fitting tolerance gaps up to 12mm, architrave is not required, but can be applied if desired for aesthetic purposes.

For fitting tolerance gaps between 12mm and 19mm, architraves that are a minimum of 45mm wide and 18mm thick must be fitted, overlapping the gap by a minimum 10mm of the face of the door frame and the wall. The architrave must be pin fixed in position.



6. Inspection and maintenance



Defects or damage to a fire rated doorset may have a severe and detrimental affect on the performance of the doorset in the event of a fire. It is vital that performance doorsets undergo a regular and detailed inspection and maintenance regime following the installation and during the doorsets lifetime to prevent this.

As stated earlier in this document, The Regulatory Reform (fire safety) Order 2005 (RRO) requires that all 'non-dwelling' buildings are subject to regular and ongoing fire risk assessments, in which fire doors should be inspected and maintained. The order also designates a Responsible Person (RP) for a building and makes them responsible for the fire risk assessment. Failure to do so may make the Responsible Person liable for any failures in fire safety.

Inspections should be carried out at least once every six months, and more regularly for doorsets that are newly installed or are in high traffic areas.

Inspections should be carried out by members of a UKAS Accredited scheme. Inspectors have the power to enforce the Fire Safety Order and do prosecute, or even close buildings down when breaches are discovered.

General maintenance should be carried out regularly, and immediately if any defects or damages are found. Maintenance work should be performed by competent operatives, that are registered members of the scheme relevant to the doorset.

Some key points an inspector will check are;

- **Scheme identification still intact and visible.**
- **Any wear and tear, dents, holes or delamination of the door leaf or frame.**
- **Seals, glazing gaskets, and ironmongery (including door closers) all as installed and not damaged.**
- **All elements are operational and easy to use.**

For technical support, training and guidance

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