R30 Fire Door System

Installation Manual Rev 07

See website resources for latest revisions

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PERMITTED INSTALLERS

SOLIDCOR R30 Fire Door System must be fitted and installed by trained and competent personnel from installation companies who are UKAS accredited organisations. This is to ensure fitting and maintenance is carried out how it was fire and security tested and in line with the third-party certification (Internal doors) or UKCA Marking (External doors).

INSTALLATION MANUAL

This is a controlled issue to ensure all registered installers automatically get updates of the latest methods and any revisions. Failure to install to the current manual may result in reduced levels of performance and may invalidate any applicable product guarantee and compliance. If in doubt call Solidcor for your latest version or visit our website under resources.

REMOVAL OF EXISTING DOORSETS

If you are carrying out remedial work and replacing existing doorsets, remove existing doorsets taking great care not to damage the property and surrounding walls, décor or coatings unnecessarily.

STORAGE

SOLIDCOR R30 doorsets must be stored in a dry location prior to installation. Avoid prolonged exposure to moisture before installation as this could affect the performance of the doorset and invalidate the product guarantee.

Do not expose to direct sunlight or heat as this could cause the protective films to bake onto the slab and frame.

Installation Instructions

PRE-INSTALL CHECKS

Before starting the install and removal of any existing doorset, check the new doorset size is correct for the aperture. Also check against the survey sheet that the door design and glazing design is correct, check the orientation of opening and that security glass to the outside (e.g. open in, or open-out). Check the handing of the doorset (LH or RH) is correct.

See below Pre-install check list:

R30 FIRE DOORSET - PRE-INSTALL CHECK LIST (before removal and disposal of packaging)	**Correct Y/N**	**Checked By Name**
Check doorset size correct for the aperture size before removal of any existing doorset		
Check doorset correct colour		
Check door and glazing design correct		
Check door orientation (open -in/open-out against survey sheet)		
Check handing of doorset correct against survey sheet		
Check you have the right fixings and number of fixings in your kit before starting install		
Check your kit for the right type and quantity of packers, and perimeter fire stopping materials before starting the install		
Check that any frame extensions are correct size if required		

LOCATING THE DOORSET IN STRUCTURAL OPENING

Locating the doorset in the structural aperture correctly is key to the success of the installation. Make sure the frame is located vertical and plumb within the aperture.

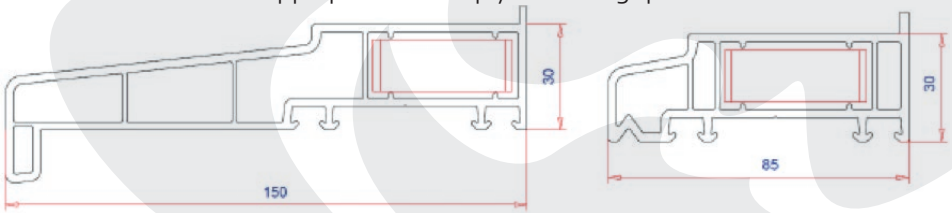
PVC CILLS

PVC cills may be fitted to the underside of the doorsets below the aluminium threshold.

The below referenced Solidcor PVC cills are permitted with this door assembly:

- 150mm deep x 30mm high (Ref 30039)
- 85mm deep x 30mm high (Ref 30040)

The PVC cill must contain the appropriate Solidcor plywood and graphite inserts.



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FRAME EXTENSIONS

Frame extensions of the following dimensions may be fitted to extend the overall width of the frame jambs and head. Only the below referenced Solidcor R30 frame extensions are permitted with this door assembly:

- 15mm (Ref 30002)
- 30mm (Ref 30003)
- 45mm (Ref 30004)

A total of 2no. frame extensions may be fitted back-to-back to allow an increase in overall width of the frame (maximum extension 90mm using 2no. 45mm extension pieces). The frame extensions must be tightly butted to the frame, or the second extension, as applicable;

The frame extensions must be appropriately fixed to the door frame/supporting construction. Where frame extensions are used, the frame and extensions must be fitted with screws of appropriate length to go through the frame and extension, or the extensions must be fitted separately to the aperture, and subsequent extensions/frame extrusions should be fitted to the secure frame extension. Frame extensions must sit flush to each other and to the frame reveal. The sealing between the frame extension and wall must be in line with approved fire stopping methods.

RAIN DEFLECTORS

Solidcor rain deflector Ref 40068 must be fitted to any doorset that faces the external weather elements to maintain guarantees and performance.

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SUPPORTING CONSTRUCTION

- The structure above the proposed timber door assemblies must be self-supporting and must not impose any load upon the timber door assemblies under cold-state or fire conditions
- The supporting construction must have been fire tested or assessed to provide in excess of 30 minutes fore resistance, at the required size, when incorporating door openings
- If fitted into timber or steel stud partitions, the method of forming the door assembly opening must be tested by the partition and/or door assembly manufacturer
- When fitted into steel stud partitions, it is recommended that the steel studs and steel head profile at the perimeter of the proposed timber door assemblies are reinforced with lengths of timber which are a minimum of 38mm thick, and which are adjusted in width to completely fill the steel profiles

NOTE: Any reference to steel stud partitions is in the context of permanent elements, such as those designed and proven by the plasterboard manufacturers - this report does not approve use of the proposed timber door assemblies in proprietary 'demountable' partitions

Element	Specification/quantity/dimensions	
Supporting construction options	Option 1	Timber stud plasterboard partition
	Option 2	Steel stud plasterboard partition
	Option 3	Masonry walls (Blockwork, brickwork & concrete)

OVERSIZED STRUCTURAL OPENINGS

- Wherever possible, gaps between the rear of the door frame and structural opening should be controlled so that they meet the gap sealing requirements
- Where the gap between the rear of the door frame and the structural opening is larger than can be filled with an approved gap sealing system, then it is permitted to line the structural opening with one of the lining material options detailed below

Element	Specification/quantity/dimensions	
Lining material options	Option 1	Plasterboard
	Option 2	MDF (minimum density 700kg/m^3
	Option 3	Plywood (minimum density 640kg/ m^3
	Option 4	Non-combustible board (eg. Supalux)
Fixings installation	- Lining materials must be bedded on a proven intumescent mastic/sealant and fixed securely to the perimeter of the structural opening, or the rear of the door frame, using steel screws on maximum 400mm centres - Screws must penetrate the lining material and engage into the perimeter of the structural opening. Screw fixing centres must not coincide with hardware mortices	
Additional requirements/notes	- Lining materials must finish flush with the face of the structural opening - No gaps should be present between the lining material and the structural opening/door frame	

Installation Instructions

DOOR FRAME FIXING REQUIREMENTS

Element	Specification/quantity/dimensions
Fixing type	The selected fixing must be suitable for use in the type of construction surrounding the door opening
Fixing diameter	Minimum 5mm
Fixing length	· When fixing to masonry walls, fixings must be of a sufficient length to penetrate the wall by at least 50mm · When fixing to timber/steel stud partitions, fixings must be of a sufficient length to fully penetrate the timber stud or timber reinforcement within the metal studs
Fixing material	Steel
Fixing positions	· All fixings must be inset from the edge of the door frame by a minimum of 20mm and should be positioned to ensure that they are fitted through the timber reinforcement of the frame profile (Fixings may be positioned under the hinge blades, providing the above limitations are met) · It is permitted for one of the screws used to secure the hinge blade to the door frame to be extended in length to pass through the door frame and into the supporting construction in one, or all of the hinges · There must be a minimum of 1no. line of fixings passing through the door frame in the plane of the leaf thickness. · Primary door frame sections up to 100mm in width/depth require a single line of fixings and those over 100mm in width/depth require a twin line of fixings
Fixing frequency	Fixings must be located at 150-200mm from the top and bottom of the jambs and on maximum 700mm centres thereafter
Concealing fixings	Fixings may be concealed behind the intumescent strips or alternatively through centre hinge holes on hinge side of the door

DOOR FRAME PACKERS

Element		Specification/quantity/dimensions
Packer options	Option 1	Plastic shims/packers (For example, Broadfix)
	Option 2	Timber (MDF, softwood, hardwood)
	Option 3	Non-combustible board (For example, Supalux)
Fixings installation	· Door frame packers must be used at all fixing positions, but their use must be minimised beyond this, so as to avoid excessive interruption of the backfilling/ firestopping materials and gap sealant which are installed within the linear gap at the rear of the door frame · Typically, door frame packers must be cut short of the gap sealant/wall face, unless fire test evidence is available to demonstrate that the proposed gap sealing configuration/system has been successfully fire tested for the proposed period of fire resistance with frame packers which penetrate the gap sealant. · If combustible packers are employed, these must be protected by a layer of Solidcor Pyrostik Fire Mastic gap sealing aligned near to each face of the door frame	
Requirements/ notes	The use of metal frame packers/shims are not permitted under the scope of this report	

Installation Instructions

SIDELIGHT AND FANLIGHT INSTALLATION

When the doorset is installed with fanlight or sidelight or one of each, the installation manual is attached to the relevant window for that element of the installation and must be read in conjunction with this manual. Latest version of these documents can be found under the resources tab on our website.

ARCHITRAVES

Architraves in the form of PVC-u trims are permitted where the gap sealing system to the rear of the frame has been carried out in accordance with that as outlined in section 2.0 of this manual.

DOOR FRAME & LEAF ALIGNMENT

- The door assemblies must sit entirely within the plane of the fire rated supporting construction
- It is not permitted for the door leaf or door frame to project beyond the face of the supporting construction. This includes any degree of door leaf or door frame projection to enable alignment with decorative 'cladding' which is fitted on the face of the fire-resisting supporting construction (e.g. timber panelling on battens, or plasterboard on dabs)
- The door assembly design shall be such that when closed, the door leaves may finish with up to a maximum of 2mm protrusion from the outer frame edge. Leaves may also finish flush, or be set back slightly, from the outer frame edge

DOOR EDGE GAPS

ELEMENT	DIMENSIONS
Gap between leaf & frame jambs/head	1.5mm to 4mm
Gap between bottom edge of door leaf and finished floor (fire only)	Max 6mm
Gap between bottom edge of door leaf and finished floor (fire & smoke)	Max 3mm*

* Gaps in excess of 3mm are permissible provided a suitable smoke seal is included

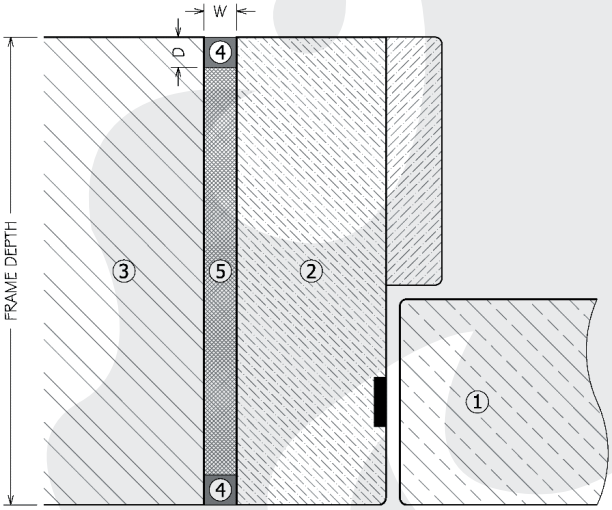
Perimeter Gap Sealing

All perimeter gaps between door frame and structural opening must be sealed to stop fire and smoke, but also to prevent water and air permeation providing thermal and weather protection.

Perimeter gaps should be kept to a minimum to aid performance of the doorset in regards installation and fire integrity. Where possible it is recommended to keep perimeter gaps below 15mm wide and this can be achieved with the use of the frame extensions as detailed in Section 1.0 of this manual.

GENERAL REQUIREMENTS/NOTES

- The following sections provide both specific gap sealing system specifications as well as general requirements to help select alternative gap sealing systems to be used between the rear of the door frame and supporting construction.
- The gap sealing information detailed herein, relates to the linear gap between the door frame and surrounding construction, as depicted in the drawing below, and must not be used to support the sealing of other, unspecified gaps
- Guidance on the correct installation method for the individual components of the gap sealing system component can be found later in the manual



KEY

1	Door leaf
2	Door frame
3	Supporting construction (Masonry, steel/timber stud partition)
4	Gap sealant
5	Backing material
D	Depth of gap sealant
W	Width of gap/gap sealant

Perimeter Gap Sealing

SOLIDCOR PYROFOAM AND PYROSTIK FIRE SILICONE SEALING SYSTEM

5-24mm wide gaps between the rear of the door frame and supporting construction must be fully filled for the complete perimeter of the frame using Solidcor Pyrofoam expanding joint filler (60005) (Everbuild B2 Firefoam polyurethane foam) and capped on both sides with Solidcor Pyrostik Fire Silicone (ref: 60001/6 (white) or 60002 (grey)) (Everbuild Firemate Silicone Sealant) to a depth of 10mm.

BLUE60 FOAM

5-17mm wide gaps between the rear of the door frame and supporting construction must be fully filled for the complete perimeter of the frame using Blue60 foam. It shall be ensured that the Blue60 foam fully fills the 70mm depth of the door frame. The Blue60 foam shall be used with Blue 60 packers.

ALTERNATIVE GAP SEALING SYSTEMS

Alternative gap sealing products used in conjunction with proposed door assemblies must have been successfully fire tested for 30 minutes fire resistance in accordance with BS476: Part 22: 1987 or BS EN 1634-1 meeting all of the requirements detailed below

Individual components of the proposed gap sealing system must be installed in accordance with approved documentation

DOOR ASSEMBLY CONFIGURATION

- Must have been successfully fire tested when sealing the linear gap between a PVC-u door frame and the supporting construction (see restrictions on frame materials below), with the door assembly orientated so that the door leaf is opening towards the fire test furnace
- Gap sealing products which have just been fire tested sealing linear gaps within blockwork walls are not permitted

GAP WIDTH

Must have been successfully fire tested when sealing a linear gap width, equal to, or greater than, that proposed

GAP SEALANT DEPTH

Must be applied to a minimum depth of 10mm (or increased to match the depth which was fire tested)

Perimeter Gap Sealing

The following sections outline the correct installation methods for each specific item. This does not mean that all methods are approved and the installer must satisfy themselves as to the suitability of any alternative gap sealing menthod.

BACKING MATERIAL (FITTED WITHIN LINEAR GAP)

TESTED BACKING MATERIAL	PERMITTED BACKING MATERIAL OPTIONS			
No backing material included	None	CC Polyethylene backing rod	Expanding FR PU foam*	Mineral rock fibre
Closed cell polyethylene backing rod		CC Polyethylene backing rod	Expanding FR PU foam*	Mineral rock fibre
Expanded FR PU foam		Expanding FR PU foam*	Mineral rock fibre	
Mineral rock fibre				Mineral rock fibre

* Must have been successfully fire tested when sealing a linear gap between the rear of a PVCu frame and a steel/timber stud partition or masonry wall

ARCHITRAVES

TESTED ARCHITRAVE CONFIGURATION	PERMITTED ARCHITRAVE CONFIGURATION
No architraves fitted	Architraves are optional
Architraves fitted	Architraves must be fitted

DOOR FRAME PACKERS

TESTED PACKER CONFIGURATION	PERMITTED FRAME PACKER CONFIGURATION	
Concealed (Cut short of gap sealant)	Concealed (Cut short of gap sealant)	
Exposed (Penetrating gap sealant)	Concealed (Cut short of gap sealant)	Exposed (Penetrating gap sealant)

Perimeter Gap Sealing

INSTALLATION OF GAP SEALING COMPONENTS

- Wherever possible, gaps between the rear of the door frame and structural opening should be controlled so that the gap width is consistent over the entire perimeter of the door frame, and is of a size which enables the installation of a suitable gap sealing system as outlined earlier
- If the linear gap width varies across the perimeter of the same door frame, then it is permitted to transition from one gap sealing system to another, provided each gap sealing system used is suitable for the gap width present at its installation location

GAP SEALANT

Gap sealant must be applied in a continuous bead over the entire length of the linear gap at the rear of the door frame ensuring there is intimate contact between the gap sealant and the adjacent surfaces

- Where permitted with the approved gap sealing systems, the gap sealant may be interrupted by frame packers
- The bead of gap sealant must finish flush with the door frame/adjacent wall
- The gap sealant must be applied to a minimum depth in accordance with that, as outlined in this document, but in linear gap widths up to 5mm, the gap may be too narrow, to apply, or measure, this minimum requirement. In this scenario, a continuous bead of gap sealant must be applied over the entire length of the linear gap to the maximum achievable depth, and architraves must be installed

MINERAL ROCK FIBRE

- The base density of the mineral rock fibre is not critical, provided the requirements detailed in the points below are met
- It must be ensured that mineral rock fibre is utilised. Insulation materials manufactured from, or comprising glass fibres, are not permitted
- Mineral rock fibre must be tightly packed for the full depth of the frame, over the entire length of the linear gap, with allowance made for the correct depth of gap sealant
- Interruption by the frame packers at each fixing location is permitted, but it must be ensured that the mineral rock fibre is fitted tightly packed against both sides of each packer
- There must be no large voids present within the mineral rock fibre

CLOSED CELL POLYETHYLENE RODS

- Closed cell polyethylene backing rods must be installed in continuous lengths, which must only be interrupted by the frame packers at each of the frame fixing positions
- Rods must be fitted within the linear gap using a tight friction fit. To enable this, rods must always be of a larger diameter than the linear gap width into which they are being installed
- Rods must be set back from the frame/wall face to a degree which allows the correct depth of gap sealant to be applied

EXPANDING FR PU FOAM

- Expanding FR PU foam must fill the full depth of the frame, over the entire length of the linear gap, with allowance made for the correct depth of gap sealant
- There must be no large voids present within the expanding FR PU foam

Final Finishes

Remove protective film from R30 Doorset immediately after the installation is complete. The frame film should have been removed before sealing the perimeter gaps.

Final Inspection & Registration

CHECKLIST
On completion of the installation a checklist should be completed and records kept on file for the period of the guarantee.

A general checklist is provided in Appendix 1. We advise the installer carries out this checklist along with the customer or ideally the accountable person under the RRO. We also advise a toolbox talk on the User Guide is carried out with the customer and accountable person under RRO at point of hand-over of the keys.

DOORSET O&M (Operations & Maintenance)
O&M is critical to the on-going fire and security safety performance of the R30 Fire Doorset.

Maintenance is done by UKAS accredited installer schemes which include maintenance of fire doors and records of maintenance kept for the period of the guarantee. Training should be done to the written O&M Manual instructions which are available from Solidcor.

Final Inspection & Registration

APPENDIX 1 - FINAL CHECKLIST

SOLIDCOR R30 Doorset Installation	Correct Y/N	Checked By Name
FIXINGS CHECK		
Check correct fixings used and correct penetration length through frame into structural opening		
Check number of fixings correct		
Check spacing of fixings correct through-frame on lock-side jambs		
DOOR & PERIMETER FRAME GAPS CHECK		
Check perimeter gaps between frame and structural aperture within limits		
Check door gaps to 3mm and within tolerance 2.5mm to 4mm		
CHECK DOORSET & CLOSER OPERATION		
Check doorset installed in aperture plumb, square and vertical		
Check door closer power size, closing and latching speed adjusted correctly, and that the door closes with all windows closed		
Check Multi-point lock auto throw activates on strike plate		
Check handle operation and turn the key in euro cylinder and make sure door locks and un-locks easily		
FINAL HANDOVER CHECK		
Additional Top Lights and Side Lights		

Final Inspection & Registration

APPENDIX 1 - FINAL CHECKLIST

SOLIDCOR R30 Doorset Installation	Correct Y/N	Checked By Name
FINAL QUALITY CHECK		
Check Doorset clean and all protective film removed		
Check exposed faces for door leaf and frame free from physical damage or contamination		
Check frame welds and any glazing for cracks		
Check structural (brickwork, lintel etc.) surrounding aperture not damaged		
Check all internal and external architrave and trims fitted correctly and excess sealant cleaned off surfaces		
Check gaps between frame and structure not too large and fully filled with approvedgap sealing system		
FINAL HANDOVER CHECK		
Check keys handed over to correct person after completion		
Upload details of install to your system and maintain records		

Address:	Door No:
	Installation Label No:

Signature



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