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### FIRST FIX

**FIRST FIX** 

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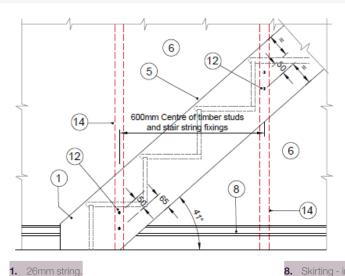
Before any First Fix inspection, the following must be checked.

- 1 Ensure the plot is water tight.
- **2** Ensure insulation is installed between joists in integral garages as per specification and detail.
- **3** GRP and low level roofing tiling should be completed by this stage.
- 4 Ensure all joists and all roof metal work are fully fitted.
- **5** Ensure noggins are installed to floor perimeters and lateral restraint straps are installed.
- 6 Packers between joist and wall face on lateral restraint straps.
- 7 Make sure all Soil Vent Pipe (SVP) and electrical vents are connected into the loft space and are clipped to their corresponding roof truss.

- 8 Ensure pipes and cables are supported in line with manufacturers' guidance.
- 9 Safety glass is fitted, are correctly marked up in accordance with the British standards.
- **10** Ensure any robust details checklist have been completed.
- **11** Make sure all windows and French doors have straps at the correct angle and spacing as per the manufacturer's guidelines.
- **12** First Fix is a warranty provider key stage inspection.
- **13** For mechanical fixing and detail information on metal studs, refer to S16 Plaster & Drylining.

14 Dependent on devolved nations building regulations, sprinkler systems may be required and should form part of the service design. Sprinkler must be installed in accordance with manufacturers' design.

#### STUDWORK PARTITION ELEVATION / SECTION SHOWING BASE FIXING OF STRAIGHT FLIGHT STAIR



- Airbourne sound insulation may suffer if airtightness is not maintained, therefore continuous beads of Gyproc sealant are to be used behind the stair string, top and bottom.
- 6. 12.5mm Gyproc Wallboard fixed with 32mm Gyproc Drywall timber screws at 300mm centres.

#### PROCESS: TIMBER FRAME PARTITIONS

- Erect timber studwork partitions (normal lined one side as detail) with vertical timbers
  at 600mm centres, and add partition insulation. All in accordance with the Timber Frame Manufacturer's specification and details.
- Before plasterboard lining boards are fixed to timber framework clearly identify the location of the vertical timber members at 600mm centres to allow for the fixing of the stair string as shown on studwork partition elevation / section.
- **3** Add wall insulation and plasterboard lining board to timber studwork.
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- Screw string into studs at 600mm centres.
- **5** Add continuous beads at Gyproc sealant behind and to the top and bottom of the stair string.

- 8. Skirting indicative
- Skirting fixed to masonry wall or timber stud wall. **12.** Min 4mm diameter (8 gauge) screws to penetrate 50mm into stud.
- 14. Timber vertical studs at 600mm centres

#### PROCESS: MASONRY WALLS

- 1 Erect masonry walls. All in accordance with current standards.
- 2 Fix 75 x 25mm timber packer screwed to stair string with 40mm (8 gauge) screws at 300mm centres. Fixings to follow the angle of the stairs.
- 3 Add plasterboard lining board to plaster dabs and fix in accordance with manufacturer's details.
- 4 Drop plasterboard down onto timber packer, plasterboard cut to the profile of the packer.
- **5** Insert plasterboard below timber packer and behind string.

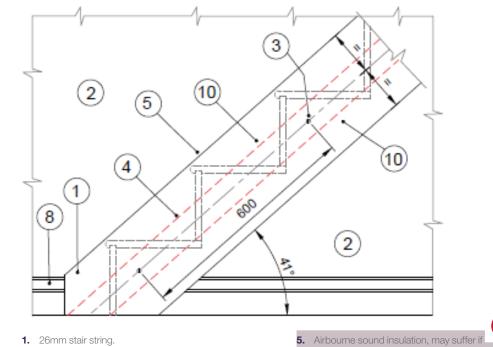


Screw string to timber packer 300mm centres or in line with manufacturers' installation instructions.

7 Add continuous beads of Gyproc sealant behind and to the top and bottom of the stair string.



**MASONRY PARTITION ELEVATION / SECTION** SHOWING BASE FIXING OF STRAIGHT FLIGHT STAIR



- 2. 12.5mm Gyproc Wallboard on plaster dabs fixed in accordance with the manufacturer's detail.
- **3.** 100mm x 12 screws to penetrate 50mm into masonry.
- 4. 75 x 28mm timber packer to follow angle of stairs.
- **1** SiteM should measure the storey rod height for the staircase before ordering. The rod height is from the screed on the ground floor to the top of the screed on the 1st floor.
- **2** Check fixing and positioning of stairs, check stairs are fixed to abutting walls using sufficient proprietary fixings.

- airtightness is not maintained, therefore continuous beads of Gyproc sealant are to be used behind the stair string, top and bottom.
- 8. Skirting indicative Skirting fixed to masonry wall or timber stud wall.
- **10.** Plasterboard stopped either side of packer.
- **3** A mechanical fixing should be installed on blockwork or timber studs as per manufacturers' installation instructions.
- 4 Metal studs should not be used to support stairs.



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Check the stairs are packed off the wall to 1 ensure that plasterboard can fit behind the stair string. Timber packers used between the stair string and abutting wall must be kept lower than the top edge of the string to ensure correct installation of plasterboard. Specific fixing detail / timber stud / timber frame.



2 A stair kicker should be installed at the base of the stairs by screwing a 50 x 38mm timber runner against the first riser using 4 no. 75 x 10mm screws and plugs.



**3** Ensure treads are level and newels are plumbed up to each other. DPC under bottom newel and riser of stairs. Winders sufficiently supported. Check wedges are glued and fitted to maintain stair integrity NEW Install temporary support to the underside of the stair until fully fixed.



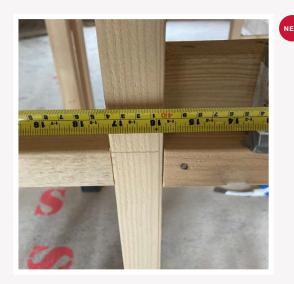
4 Newel post housed into trimmer of joist neatly and correctly. Top nosing fitted level with floor decking. Check headroom at this stage to be 2m after plaster boarding.

FIRST FIX

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1 Check positioning and setting out of stud walls and doorways. Studs should be at 600mm centres and 400mm centres around wet rooms with a single row of horizontal noggins / dwangs. DPC should be fitted under ground floor studwork (continuous DPC or minimum 100mm lapped DPC to be used). For metal studworks, refer to S16 Plastering & Drylining.



2 Additional noggins should be installed as required so that support is provided to ceiling and wall boards. No plaster boards should overhang more than 150mm.



Noggins should be offset at door heads to allow for plasterboard to be returned and fixed, eliminating straight board joints at door heads. Eliminating the straight board joints reduces the risk of shrinkage cracking and off cuts of the plasterboard can be utilised on window and door reveals, reducing wastage.

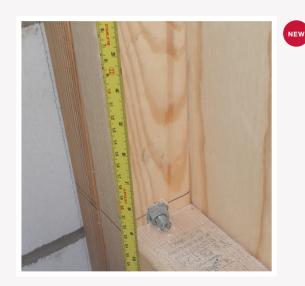
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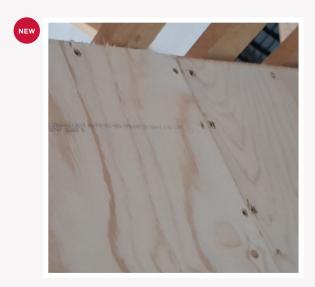


1 Follow specific design for buttress wall details with consideration to head noggin frequency.

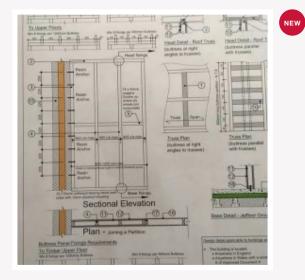


2 Bolt centres should be positioned at 225mm as per TW standard detail. Bolts should be tightened once the resin has been applied.

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**3** Screw fixing centres to be at 150mm as per the fixing specification.



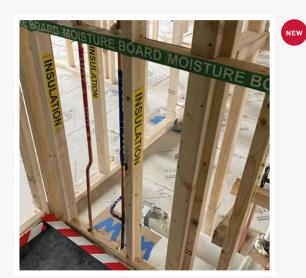
4 Please refer to joist layouts for buttress wall noggin / dwang requirements. Please ensure that the legend within the details are strictly followed.

FIRST FIX



1 Noggins or proprietary brackets should be used for electrical boxings and pendants.

Noggins should be installed to support electrical boxes and light pendants.



2 63 x 38mm timber stud partitions should be installed at 400mm centres around wet room areas to support full height tiling. Noggins tightly fitted and installed to a good line.



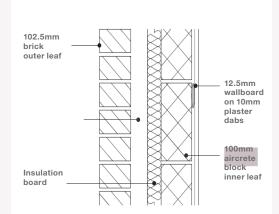
**3** Pattresses or grounds for basins, WC's, radiators, fans and kitchen wall units, boilers should be installed so that fittings and fitments can be adequately fixed and supported. TW specified fixings must be used as outlined in HSE Manual Guidance.



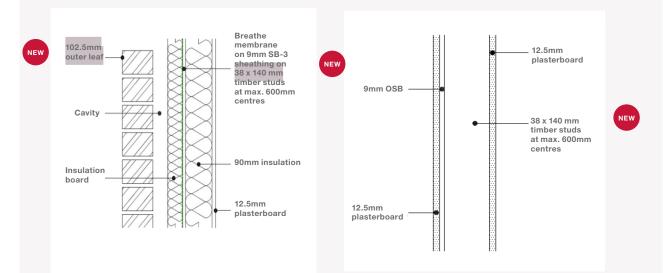
**4** Pattresses or grounds for kitchen units should be installed on timber studwork as per HSE Manual Guidance.



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1 The frame should be fixed into the lightweight block a minimum of 50mm into blockwork with a Hilti HRD-H 10 x 80 / Fischer SXRFUS10 x 80 or equal. With a frame fixing into dense blockwork, the screw should be installed a minimum of 50mm into blockwork: 40kg shear / tension load per fixing.



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2 For timber frame, a 10GA x 50mm woodscrew into 50mm timber batten with a tension load of 62.8kg per fixing, 79.23kg shear load per fixing.

10GA x 35mm wood screw into 25mm thick timber batten – tension load of 32.93kg per fixing, 29.26kg shear load per fixing.

8GA x 35mm wood screw into 25mm thick timber batten – tension load of 26.3kg per fixing, 29.26kg shear load per fixing. 3 Pattresses or grounds for kitchen units should be installed on timber studwork and the type of fixing depends on the kitchen supplier (refer to the table on the next page).



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# CARPENTRY

FIRST FIX

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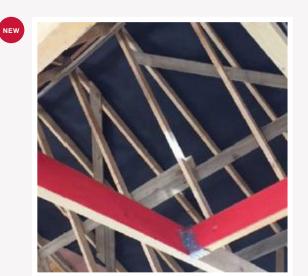
CONSIDERATION SHOULD BE GIVEN TO THE TYPE OF FIXINGS, THE SUBSTRATE TYPE AND THE WEIGHT OF THE ITEM BEING INSTALLED AND ANY ADDITIONAL POTENTIAL WEIGHT THAT THE ITEM MAY INCUR. REFER TO TECHNICAL BULLETIN 0130/07/17 FOR MORE INFORMATION.

#### KITCHEN SUPPLIER WALL UNIT SPECIFICATION

	SUBSTRATE	SUBSTRATE	
SUPPLIER	<b>TIMBER / METAL PARTITIONS</b> Fitted with noggins / pattresses as instructed	BLOCK AND BRICK Dot / Dab	
MOORES	(BRACKET SYSTEM) 50mm No. 10 screws Minimum 2. fixings per bracket	(BRACKET SYSTEM) 75mm No. 10 screws Minimum two fixings per bracket Rawl plug uno or equivalent Minimum 45mm plug and screw	
	contact within block / brick When fixing through rail units up to 600mm wide two fixings top rail / two bottom rail. Units over 600mm three fixings to top rail / two bottom rail.		
MANHATTAN / PAULA ROSA	(BRACKET SYSTEM) 50mm No.10 screws Minimum two fixings per bracket	(BRACKET SYSTEM) 75mm No.10 screws Minimum two fixings per bracket	
		Rawl plug uno or equivalent Minimum 60mm plug and screw contact within block / brick	
SYMPHONY	(BRACKET SYSTEM) 75mm No. 10 screws Minimum two fixings per bracket	100mm No. 10 screw Minimum two fixings per bracket Rawl plug uno or equivalent Minimum 50mm plug and screw contact within block / brick	
	Plasterboard fixings or cavity anchors must not be used under any circumstances.		
	Please refer to manufacturers' ins	stallation	



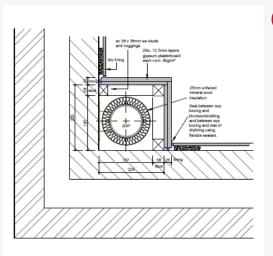
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1 Loft hatch to be set out and trimmed at First Fix stage using hangers or clips.

Ensure it can accommodate any potential option for coving.

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**2** Boxings should be constructed and fixed square ensuring no section of material / timber comes into contact with the soil pipe, as this can be a common cause for issues with ticking / knocking stacks.

SVP should be wrapped with 25mm insulation and have 2 x 12.5mm of plasterboard or one layer of 15mm thick soundbloc (fire-rated) plasterboard.



3 Window boards to be neatly cut with an even cut either side and the bullnose returned smoothly sanded, returned and sealed under to prevent air leakage. Appropriately fixed and supported from beneath. Window boards adequately protected from surface damage and potential water damage through the drying out process.

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1 External doors should be fitted as per manufacturer's instructions. Adjusted and working correctly. Use of packers should be used to create even margins around the perimeter. Ensure cavalok structural cavity closers are installed as per design. All doors should be bedded on mastic.



2 Before fitting, check the size of the door in relation to the opening and set aside. Attach fixing straps to door frame, 5 straps must be fitted per frame jamb. The top and bottom strap should be positioned within 150mm of the top and bottom of the frame, subsequent straps should be installed at max 600mm centres.



3 Apply a good bed of silicone seal to the floor slab to prevent water ingress and to ensure that the home is weather tight.



4 Centre door unit in opening. Position door set back 38mm from the internal face of the outer brickwork. For Scotland, the door will be set level with the outer brickwork. Level sill using packers under the sill where necessary.

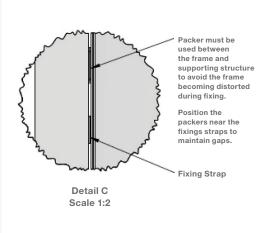
#### Note:

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Installation of fire doors should be completed by a competent tradesmen. The gap along the sides / top / between the leaves and the thresholds should be in line with the manufacturer's installation instructions.



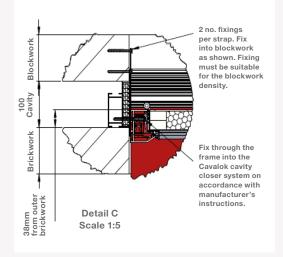
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**1** Using a long level square up both the hinge side and the lock side jambs (side to side and front to back) and fit packers to keep the unit square. This ensures that the frame does not become distorted during fixing.



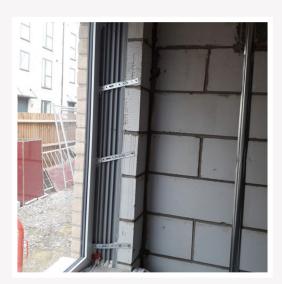
**2** Fix the hinge side first at the top and bottom positions using suitable fixings for the blockwork density. Check the frame is square. Repeat this process for the lock side jamb, check frame is square and fix remaining straps.



**3** Fix through the frame into the cavalok cavity closer system (refer to manufacturer's guidance) using suitable fixings, fixed 150mm from the top and bottom of the frame and 600mm centres thereafter. Avoid hinge and lock keeps when fixing the frame.



4 Once the door has been securely fixed, check the squareness and adjust accordingly. Adjust hinges as necessary and refer to manufacturer's adjustment guide for instructions. Finish the frame by filling between the frame and the structural opening with expanding foam, allow to dry and apply external sealant.



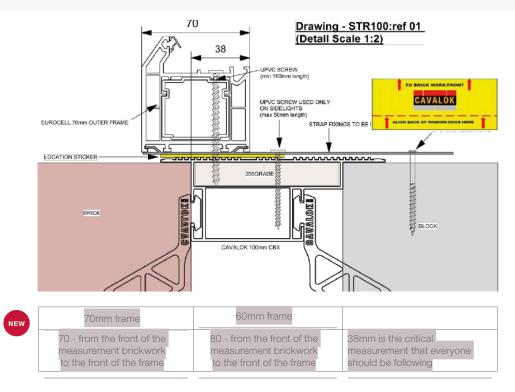
**1** Brackets spacings should be no greater than 600mm sloping outward and within 150mm of the top and bottom of the frame.

Fixings to be plugged and screwed, 2 fixings per bracket in the side reveals and one fixing on the head.



2 Ensuring the window installer achieves the correct setback for the window from the front face of the brickwork is important to alleviate cold bridging at this point.

TW cavity closers feature a sticker to indicate where to set the windows back to, at approx. 138mm from the face of the brickwork, well within tolerance. Windows should also have a sticker and be set back 138mm from the outer face to the inner face of the window.



#### CAVALOK 100MM - DOOR SET ASSEMBLY DETAIL

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### CARPENTRY - FIRE DOORS





**1** Fire doors must be installed as per manufacturers' installation guidance and an installation and commissioning check sheet with a photo of the label must be completed for each fire door by the installer and provided to the site manager.



3 Fire door assemblies or fire door sets should only ever be installed where they are fully third party certificated and have:

1) Product identification and traceability

2) Fitted with all their compatible components which should be listed on the fire door certificate.

3) Always check the fire door certificate or manufacturers' installation instructions to ensure compatible products are used.

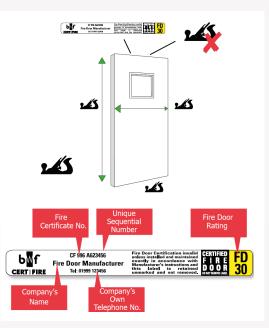
4) Certificates are available on DocHosting on Group Technical Information.

5) The certificate is a vital part of pre tender information.



2 Fire doors and frames must be installed by someone who is competent, has been trained specifically on how to install fire doors and understands the responsibilities of getting it right.

A carpenter should complete training on the installation of fire doors by a training provider and should be assessed and deemed competent by their employer.



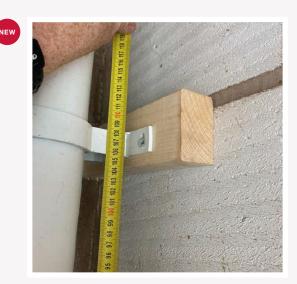
4 A door leaf should only require minor resizing to fit the frame. Check the manufacturers' installation instructions for the maximum amount of material that can be removed.

The BWF Fire Door Alliance Certifire label/s should not be removed, damaged, or repositioned as this will invalidate the certificate.

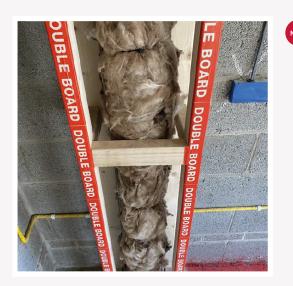
Always check the manufacturers' instructions.







- 1 Check 100mm waste pipes are correctly fixed, have the correct fall and are insulated using 25mm unfaced mineral fibre.
  - Brackets to be fixed in accordance with manufacturers' recommendations which may or may not require a batten.



2 100mm SVP is correctly fixed using the correct brackets and insulated using 25mm of unfaced mineral fibre. Check the correct supporting brackets are used and screwed in position. Bracket distances should be at 1.8m centres.

Soil stack pressure tested.



3 Check that all open ends of pipework have been sealed to prevent debris entering the pipes.





4 Shower tray should be secured to the floor and protected against damage immediately after installation so that the protection can be easily removed once work is complete.

# FIRST FIX

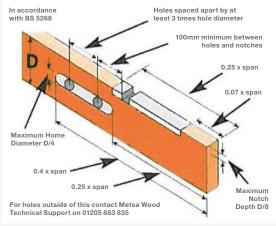
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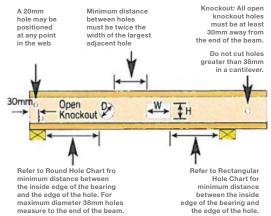


#### **KERTO® HOLES**



- 1 Check position of drill holes in joists as per manufacturer's guidelines, check that any such holes are neat and tidy. As per the diagram above, the minimum distance between drill holes must be twice the width of the largest adjacent hole. Ensure hot and cold pipes are separated and labelled with main hot water feed and the main hot water feed should be insulated. Check manufacturer's guidelines prior to making any cuts or drill holes, and ensure any services passing through are neat and uniformly installed.
- 2 Primary circulation pipes for the heating circuits should be insulated wherever they pass outside the heated living space of the dwelling or cannot be isolated during summer months. Primary circulation pipes

#### **FINNJOIST (FJI) WEB HOLES**



for domestic hot water circuits should be insulated throughout their length, subject to practical constraints imposed by structural elements. All pipes connected to hot water storage vessels, including the vent pipe, should be insulated for at least 1m from their point of connection to the cylinder. Refer to manufacturer's instructions for additional guidance on specific hole sizes.

- **3** Further guidance can be found in NHBC Technical Extra 13.
- 4 Templates for boiler and cylinder pipes should be used to ensure accurate positioning of pipework.

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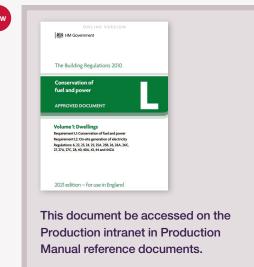
1 The primary flow and return pipework should be insulated in order to prevent heat loss in winter and heat gains as per approved document L1a.





2 Hot and cold pipes should be identified using red and blue clips. Tape should not be fixed directly onto the plastic pipes as per manufacturers' guidelines. Pipes should be individually clipped at max 600mm centres.

Pipework should be identified within the floor joists.



L1a document



All pipework should be adequately 3 supported within the floor void. Check that installed pipes do not touch each other to prevent heat transfer from the hot pipework to the cold pipework.

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4 Tape locator should be installed behind all plastic pipework, ensuring that the sticky backing avoids contact with the pipework itself.

Where gas pipework is within a chase this needs to be mortar filled and an anti-nail plate applied. Chasing depths should be no deeper than one sixth of the thickness in horizontal blockwork and one quarter in vertical blockwork.

Vertical pipework and radiator tails should be adequately clipped at regular intervals and kept running horizontally and vertically within their zones.



### MANTHORPE RADIATOR TAILS

#### Note:

Good practice: TW currently use GRS Manthorpe radiator pipe guidance seal alternatively, Manthorpe have now introduced the GRS DUO as the next generation of the GRS & GRS FF product range already in use.

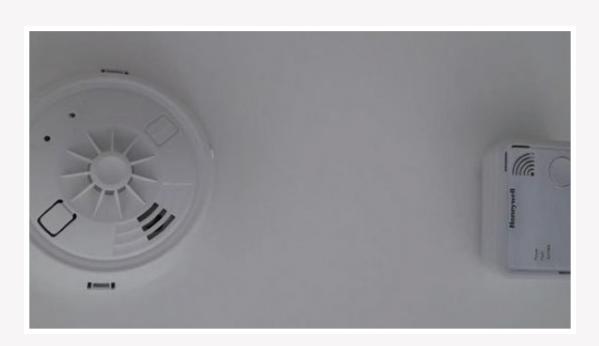
Upon completion of First Fix pipework, pipes are required to be tested and witnessed. The pressure and duration of the test is determined by the pipework manufacturer. If any leaks occur during the test, the leaks must be rectified and the testing process recompleted once the leak is resolved.

Any penetrations passing through a fire rated wall must be assessed and filled with an appropriate intumescent sealant. Good practice: third party installer and certifier should be used.

FIRST FIX



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1 Carbon monoxide (CO) monitors should be fitted to kitchens, garages and utility rooms with gas appliances in accordance with manufacturer's guidance. Smoke, heat and  $CO_2$  alarms should be fitted 500mm where achievable, but minimum of 300mm from corners of walls, loft hatches or any NEW other obstructions.

There should be a minimum distance of 900mm from the alarm to the door opening.

If wall mounted, monitors should be fitted 150mm from ceilings and within 1 - 3 metres of fuel burning appliances.



1 As per house type design, consumer units are positioned so that switches are between 1350 - 1450mm above finished floor level.



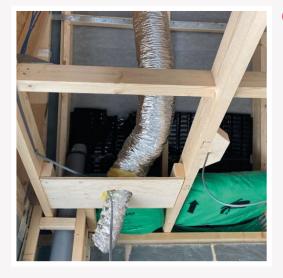
2 Zehnder Comfotube ducting should be supported at 1m max centres using perforated galvanized duct banding. Where ductwork passes through an external wall, it should be positioned to slope slightly to prevent water entering the building.





#### Apartments Only

Rigid ductwork to be installed in a neat and secure manner with clips at maximum 750mm centres and a minimum of bends. Ductwork passing through compartment walls has been fitted with fire protection in accordance with design. When a duct passes through cold spaces, this has been adequately insulated.



**4** E

Ensure that the ventilation where in a cold roof environment is fully insulated as per the design.

FIRST FIX

**1** Wires should be individually clipped at maximum centres of 400mm, installed to the correct line and level.



adhered to unless a pipe and wire detector

vertically or horizontally to switch or outlet

in shaded zone 150mm wide

is used by the installer.

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3 Metal boxes should be level, aligned, have 75mm distance (one single metal box) distance and be at the correct height using 2x round headed, non corrosive fixings within each box. Rubber grommets should be fitted into back boxes to prevent damage to the surface of the wire and through the metal stud.

75mm

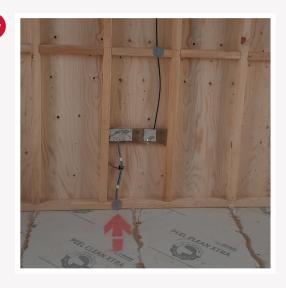


**4** Back boxes should be protected using tape.

All electrical fittings, within a lightweight partition protected escape routes, that are within 150mm of each other within the same partition bay or are back to back, are suitably protected from the spread of fire and smoke.

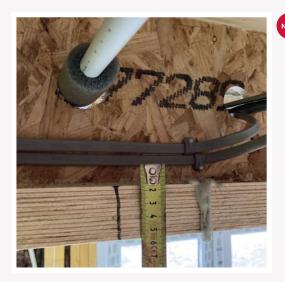


FIRST FIX



#### Best practice.

Where cables pass through a timber stud, ensure that there is a 50mm coverage or is suitably protected.



2 In the event of a crossing or proximity of telecommunications cable and power cable, a minimum clearance of 100mm should be maintained unless a fire retardant partition or mechanical protection is installed. Cables should not be less than 50mm from the underside of trusses and joists.



3 Downlighters should be DETA approved, a maximum of 1 downlight per square metre and no closer the 600mm apart. It should be in line with the downlighter layout plan and manufacturer's instructions.



4 Any penetrations through masonry should be sleeved and sealed.

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Note:

Doorway position to the light switch should be a consistent distance through the property. Consideration for surrounding furniture or obstructions and local adjustments may be required.

Downlighter layout design must be available on site. Only LED lamps to be fitted.

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### CAVITY INSTALLATION

#### SUPAFIL® 34 AND SUPAFIL® PARTY WALL INSTALLATION

- 1 Plot must be ready for installation of Supafil® products in accordance with Knauf Insulation and Taylor Wimpey's specific requirements to ensure that efficacy of fill and performance are achieved. The following criteria must be met:
  - All masonry is complete, including bays, low level projections and core holes.
  - The roof is complete. Felted, battened, tiled and any PV installation.
  - The cavity is watertight and sealed at all openings. Including the installation of windows, doors and meter boxes.

For further information on plot readiness, see section 'When is a plot ready for Supafil®?' of the Taylor Wimpey Supafil® Housebuilder Guide.

2 Supafil® installations must only be carried out by BBA Approved Contractors and who employ Knauf Insulation Approved Technicians. Technicians must be able to provide evidence of competence on arrival to site.





**3** Drilling out of the building must only be done following a pre-installation survey to ensure plot readiness. Where a plot is not deemed to be ready, the Technician must bring this to the attention of the Site Management team and complete a 'Dropped Job Report' using KinetiK®.

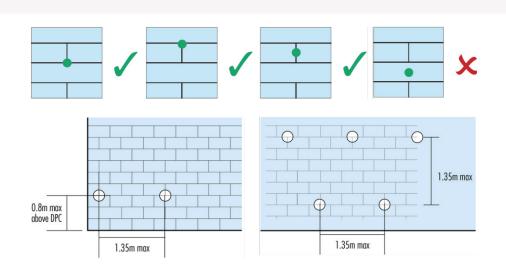
The correct diameter drill bits must be used for the installation of both Supafil® 34 (Ø 32mm) and Supafil® Party Wall (Ø 24mm).

Note There is a noticeable difference in diameter between the external and party walls.

All drilling must be carried out through the joint of the internal blockwork. No drill holes should be identifiable through the middle of the block. This process must be adhered to, as it will prevent spalling into the cavity.

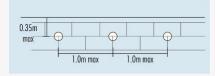
<u>Note</u> Drilling must not be carried out through plasterboard as the joints in the blockwork cannot be identified.

### CAVITY INSTALLATION

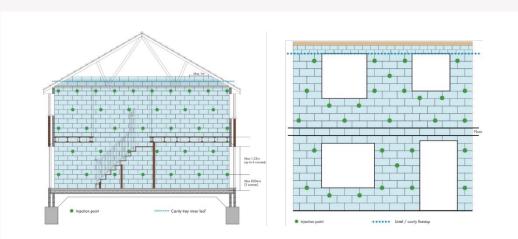


The drill pattern must be within the maximum tolerances of the system design. For both Supafil® 34 and Supafil® Party Wall the first row of drill holes must not exceed more than 0.8m from the floor and must be no more than 1.35m apart. Where the open cavity extends around a corner the maximum distance between drill holes must not exceed 1.35m. Subsequent rows of drill holes must not exceed 1.35m vertically.

Where there is a horizontal barrier in the cavity, e.g. tray or window sill, the drill pattern must not exceed 0.35m vertically and be no more than 1.0m apart.



A diamond pattern should be used so that the next row of drill holes are midway between the two drill holes below. See indicative image of the drill pattern below (also available in the Taylor Wimpey Supafil® Housebuilder Guide.)



## CAVITY INSTALLATION PRE-INSTALLATION

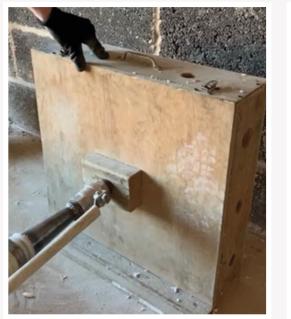
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4 A test box is a density check used to calibrate the blowing machine to ensure the required density for the Supafil® products. The test box must be carried out at the beginning of the installation and when the Technician switches between installation of Supafil® 34 and Supafil® Party Wall. This is to recalibrate the machine for the different installation densities of the products.

The test box must be completely filled and to the specified weight below:

- Supafil® 34 = 1.1 kg (+/-0.1 kg)
- Supafil® Party Wall = 0.9 kg (+/- 0.1kg)

<u>Note</u> It is encouraged for the site team to ask the Technician to carry out a test box for them during the installation.





5 Supafil® 34 and Supafil® Party Wall are easily identifiable by the different colours of the packaging and the products themselves.



NEW

### CAVITY INSTALLATION PRE-INSTALLATION

6 The filling process must not commence until the Technician has drill out the full elevation +2m of the adjoining elevations (ground and upper floors). The Technician must start filling on the lowest row of holes and then continue a row at a time until all holes are filled.

It is the responsibility of the Technician to fully fill the drill holes with mortar once they have been filled with Supafil®.



7 Knauf Insulation KinetiK® App must be used for all Supafil® 34 and Supafil® Party Wall installations to record relevant installation data. This is required on all Taylor Wimpey sites as per section 3.2.4 of the Taylor Wimpey National Construction Specification.

For more information on KinetiK® see the link: https://www.knaufinsulation.co.uk/kinetik

<u>Note</u> It is advised that the Technician is asked if they are recording the installation using KinetiK® and tell them that they must where they are not.

8 Further information on plot readiness and installation of Supafil® can be found via the Taylor Wimpey Supafil® Housebuilder Guide, available on the Production intranet. Additionally, Knauf Insulation can be contacted directly for site support. The relevant contact's details can be found in the Taylor Wimpey Supafil® Housebuilder Guide or <u>email Supafil.Guide@knaufinsulation.com</u>.

Supplier Engagement can be booked via the regional Quality Manager or by sending a request to <u>Supafil.Guide@knaufinsulation.com</u>

### OPTIONS CHECK



**1** The Sales Executive should complete an options check at First Fix stage.