





TIMBER FRAME

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PRE-COMMENCEMENT WORKS

(TW & TF SUPPLIER)

TIMBER FRAME

- 1 Pre-Start meeting – safety information, build route, access and deliveries.
- 2 Crane – lift plans, locations and laydown areas.
- 3 Foundations – tolerances, splash course, drainage, radon barriers, steps and staggers.
- 4 Plot works – driveways, kerbs, access, utilities and drainage.
- 5 Scaffolding – platform levels, hop-ups, system type and access / egress.
- 6 Quality – checks and sign off.

TIMBER FRAME ERECTION

(TW & TF SUPPLIER)

Alternatively, where a TF supply only contract is in place and TW directly employed trades are taking responsibility for construction.

NEW

- | | |
|--|---|
| 1 DPC and soleplates – prior to 1st delivery. | 11 Low level roofs. |
| 2 Deliveries, crane set up and offloading. | 12 Roof must be fully loaded with roof coverings. e.g. tiles or slates prior to any superstructure brick or blockwork commencement. |
| 3 Nailing, fixings and ironmongery. | 13 Brickwork support – steel goal posts within TF. |
| 4 Ground floor (GF) walls – external load bearing (LB), party and non LB walls. | 14 Access / egress – removable sub-panel. |
| 5 Safety platform – Trad-Deck (or similar). | 15 Internal walls – Non LB partitions. |
| 6 Pre-Finished floor cassettes / loose joists, chipboard decking and stairwell protection. | 16 Cavity barriers and fire stops – checks and evidence packs. |
| 7 First floor walls – external, LB, party and non LB walls. | 17 Breather paper and laps. |
| 8 Roofs, gables, ladders, eyebrows and bracing. | 18 Checks, handover and sign-off. |
| 9 Roof cassettes (R-in-R types) – purlins, spandrels, cassettes, GRP dormers and rooflights. | |
| 10 UPVC fascia and soffit. | |

BUILDER WORK – KEY CONSIDERATIONS (TW ONLY)



- 1** **NEW** Fire Safety – 16 Steps and Fire Risk Assessment.
- 2** Checks on substructure and floor dimensions and levels are essential.
- 3** Thermal insulation – tolerances, types, cold spots, loft and eaves pinch point.
- 4** Acoustic insulation – party walls, tolerance, cavity, density, type and internal walls.
- 5** Drylining – moisture, fixings, board types, specifications around apertures and through stairwells.
- 6** Vapour controls – Vapour Control Layer (VCL), laps, penetrations, seals and locations.
- 7** Vertical settlement – eaves, verges, apertures and penetrations.
- 8** Services installation – through studs and joists.
- 9** Penetrations – hot flues and ventilation ducts.
- 10** Gas and utility supply – pipework, risers, meter boxes and ducts.
- 11** Brickwork – wall ties, movement joints, sills, cavity width, fill, cleanliness, perpend ventilators and firestops.
- 12** DPC's – ground levels, around apertures, steps and staggers.
- 13** Cavity trays and lintels – settlement, DPC's, clips, spans and types / locations.
- 14** **NEW** NHBC offer a bespoke inspection (Optional for additional fee) - soleplate inspection and kit check.
- 15** Build stages, checks, handover and sign off.

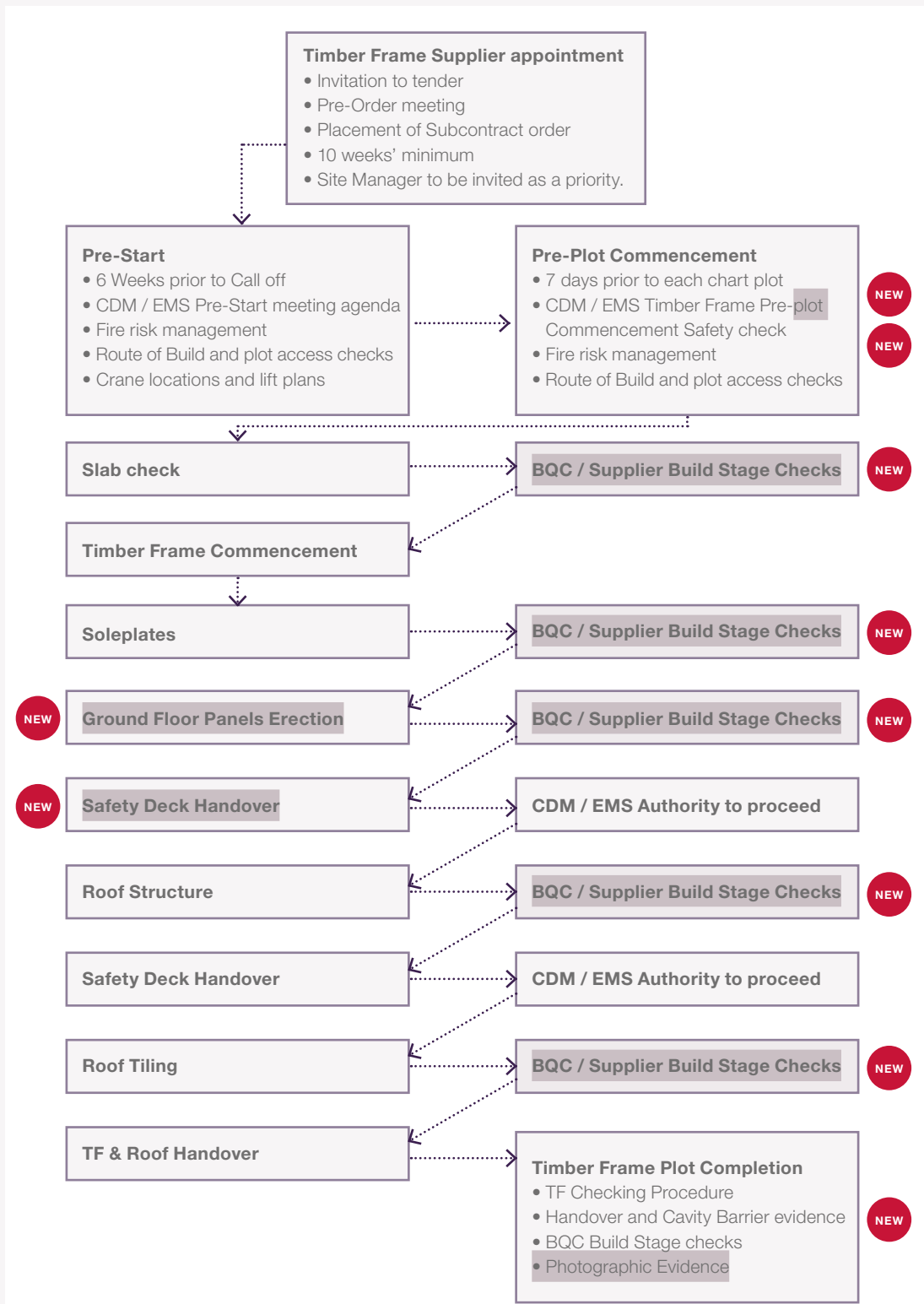


PRE-COMMENCEMENT WORKS

(TW & TF SUPPLIER) PRE-START MEETING

TIMBER FRAME

SAFETY INFO, BUILD ROUTE, ACCESS AND DELIVERIES



All orders, drawings, standard details, RAMS and Pre-Start information must be provided for the SiteM to start the SMPP. Refer to TW Timber Frame Framework Agreement – Procurement Flow Chart.

PRE-COMMENCEMENT WORKS

(TW & TF SUPPLIER) PRE-START MEETING



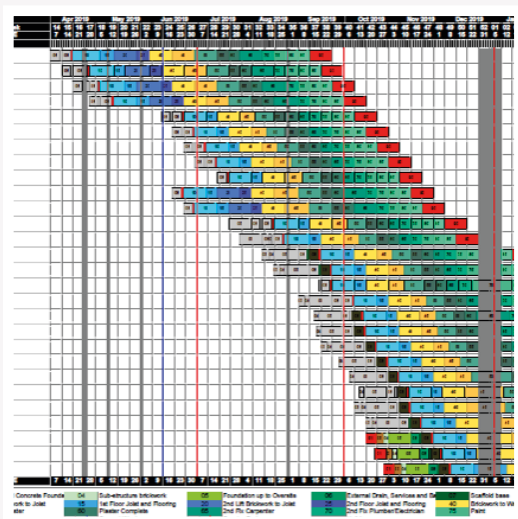
SAFETY INFO, BUILD ROUTE, ACCESS AND DELIVERIES



- 1 Various other approved guidance documents are available. Including 'Site Check', The Timber Frame Pocket Guide and STA 16 steps to fire safety.



- 2 Due consideration must take place at the design stage to ensure access availability to all areas of the site from a suitable delivery vehicle. The site team must provide a build route and agree access, laydown and crane locations with the timber frame supplier. For restricted access, loose joists may be considered.



- 3 The site team must provide a build programme advising the timber frame supplier of the frequency, speed of build and sequence.

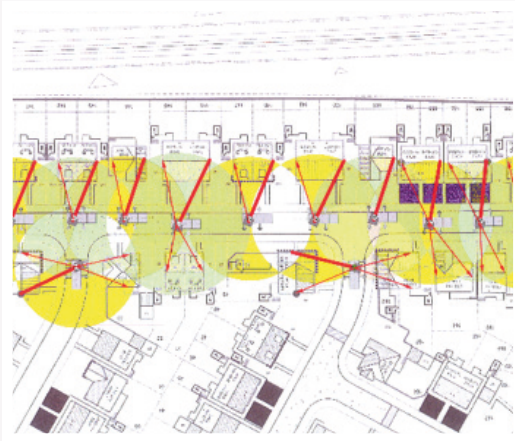
Programmes are subject to change and the timber frame supplier must be notified as soon as practically possible on any changes enabling them to update their agreed delivery programme.

The timber frame supplier must provide an agreed delivery programme and kit erection programme, advising dates and durations.



BUILD ROUTE

CRANE LIFT PLANS, LOCATIONS & LAYDOWN AREAS



- 1 The agreed build route will drive discussions around access, laydown areas, crane set up, sequence and speed of construction. Consideration on a site by site basis between TW, timber frame supplier and the groundworkers on how many plots ahead the slabs need to be. The scaffolder and groundworker must be involved and agree to requirements, well in advance.

- 2 Approved lifting plan and agreed locations must be considered from the outset with the timber frame supplier. Refer to HSE Manual Guidance. Ensure alternative arrangements are made where crane set up may restrict normal access arrangements.



- 3 Road construction must be considered at LPE stage, from a design and budget perspective. California Bearing Ratio (CBR) testing for pads may mean that the road construction or stoned ground will have to be compatible for crane pads.

- 4 Well planned laydown areas must be ready for the timber frame to be off-loaded into a clear space.

Laydowns will definitely be needed. Prior to delivery of the timber frame, there must be clear access and egress to the plot. There should be no immediate hazards or excavations around the perimeter of the plot.

Note:

Artic vehicles are loaded to ensure safe transportation and will not be in sequence of timber frame components.

Note:

Releasing several plots in close proximity at the same time can optimise crane days.

FOUNDATIONS TOLERANCES, SPLASH COURSE, DRAINAGE, RADON BARRIERS, STEPS & STAGGERS



- 1 The timber frame erector will visit site before any deliveries are processed, to ensure the slab is ready for the timber frame to be delivered to site. The timber frame supplier will meet the SiteM and jointly undertake the sign off process.



- 2 The appointed Groundworks Contractor will set out foundations, with thorough checks to comply with building tolerances.

The flooring structure forms an integral part of the structure of the building and must be dimensionally within tolerance.

NEW



- 3 Careful consideration to the gas membrane barrier must be taken during this stage. Lapping detail must be constructed correctly before the timber frame delivery arrives. Extra lapping may be needed between the floor and timber frame. Splash course must be left down below DPC level.

NEW



- 4 Need to be aware of 'as' or 'opposite' plots across the site, to be aware of pop ups in the correct places.

Steps and staggers and DPC tanking need to be considered and built within tolerance, well ahead of timber frame arriving.

Note:

By adding the splash course to the bricklayers package, any deviation in slab or soleplate setting out can be readjusted in the cavity. It is essential that this is left down until soleplates are installed.

Note:

Ensure that perp vents are included within the splash course and are of the correct type. This is a commonly missed item on timber frame sites.

NEW



PLOT WORKS

DRIVEWAYS, KERBS, ACCESS, UTILITIES & DRAINAGE

TIMBER FRAME

NEW



- 1 Drainage and drives need to be in prior to plot works commencing, to ensure a sterilised area for access and lifting the timber frame into the plot.

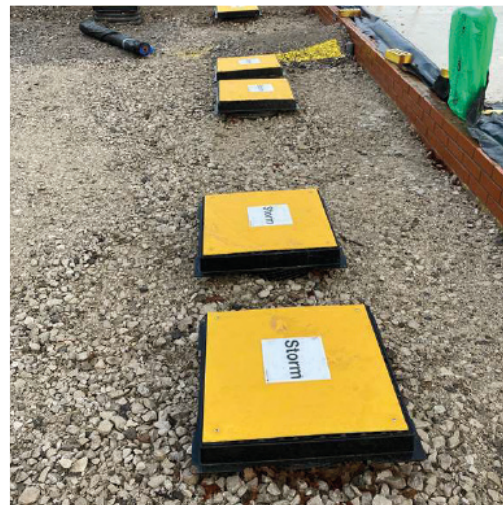
NEW



- 2 All services and drainage should be completed and backfilled, ready for the next stage in the build to commence.



- 3 Flexible joints should be provided when the pipes pass through external walls to the correct dimensions, within 150mm of the substructure wall and then a rocker within 600mm.



- 4 Manholes should be correctly spaced and uniform on the run of plots and positioned in every direction.

SCAFFOLDING

PLATFORM LEVELS, HOP-UPS, SYSTEM TYPE & ACCESS / EGRESS



TIMBER FRAME



- 1 Due to the nature of timber frame erection, all scaffolds must be designed. The Technical and Production departments must agree a design, prior to site start, ensuring designs meet the platform and adjustable hop up levels to suit timber frame as per TW standard details. For more information, refer to HSE Manual Guide.



- 2 There must be access accounted for at all doorways, for safe access and egress of the plot.

NEW



- 3 All four sides of the scaffold must be erected prior to the timber frame arriving on site (ground floor panels may be erected prior to scaffold if required).

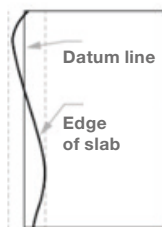


PRE-START INSPECTIONS CHECKS & SIGN-OFF

TIMBER FRAME

Check edges

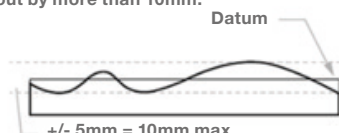
The edge must be within $\pm 10\text{mm}$ of the straight measurement line.



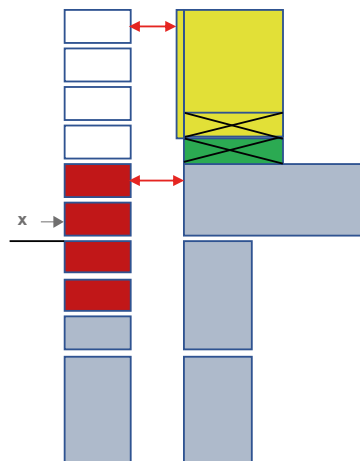
$\pm 10\text{mm max}$

Check substructure level

Concrete slabs must not be more than $\pm 5\text{mm}$ from datum. Over the whole slab, the level must not be out by more than 10mm .



$\pm 5\text{mm} = 10\text{mm max}$



- 1 SiteM will undertake a final review of foundations and check to ensure splash course is left down, below DPC level, to allow brickwork to be built up after timber frame is erected.

Taylor Wimpey **TIMBER FRAME: OFF SITE FIRE RISK ASSESSMENT**

Completed: _____ Site Name: _____
 Design/Technical Director: _____ Date: _____

Under Fire Protection can only be considered if this risk assessment is completed at the Contract Meeting and the Off-Site Fire Risk Assessment is completed as per the appropriate measures are to be proposed to reduce any remaining the safety risk as far as possible.

Off-Site Fire Risk Considerations	Initial Risk Value	Risk Control Measures
Surrounding buildings at risk Are there any buildings, or structures, or other site boundary that could be at risk from fire? If so, what are the buildings/structures? If so, what are the buildings/structures? If so, what are the buildings/structures?		
At risk buildings or structures could include: • Residential buildings • Schools, colleges, universities • Industrial buildings or other facilities (e.g. LTO, etc.) • Transport facilities, i.e. railway station, bus station, car park, etc.		
Off-site fire risk to be assessed in accordance with the Structural Timber Association guidance documents: • Buildings less than 20m (20m) use Product Group 1 • Buildings less than 20m (20m) use Product Group 2 • Buildings less than 20m (20m) use Product Group 3		
Do any of the buildings or structures within the 'at risk' boundary? If so, what are the buildings/structures? If so, what are the buildings/structures? If so, what are the buildings/structures?		
Where sites are close to vulnerable buildings (e.g. schools, hospitals, etc.) there shall be a fire risk assessment in accordance with the Structural Timber Association guidance documents: • Buildings less than 20m (20m) use Product Group 1 • Buildings less than 20m (20m) use Product Group 2 • Buildings less than 20m (20m) use Product Group 3		
Measurements (if required) Are there any measurements taken to buildings that could be used to assess the fire risk? • Substructure on piles • Substructure on ground • Ground level on buildings • Can and additional measures to be considered?		
Revised Off-Site Fire Risk During Construction Rating, after control measures have been implemented?		
Approved with Timber Frame Construction?		
If yes, attach to this report a sketch plan identifying all the structural timber frame construction details and the fire risk assessment from the Timber Frame buildings under construction.		

Signed (Technical Director): _____ Date: _____

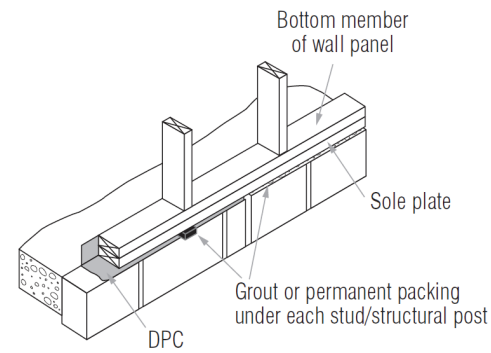
References:
 • STA - 16 Steps to Fire Safety on Timber Frame Construction (2016)
 • STA - Design Guide to Separating Distances during Construction (Product paper 6 for buildings under construction)
 • STA - 16 Steps to Fire Safety on Timber Frame Construction (2016)
 • STA - Design Guide to Separating Distances during Construction (Product paper 6 for buildings under construction)

- 2 SiteM will review fire escape plans and compliance with the Structural Timber Association (STA) 16 Steps Fire Safety Guidance and if required, check to ensure a fire risk assessment has been undertaken.



TIMBER FRAME ERECTIONS

SUPERSTRUCTURE (TF SUPPLIER) – DPC & SOLEPLATES



(maximum allowable packing is 10mm)

- 1 DPC & Soleplates** – Prior to 1st delivery:
A survey should be undertaken to survey and record slab dimensions and coordinates, to check levels along all external, party and load-bearing walls. With close attention paid to the diagonal square across the full slab.

NEW

- 2** Where packing under a soleplate is required, the packing option to be adopted should be detailed on the construction drawing. Three common options are:
- Permanent structural packing under sole plate.
 - Bedding of sole plate.
 - Double sole plate with packers installed between.

Of these the commonly used option is permanent packing under the sole plate.

Reminder:

Ensure that the roof contractor is programmed to follow immediately on after the Timber Frame is finished.

Ensure that the window fitting has been called off in advance to follow the roofer. benefits of timber frame will be lost if these tasks are only booked when the timber frame is completed (adding in a potential week or two delay per plot).

Measure diagonals against timber system layout.



Acceptable deviation
+/- 5mm up to 10m
+/- 10mm over 10m

Measure lengths of walls



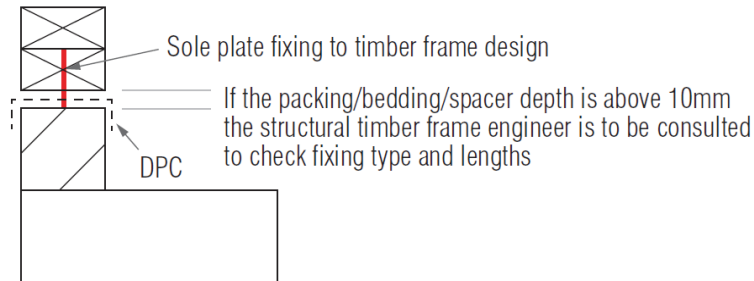
Must be within +/-10mm of the dimension shown on drawings



TIMBER FRAME ERECTIONS

SUPERSTRUCTURE (TF SUPPLIER) – DPC & SOLEPLATES

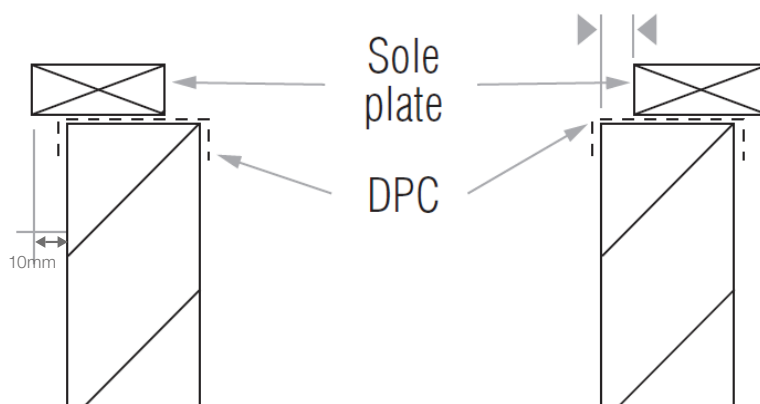
TIMBER FRAME



- 3** Be aware that materials used for levelling sole plates may not be adequate for load transfer. Full support must be provided before construction proceeds beyond ground floor wall panels. Packing can be:
- Free flowing non-shrinkable grout along the full length and width of the sole plate.
 - Individual durable robust packers placed under the full area of each load point.

The packing / bed must:

- Support each stud.
- Be durable and have suitable resistance to moisture.
- Not deform under load.
- Maintain the DPC between packing and plate. Lap DPC a minimum of 100mm up inside face.



- 4** If the packing / bedding / spacer depth is greater than 10mm, the timber frame engineer is to be consulted to check fixing type and length. When the foundation edge is set back or extends beyond the sole plate is greater than 10mm, the TF engineer is to be consulted to check whether the erection can take place.

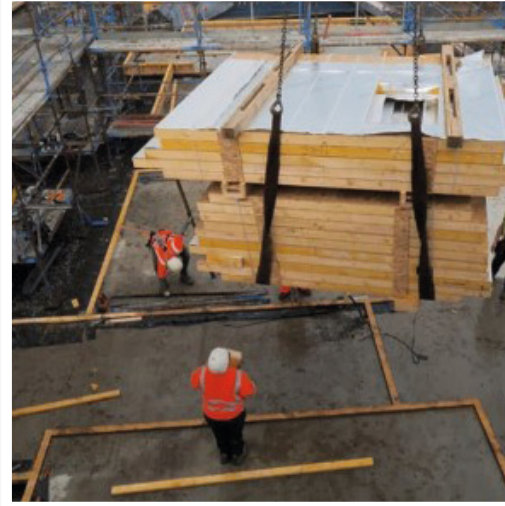
TIMBER FRAME ERECTIONS

SUPERSTRUCTURE (TF SUPPLIER) – DPC & SOLEPLATES



5 Deliveries, crane set up and offloading:

Careful management of delivery vehicles and laydown areas, is required on site for efficient and safe sites. On lift day, alternative arrangements should be planned where deliveries and crane position may affect normal traffic management routes.



6 Ground floor walls – The first element of the timber frame which is craned in, is the wall panels. All timber frame erectors will be in the plot ready to receive the first load. The erectors must be STA accredited.



7 Ground floor walls – Stud partitions are nailed into the soleplate according to the fixing detail. All internal wall bracings and corners are fixed and plumb ready for the next stage.



PRE-FINISHED CASSETTES

PLASTERBOARD SLOT & STAIRWELL PROTECTION

TIMBER FRAME



- 1 The floor panels are installed using pre-fitted lifting slings which are removed from the underside.



- 2 Cassette tolerances and setting out will be checked to ensure no overhang into brickwork cavity and stairwell apertures line through. When using loose joists temporary internal fall protection (TRAD deck) is installed. Internal non load bearing walls will be loaded into plot to allow later installation.



- 3 Cranking tools allow the timber erectors to fit cassettes flush and level on the top, to prevent bumps and maintain the structural integrity of the timber frame. Screws are used to draw the cassettes tight and flush, to agreed detailing.



- 4 Stairwell fall protection infill panels are designed into the timber frame floor cassettes. Airtec safety handrails are supplied and erected around the stair opening by the site team.

FIRST FLOOR WALLS

EXTERNAL, LOAD-BEARING & PARTY WALLS



TIMBER FRAME



- 1 The timber frame erectors will continue to install the upper floor external, load bearing and party walls. Temporary bracing is installed to stabilise the timber frame structure, to approved details and fixings, supplied and fitted by the timber frame supplier.



- 2 Walls are completed and internal non load bearing walls loaded into the building, ready for installation afterwards.



- 3 The site team must ensure the scaffold platform is the correct height for fitting the fascia and soffit as per TW standard details.



SAFETY PLATFORM TRAD-DECK (OR SIMILAR)

TIMBER FRAME



- 1 Roof level safety decking is supplied by the site team for the timber frame supplier to install. If part of the timber frame contractors package, they will install internal fall protection (TRAD Deck / Rhino deck).



TIMBER FRAME PRE-LOT COMMENCEMENT SAFETY CHECKLIST

SITE NAME: _____

Location of Work: _____

Timber Frame Erection Supervisor: _____

Note: This is a specialist activity. During the lifting and placing of timber frame panels, no other non-related trades are permitted within any established exclusion zones

- Initial Site Pre-Start Meeting carried out

Exclusion

- Method of unloading delivery vehicles established and agreed
- Location of delivery off loading and lay down areas confirmed

Traffic Management

- Off-site traffic management route confirmed, illustrating constraints
- On-site traffic management route confirmed including any temporary diversions
- Provision routes confirmed including any temporary diversions

Ground works

- Crane base and haul roads established as per lifting plan/design requirements

Lifting Plan

- Lifting Plan completed
- Exclusion Zones established
- Lifting Sequence agreed

Work at Height Controls

- Perimeter Scaffold inspected and ready for access and complete with internal handrails
- Proprietary decking system available and ready for installation

Timber Frame erection

- House type specific lifting and bracing detail available

Fire and emergency procedures

- Access and Egress routes planned and confirmed
- Lifting Exclusion Zones created and detailed on traffic management plan
- Segregation method established e.g. Heral's fencing
- Fire Plan in place and reviewed
- All fire procedures available and ready for installation

Issued by: SMTS
Certificate No.: JF003
Issue Date: 20/06/2018
Expiry Date: 19/06/2019
We certify that: TAUUVYDAS DREMEIKA
Company: Bunnham Carpentry
Has been trained to a competent level in the Safe Erection, Dismantle & Inspection of the TRAD Safety Deck System
Trainer: Jon Nemo

CP Construction Plant
Competence Scheme
MR S SAMPLE
Registration No: 89110071
Engine End Sea Over
TRAINED OPERATOR

- 2 The site team must follow the specific TW sign-on / sign-off procedure, for the transfer of safety decking responsibilities between the site team and Timber Frame supplier. All installers must be trained and competent.

- 3 Safety decking will need to be installed around and between non load bearing wall partitions stacked vertically or horizontally in the plot. Adjustable legs may be required to accommodate sheet materials.

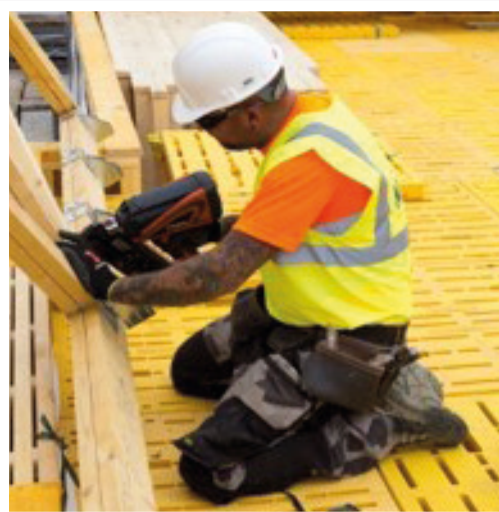
TRUSSED ROOFS GABLES, LADDERS, EYEBROWS, BRACING & UPVC FASCIA AND SOFFIT



TIMBER FRAME



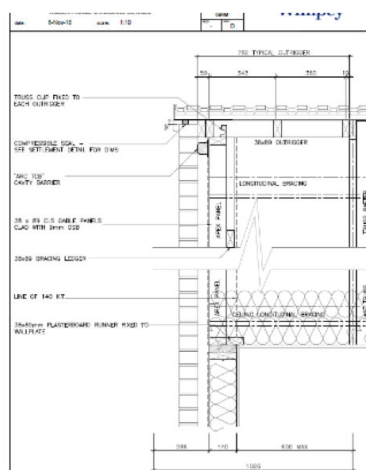
- 1 Trusses can be loaded into truss racks prior to construction of plot, or trusses will arrive on site for the timber frame supplier to erect.



- 2 Trusses should be installed as per manufacturers guidance.



- 3 Fixing of high level bracing, including spandrel panels, needs specific STA type ladder or designed access platform.



- 4 The SMT should check to ensure the correct eaves and verge option is being used.



STAGE 1: INTERIM HANDOVER

TIMBER FRAME

A CHECKLIST SHOULD BE COMPLETED THAT CONFIRMS THE BELOW:

FOUNDATIONS

- 1 Once the substructure is complete, the plot can be inspected and interim sign off agreed with the timber frame supplier. This will allow the SiteM to book in the next set of trades to continue build on the plot.

- 2 Prior to the fitting of the soleplate / wallplates has the foundation / concrete slab been checked for dimensional and level accuracy?

- 3 Has all DPM / DPC been fitted to the soleplates / wallplates as per site specific details?

- NEW 4 Have soleplates been secured to the slab by fixing in accordance to the design.

- 5 Have soleplates been secured to the slab at each side of doorways?

- NEW 6 Has the soleplate been appropriately packed, if required?

- 7 Do the soleplates need structural grout installed between the slab and the DPC?

GROUND FLOOR EXTERNAL WALLS AND PARTY WALLS

- 1 Are all panels plumb, straight and aligned at junctions?

- 2 Have packers been filled under all studs where required?

- NEW 3 Are panel junctions tight together and have been nailed together correctly in accordance with manufacturers' fixing schedule and as per detail?

- 4 Have all vertical breather laps been securely stapled down, all tears correctly patched as per patching detail and trimmed back to a minimum of 25mm overhang at the soleplate level?

- 5 Have load in materials been located in the correct areas?

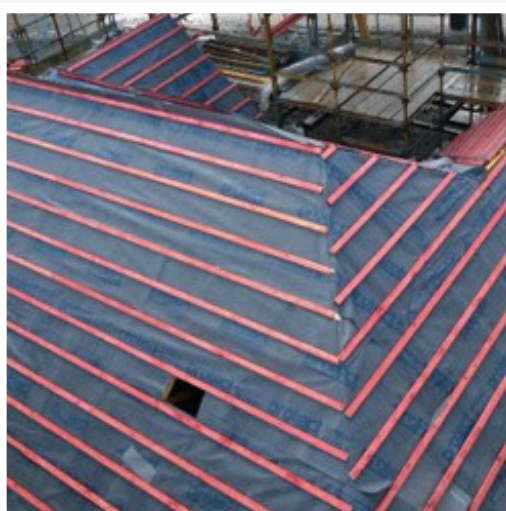
- 6 Have the correct number of internal non-load bearing panels been loaded into the plot?

- 7 Are the headbinders lapped correctly at the corners and at internal load bearers?

FELT & BATTEN, WINDOWS & DOORS AND REMOVAL SAFETY



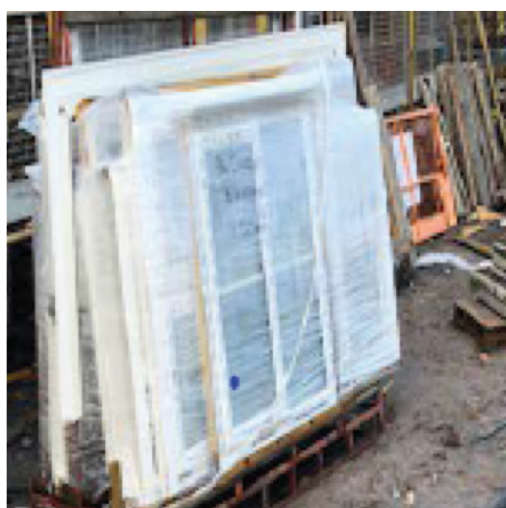
TIMBER FRAME



- 1 Site management teams to arrange trades prior to the completion of the timber frame structure. Roofing contractor to be ready to commence roof works to felt and batten roofs.



- 2 Once the roof is complete the timber frame supplier or site team will dismantle and remove safety decking.



- 3 Site management teams to arrange trades for fitting the stairs, windows and doors once safety decking has been removed.



- 4 Once this is reached the timber frame is structurally complete, wind and watertight and secure, ready for fitting cavity barriers and return visit for internal works to start.



INTERNAL WALLS

NON-LOADBEARING PARTITIONS & STAGE

TIMBER FRAME



1 When the main structure of the building is in place and the safety deck is removed, the non-loadbearing internal walls can be erected. Plot can be finally signed off by the timber frame supplier. The SiteM will need to coordinate further return visits.

2 Inspection and Snagging: After the internal fall protection is out and the internal load bearing walls are complete, the plot will be checked by the timber frame supplier, using there own quality checklists. Any remedials will be made good.



3 STAGE 2 FINAL HANDOVER
Once all quality assurance checks are complete, the plot will be jointly inspected and signed off by the timber frame supplier and the site team, in accordance with TW BQC.

ROOF CASSETTES

(R-IN-R-TYPES) – PURLINS & SPANDRELS



TIMBER FRAME



- 1 The timber frame supplier will supply and erect roof cassette system, similar to 2½ storey homes built in masonry construction.



- 2 TW supply the internal podium safety platform for installation of the top hat roof. Pre-insulated and plaster boarded top hats on the peak of the room in the roof are supplied and fitted by the timber frame supplier.

On party walls, ensure suitable fire lining around the roof beams where they intersect the fire rated plasterboard.

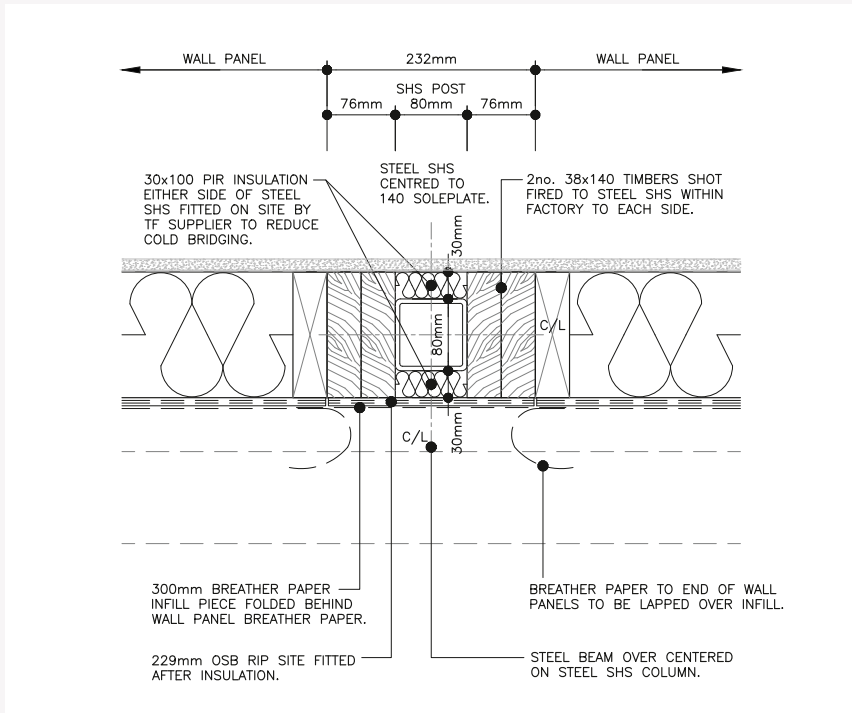


BRICKWORK SUPPORT

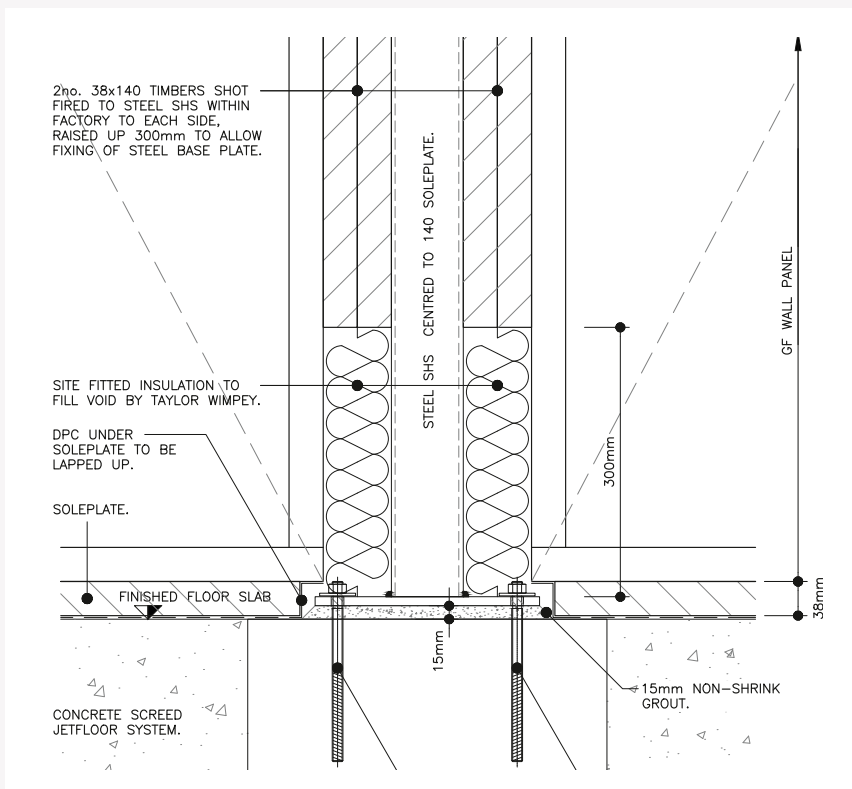
STEEL GOAL POSTS WITHIN TIMBER FRAME



TIMBER FRAME



- 2 All steelwork above DPC should be protected from the cavity with breather membrane and should come pre-finished in red oxide.



- 3 It is important insulation is fitted front and back to avoid cold bridging during the timber frame installation process. All steelwork lifting must comply with approved RAMS.



ACCESS / EGRESS

FIRE ESCAPE & MATERIAL LOADING

TIMBER FRAME

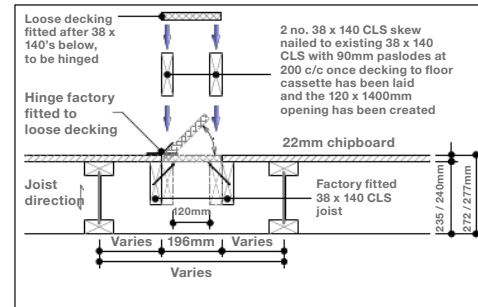


- 1 Every plot has a removable sub-panel designed into the timber frame below a window aperture, to allow access / egress and for materials.



- 3 Stairs should be supported by temporary fixings, goal posts and a timber retaining block fitted against the bottom riser during construction. After plasterboarding, the staircases are mechanically fixed as per the stair manufacturers instructions into the timber studs.

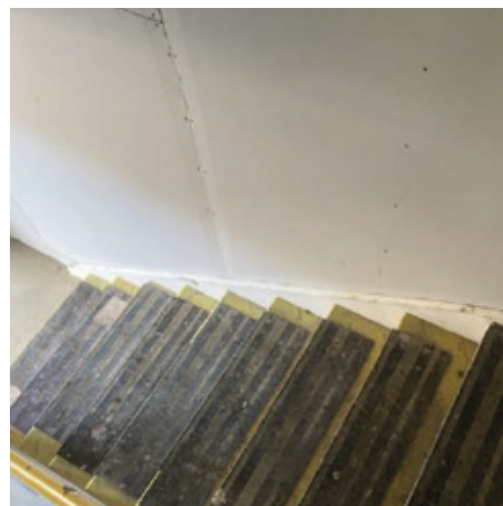
SECTION A-A – SLIP THROUGH DETAIL



- 2 Homes with winding or half / quarter landing stair designs, will have a preformed slot built into the floor cassette to allow feed of plasterboards from ground floor to first floor level.

Note:

Plasterboard could be loaded during construction through scaffold.



CAVITY BARRIERS & FIRE-STOPPS

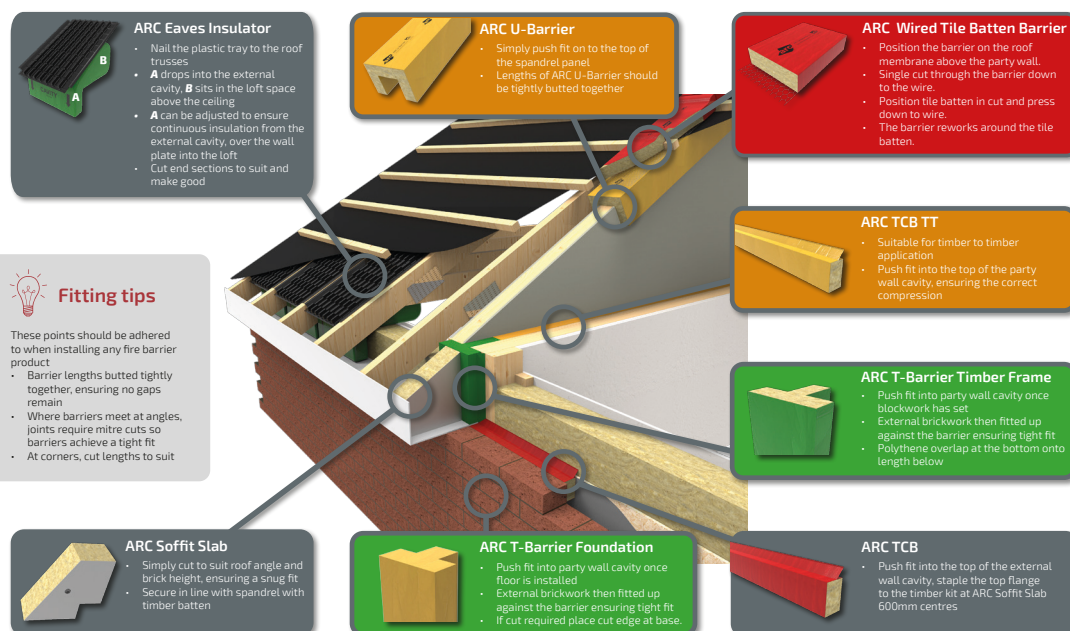


FIRE STOPPING AND CAVITY BARRIER LOCATIONS – TIMBER FRAME CONSTRUCTION – ENGLAND AND WALES

NEW

ARC Fire Stopping System at the Party Wall & Eaves

TW Timber Frame with Single Spandrel



Sales and technical advice:

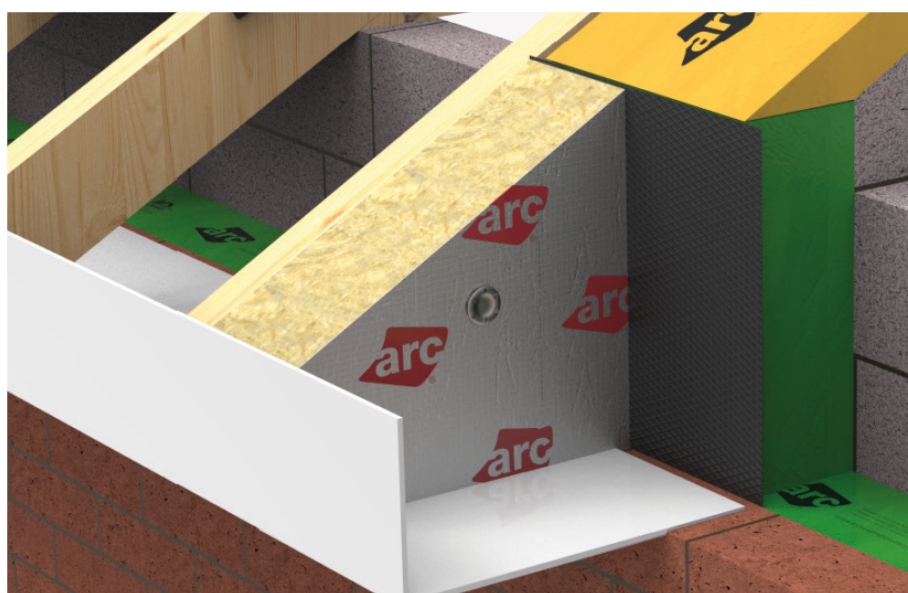
t 0113 252 9428

e sales@arcbuildingsolutions.co.uk

w www.arcbuildingsolutions.co.uk

ARC Soffit slab

NEW



NEW

* This is a guide for the products to be installed but please refer to individual product data sheets.



CAVITY BARRIERS & FIRE-STOPS

TIMBER FRAME



- 1 Fix the timber firestopping contractor will supply and fix the timber firestopping around the windows.

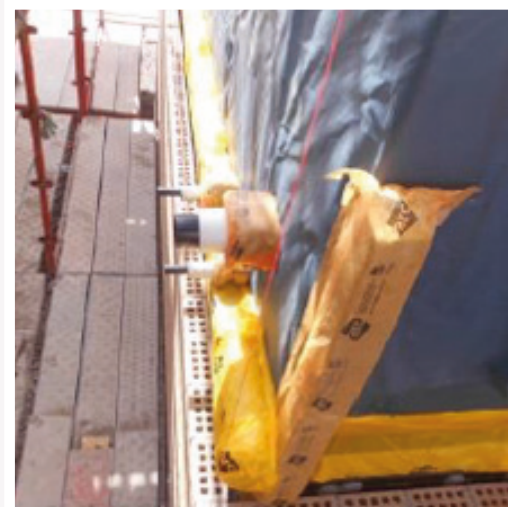
NEW



- 2 The timber frame supplier must provide photographic, digital or paper evidence per plot, that cavity barriers and firestops have been fitted in compliance with requirements. This will be provided to the site manager for filing with the TW plot record book / file.

Firestop and Cavity Barrier Checklist		STEWART Milr	
Check List	Yes	No	Comments
Have all Compartment walls been fixed as shown on the drawings		<input checked="" type="checkbox"/>	
Have all temporary fix doors been fixed as shown on drawings		<input checked="" type="checkbox"/>	
Have all fix doors been closed off to prevent air flow		<input checked="" type="checkbox"/>	
Have all possible cavities been removed from the building	<input checked="" type="checkbox"/>		
Have all cavity materials (blocks) been removed from the building	<input checked="" type="checkbox"/>		
Have the Building Down Mode Secure (a.k.a.)			
Windows fixed and sealed up	<input checked="" type="checkbox"/>		
Close or temporary doors with lock fixed at entrance points	<input checked="" type="checkbox"/>		
Close the site from security fencing around the perimeter	<input checked="" type="checkbox"/>		
Are there adequate and suitable types of the construction available throughout the building and located at right angles to the cavity. There must be a seal at each floor level and at intervals of no greater than 100 metres	<input checked="" type="checkbox"/>		
On each floor of the building the maximum number from the place of origin to the outside of the building cannot exceed 30 metres	<input checked="" type="checkbox"/>		
Are all escape routes free of obstructions to ensure efficient escape	<input checked="" type="checkbox"/>		
Are temporary building off-site doors fixed at least 10 metres away from the building	<input checked="" type="checkbox"/>		
Sign and date on completion			
Signed on behalf of Sub-Contractor		Date 18/3/19	
Signed on behalf of Stewart Milr		Date 19/3/19	
CONSTRUCTION Page 2 of 2 STEWART Milr Firestop and Cavity Barrier Checklist			

- 3 The site team sign off and retain records in the plot file. Follow on trades must be monitored to ensure firestopping remains in place and is fit for purpose. If issues are seen, then they must be rectified to ensure firestopping integrity is maintained.



- 4 The timber frame supplier or kit erection team must ensure the correct products are used and fitted in the correct position. It is important that there are no gaps and butt joints are lapped and continuous.

NEW

CAVITY BARRIERS & FIRE-STOPPS



NEW



- 1** Around apertures, the timber frame supplier or contractor where supply only is to fit is to fit timber firestops to the face of the timber frame, on all four sides.

The SMT need to ensure windows and doors are fitted tight and appropriately sealed with DPC to face, settlement detailing and weather sealed.



- 2** TW are responsible for firestopping around service and utility penetration. e.g. gas flues, gas risers and meter boxes.



- 3** Any small gaps in the timber stops should be sealed with fire rated mastic.

The timber frame supplier must install timber firestops around all windows and door apertures. TW site team must ensure DPC is fitted to face of firestops and over the check reveal.



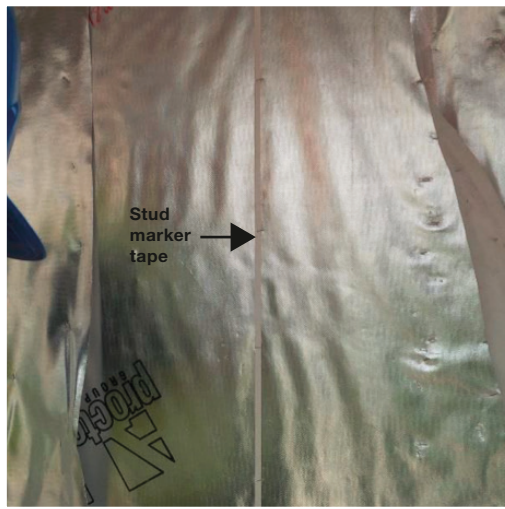
- 4** Cavity socks must be fitted to all masonry walls to restrict the spread of smoke and flames within external masonry walls and to further minimise the effect of flanking noise pollution at wall junctions.

Barriers should be abutted together tightly with good detailing at external corners where the socks were installed starting at each corner to ensure a square profile is maintained with mitres cut at spandrel panels to ensure the full bag width butts together.



BREATHER PAPER & LAPS

TIMBER FRAME



- 1 Breather paper allows moisture to escape and prevent water getting into the timber frame. All rips and tears must be patched in accordance with details.



- 2 Breather membranes come pre-fitted to panels, with folds formed. These must be folded and stapled neatly and tightly around corners, panel junctions and floor zones, to provide a seamless covering.

Note:

Stud marker tape (highlighted on photo) allows the bricklayer to align wall ties. All wall ties must only be fixed into timber studs.

NAILING, FIXINGS & IRONMONGERY



- 1 All fixings should be installed to the correct schedule and places at the correct distances. A fixing schedule will be provided to assist checking. Nails must not protrude.



- 2 All structural ironmongery such as joist hangers, truss clips, strapping must be fully nailed. Floor cassette junctions must be screwed top and bottom, from either side.

NEW

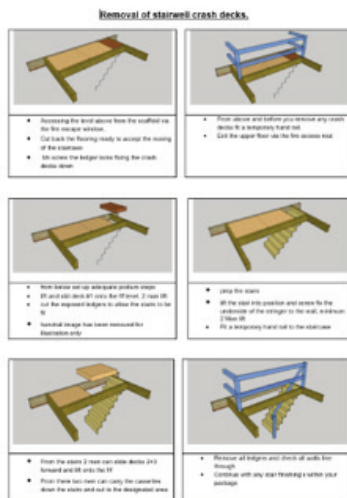
Loose joists must be fixed in accordance with the manufacturer's schedule.

RECYCLING, CHECKS, HANDOVERS, SIGN-OFFS & RECORD KEEPING

A photograph showing a pile of scrap materials. In the foreground, there are several light-colored wooden planks or beams. Behind them, there are pieces of cardboard or paper with blue and black text, including the word 'berdek' and 'BAA'. There is also some metal debris, including a piece of a metal box or container. The background is dark and indistinct.

[illegible]

- NEW



- NEW



- 100

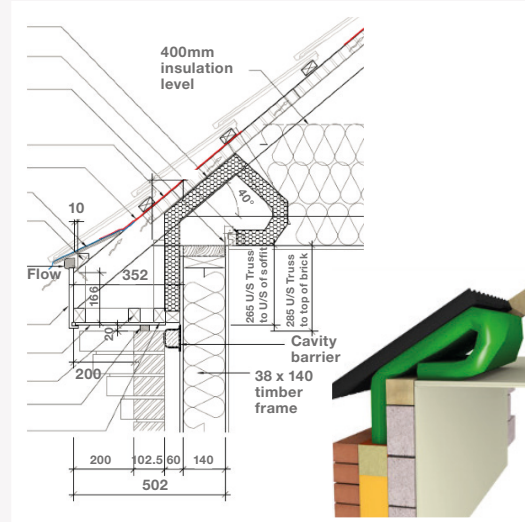
BUILDER WORK – KEY CONSIDERATIONS (TW ONLY)



THERMAL INSULATION – TOLERANCES, TYPES, SPECIFICATIONS, COLD SPOTS, LOCATIONS AND CONSIDERATIONS



- 1 Thermal Insulation must be fitted tightly into voids and adjacent timber work, where specified. There should be no gaps greater than 5mm.



- 2 Timber frame suppliers are responsible to supply and fit the ARC eaves ventilation and insulation barrier at the eaves pinch point.



- 3 Insulation should not be compressed. Insulation must be packed tightly into corners behind the rotated studs, to avoid cold bridging.



- 4 It is important to use the correct insulation for the differing applications and locations within the plot. Please refer to TW insulation schedules and product labels to select the correct material.



BUILDER WORK – KEY CONSIDERATIONS (TW ONLY)

TIMBER FRAME

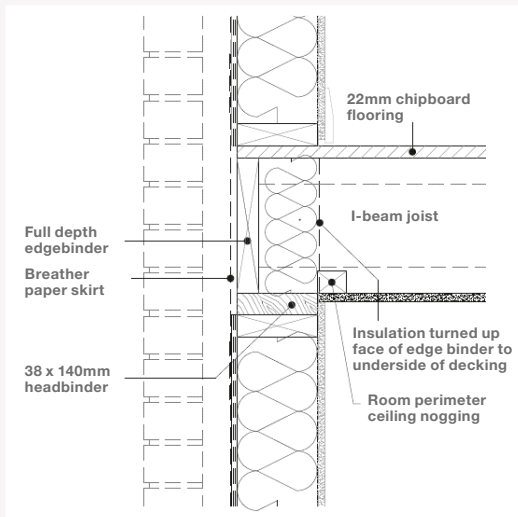
THERMAL INSULATION – TOLERANCES, TYPES, SPECIFICATIONS, COLD SPOTS, LOCATIONS AND CONSIDERATIONS



- 1 Insulation must be fitted behind and around pipe boxing to deaden the sound of water flows. Ensure all internal partitions around wet rooms are insulated to reduce noise.



- 2 Insulation should be correctly stored in the compound on site, or ideally loaded into the plot. All insulation must be protected to ensure it does not get wet. Do not use wet or damaged material.



- 3 Insulation must be site fitted within the floor cassette at perimeter detailing, to prevent cold bridging and draughts, within the mid floor zones.



- 4 All insulation should be fitted behind the First Fix services. Cabling fitted to front face should be identified by foil tape, before boarding. Where cabling runs through studs permissible drilling zones should be observed. Metal guards should be fitted to protect services, metal brackets should be fitted to protect them.

PARTY WALL INSULATION

SPECIFICATION, MATERIALS, DENSITY, LOCATIONS & CONSIDERATIONS



Separating Wall – Timber Frame E-WT-2

CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes	No	Inspected
		(✓)	(✗)	(initials & date)
1.	Are wall linings at least 240mm apart?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are sheathing boards at least 50mm apart?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are stud frames at least 60mm apart?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Is absorbent material at least 60mm thick?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Does absorbent material cover whole lining area except above ceiling line in roof voids?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Are all joints in wall lining staggered?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Is separating wall lining correct mass per unit area on both sides?	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are all joints sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Are services installed in accordance with sketches 9.1 and 9.2?	<input type="checkbox"/>	<input type="checkbox"/>	
10.	If there is a separating floor (e.g. in flats/apartments) has the roof/floor flanking strip been provided?	<input type="checkbox"/>	<input type="checkbox"/>	
11.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	

Notes (include details of any corrective action):

Site manager/supervisor signature: _____

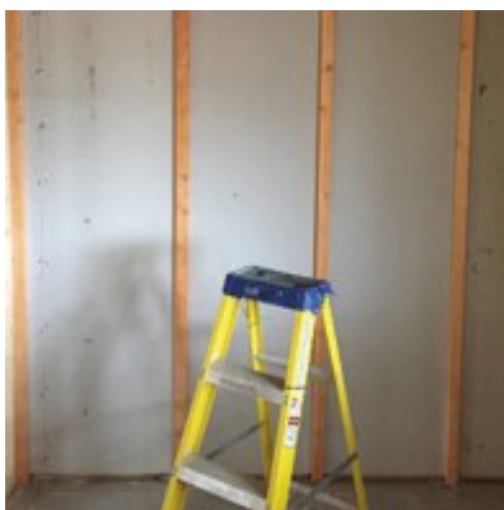
© All rights reserved under mark no. 2220462
© Robust Details Limited 2017. All rights reserved. No part of this publication may be reproduced in any material form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without prior written permission in writing from Robust Details Limited except in accordance with the provisions of our Copyright, Design and Patents Act 1988.
Warning: the design of an unapproved party wall may result in both a civil claim for damages and criminal prosecution.

robustdetails The party walling in timber-framed buildings **Part 2: Timber Frame** 8 of 8 **Edition 4** January 2019 Update

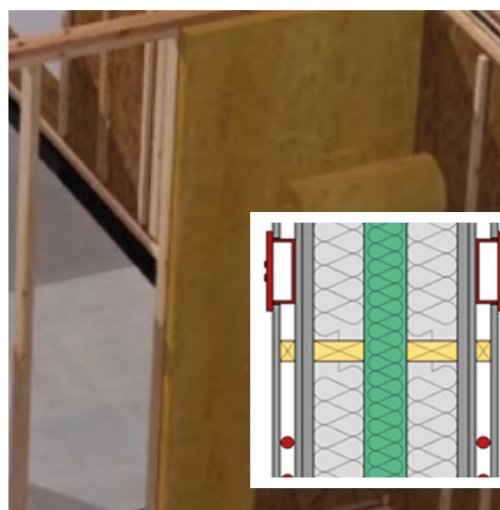


1 Timber frame party walls must comply with E-WT-2 Robust Details requirements. Walls are fully OSB sheathed there entire length, each side. Timber frame suppliers will supply and fit party wall cavity insulation. A DPC should be fitted at head, to prevent water ingress during timber frame erection.

2 The party wall is denser for acoustic reasons. The internal studwork insulation must be minimum 16 kg / m³ density (i.e. superglass TF party wall roll or similar). The site team must check to ensure the correct material is used. Do not use normal low density thermal insulation.



3 Services must not penetrate or be fitted behind the plasterboard layers. Two layers of acoustic boarding are required, with minimum density of 22 kg / m². Sacrificial service battens are fitted to areas requiring services to be installed.



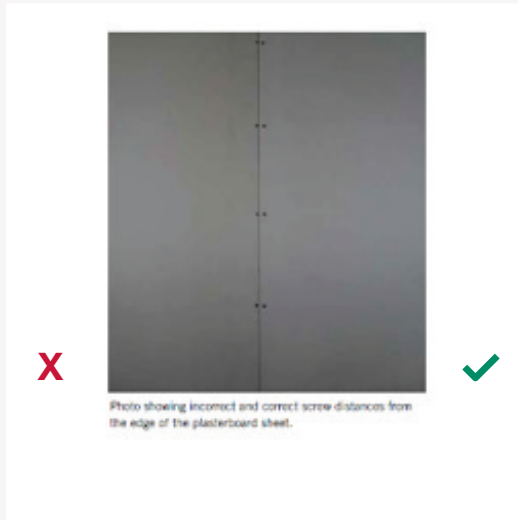
4 At steps, staggers and floor zones, the timber frame supplier must ensure cavity insulation is continuous. Cavity barriers must be fitted along head party wall at ceiling levels and underside of roof felt, by the timber frame supplier.

In Scotland, services are not permitted in separating walls. Additional timbers may be added to create a void on top of the plasterboard.



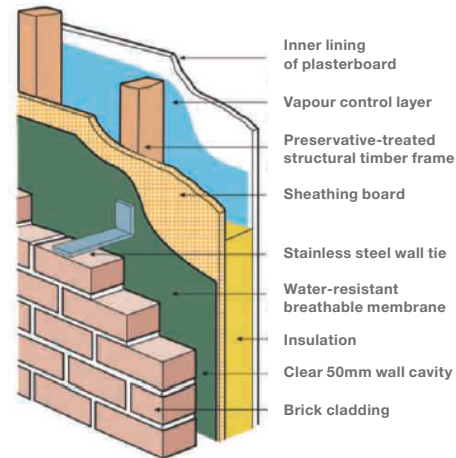
DRYLINING, MOISTURE CONTROL & WEATHER SEALS

MOISTURE, FIXINGS, BOARD TYPES, SPECIFICATIONS AROUND APERTURES AND THROUGH STAIRWELLS



- 1 Plasterboard provides fire protection to the home. It must be fixed in accordance with the board supplier's requirements. Screws should not be overdriven and fixings should be at the correct centres and edge distances. Boards must never be fixed to timbers greater than 15% moisture content.

External wall and brick

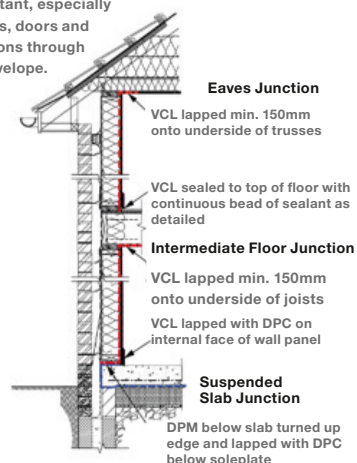


- 2 Steel must have a VCL fitted as per design.

NEW

Continuity of the airtightness barrier is important, especially around windows, doors and other penetrations through the external envelope.

Key VCL details



- 3 VCL can be either be 500g membrane or foil backed plasterboard. When using a membrane, it must be lapped at all joints and behind ceiling boards. A VCL is not required on ceilings or party walls.

VCL checklist

- ☐ A VCL is on the warm side of the insulation, applied beneath the plasterboard lining
- ☐ VCL will be a separate polythene sheet
- ☐ Do not install VCL if moisture content of framing is above 20%
- ☐ VCL is a 500 gauge / 125 micron polythene sheet with 100mm laps at joints and fixed with stainless steel staples at max 250mm centres
- ☐ VCLs to overlap into separating walls, ceilings and floor. Return VCL into reveals, head and sill of openings, as per details
- ☐ Repair damaged VCL with tape to ensure airtight and vapour control is maintained. Seek advice on repairs

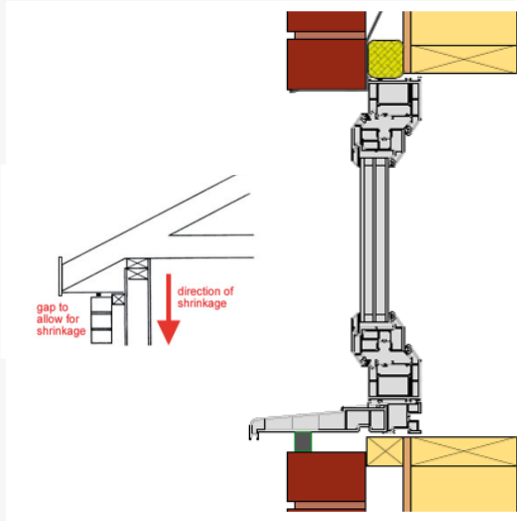
VCL CHECKLIST WHEN NOT USING FOIL BACKED PLASTERBOARD

- 4 Vapour control layer (VCL) or foil backed plasterboard to be installed where specified.

The site team must complete a VCL check before drylining starts. Any services penetrations through VCL should be taped, sealed and neat. VCL's must never be fitted if the timbers are over 20% moisture content.

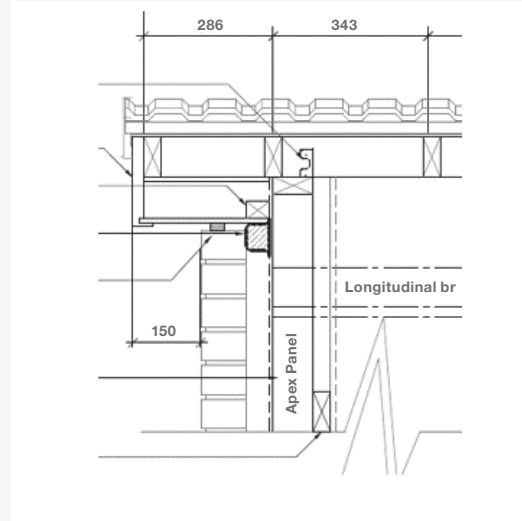
VERTICAL SETTLEMENT

EAVES, VERGES, APERTURES & PENETRATIONS

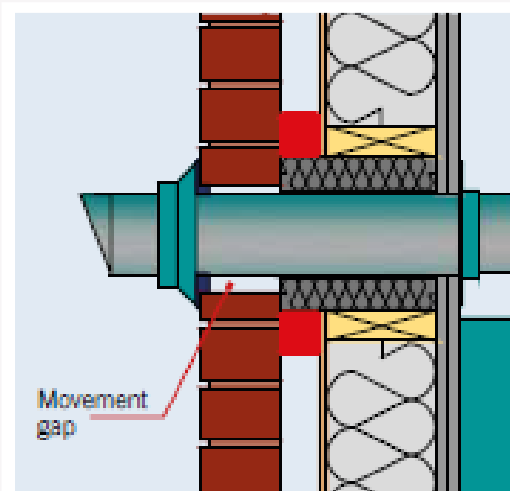


- 1** Due to its nature, timber will shrink across the grain. This happens at floors and top / bottom of walls. TW allow 10mm per storey for settlement provision at key areas. All apertures must have a settlement gap / cover at head and sill level, with brick / block cladding.

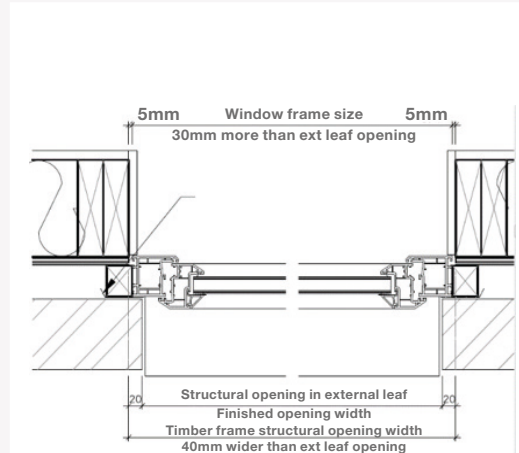
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- 2** Soffit and verge construction must allow for settlement gaps, identical to aperture provisions. All settlement gaps must be sealed with a flexible weather seal, such as compriband or similar. The site team must check compliance.



- 3** All service penetrations, such as boiler flues, must provide settlement allowance. These must be sealed with a flexible weather sealant, similar to windows, doors and rooflines.



- 4** Windows and doors must be fitted flush with the back face of the brickwork and use a check reveal. Windows and doors must never project into the brickwork reveal.



SERVICES INSTALLATION THROUGH STUDS, RAILS & JOISTS

TIMBER FRAME



- 1** First Fixing in timber frame is similar to traditional build. All drilling must be done through centre of joists, dwangs / noggins or studs in accordance with the manufacturer's permitted zones. It is possible to drill through the floor joist edge binders and top / bottom rails for services, within agreed limits.



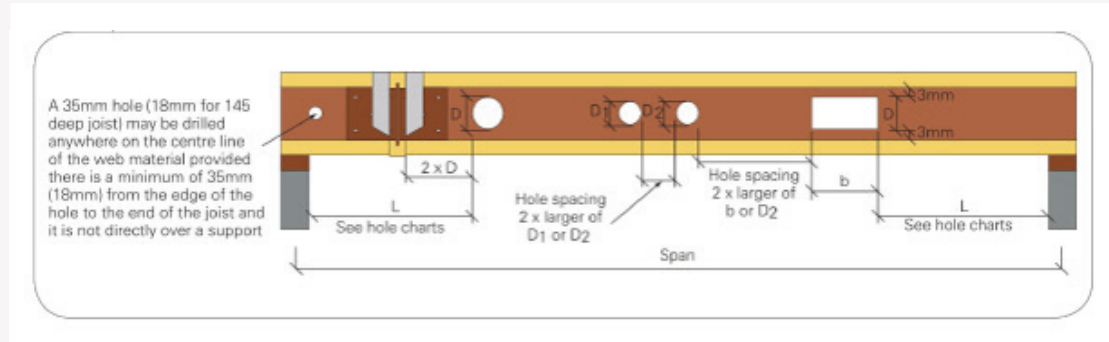
- 2** Cabling must run through the timber frame stud void, drilled in accordance with manufacturers' boring zone guidance. Metal guard plates must be fitted to avoid home users accidentally puncturing cables. Avoid cutting notches in rails, as this could weaken the timber frame superstructure.

- 3** Ventilation ducting must run within the floor zone or within ducts below ceiling level.

The site team must ensure plasterboard ceiling fire integrity is maintained, where ducts penetrate the drylining.



SERVICE HOLE HELP DIAGRAM



- 1 Service holes and notches within the timber frame must comply with TW guidance and agreed detailing. Never cut timbers if unsure. Never cut holes or notches greater than guidance.

The standard timber frame house type range, have been designed to avoid clashes with large ventilation ducts, boiler flue outlets and wet room waste pipework.

If a larger hole is required, specialist advice must be sought before work commences.



- 2 The timber frame studwork must avoid boiler flue locations.

OSB sheathing can be drilled to accommodate hot flue outlets. A mineral wool fire collar or similar must be fitted, to maintain fire protection.



GAS & UTILITY SUPPLY

PIPEWORK, RISERS, METER BOXES & DUCTS

TIMBER FRAME



- 1 Gas feed pipework to boilers must be boxed in and not on the face of the timber frame wall.

This is an NHBC requirement and must be in accordance with TW agreed details.

Vertical gas feed pipework must be centred in the panel, a min. 50mm from face of plasterboard and OSB. This reduces the possibility of future accidental puncturing. The pipe must be securely clipped into position at regular centres.

Ensure that the gas supply void is less than 100mm x 100mm otherwise the voids needs ventilation as per BS6891.



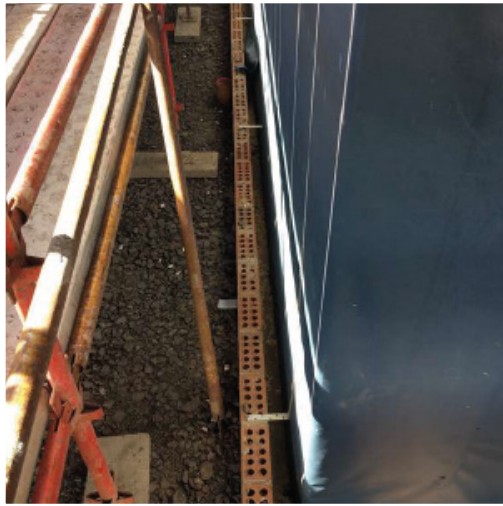
- 2 All gas installation within timber frame methods must comply with Gas Safe Technical Bulletin 113 and IGEM Gas Utilisation Procedures IGE / UP / 7 Edition 2. Gas pipework can be built within upper floors, but must comply with agreed TW detailing.



- 3 Electric meter board should be fixed to a non-combustible fire-board backing, as good practise.

External wall mounted electric or gas meter box installations should have firestops fitted on all sides, as good practise.

EXTERNAL BRICKWORK WALL TIES, MOVEMENT JOINTS, CAVITY WIDTH, LINTELS, TRAYS & PERPEND VENTILATION



- 1 Wall ties and fixings must be stainless steel. Locations (centres and coursing height) must be in accordance with agreed details and brickwork design information. Timber frame is designed to suit brick coursing, but some cutting will be needed.

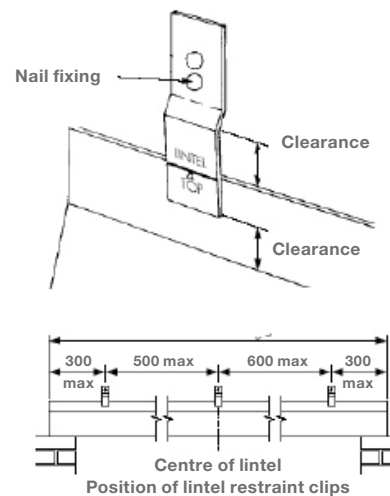


- 2 Studwork marker tapes are fitted on the timber frame panels. This indicates the studwork fixing position for the wall tie. Wall ties must be nailed to studs or edge binders. Never fix wall ties to OSB only.

NEW



- 3 Perpend ventilation must be fitted in accordance with NHBC requirements. This ventilates the cavity and allows water to escape. Vents must be kept clean and never blocked. Attention to detail is needed at DPC and cavity tray locations at low level roof projections.



- 4 Brick / block expansion joints are sometimes required. These must be in accordance with TW agreed design, locations and detailing. Proprietary timber frame steel lintels are needed over apertures. These span the width and are clipped back to the timber frame to allow vertical settlement.



FIRE SAFETY

BEST PRACTISE & FIRE RISK ASSESSMENTS

TIMBER FRAME



Taylor Wimpey **TIMBER FRAME FIRE CHECKLIST**

Company: _____ Site Name: _____
Technical Director: _____ Date: _____

Site description of the timber frame structure:
• Details, area affected or affected rooms;
• Assemblies, i.e. no of floors, walls, etc.
• Other items etc.
• Appoint personnel - Building, etc.

Timber Frame Off-Site Fire Risk Assessment
(See CEMTS Manual section 5.4.5)

Has the Timber Frame Off-Site Fire Risk Assessment been carried out and approved to proceed to design? Yes/No: _____

Note: Design team or project including Timber Frame Construction must not proceed unless the Timber Frame Off-Site Fire Risk Assessment has been carried out and approved to proceed to design.

The Timber Frame Fire Checklist is for use by Technical, Commercial and Production to turn on projects involving Timber Frame Construction.

- Category 1: Reviewed to address their key points and note any actions that need to be taken in co-ordination with another requirement (see CEMTS Manual section 5.4.5);
- Category 2: Reviewed to address their key points and note any actions that need to be taken in co-ordination with another requirement. Include reference to category 1 and 2 actions, if any (see CEMTS Manual section 5.4.5);
- Category 3: Production address their key points and note any actions that need to be taken in co-ordination with another requirement. Include reference to category 1 and 2 actions, if any (see CEMTS Manual section 5.4.5).

The Checklist once completed and approved must be filed in the Project 3 section FLS along with the Timber Frame Off-Site Fire Risk Assessment.

References

When reviewing the design considerations, reference must be made to the following documents:

- HSE 100 - Fire Safety in Construction (current edition);
- STA (Current UKTTA) - Design Guide to Separating Distances (HSE 100);
- STA (Current UKTTA) - Timber Frame and Fire Safety Guidance;
- STA (Current UKTTA) - 10 Steps to Fire Safety for Timber Frame Construction (Open and Tolerant jointing and Construction Consideration - Fire prevention in construction sites).

WIM/JK 086/10/0073 Taylor Wimpey Fire Checklist Page 1 of 2

Taylor Wimpey **TIMBER FRAME: OFF SITE FIRE RISK ASSESSMENT**

Company: _____ Site Name: _____
Design/Technical Director: _____ Date: _____

Timber Frame construction can only be considered if the risk assessment is completed in the correct timing and the 'Off-Site Fire Risk Assessment' is completed in line with appropriate measures are to be employed to reduce any remaining the safety risk as far as possible.

Off-Site Fire Risk Considerations	Initial Risk (HSE)	Risk / Control Measures
Surrounding buildings at risk: Are there any buildings on the site boundary that could be at risk in the event of a fire in the proposed timber frame building during the construction phase? At risk buildings or facilities could include: • Residential buildings • Schools, hospitals, nursing homes, care homes, office buildings etc. • Filling stations or other facilities using tanks (LPG, etc.) • Transport facilities, i.e. railway station, bus station, car parks, etc. Off-site fire risk to be assessed in accordance with the Structural Timber Association guidance documents: • Building near other (BNC) and Product Paper 5 • Buildings in areas of (BNC) and the Design Guide to separating distances during construction On any of the buildings above the 'At-Risk Distance' if all construction changes to the Category of Timber Frame, consult the Timber Frame specialist supplier, or engage a specialist fire engineer Where there are close to vulnerable buildings or facilities, facilities, etc. there must be the Structural Timber Fire Safety (STS 100) Clause 204 page 101 Mitigation measures (if any): Are there any surrounding and buildings that could be used to prevent fire spreading to the site? • Structures on site • Structures on site • Structures on site • Structures on site If any, attach to this sheet a sketch plan showing all the surrounding facilities and the surrounding the site and their distance from the timber frame building under construction.		
Standard Off-Site Fire Risk During Construction Rating, after control measures have been identified	HSE	
Approved with Timber Frame Construction?	Yes	
If Yes, attach to this sheet a sketch plan showing all the surrounding facilities and the surrounding the site and their distance from the timber frame building under construction.		
Signed (Technical Director): Name: _____		
References: • STA - 10 Steps to Fire Safety for Timber Frame Construction (Current Edition) • STA - Design Guide to Separating Distances During Construction (Product paper 5 for buildings under construction) • HSE 100 - Fire Safety in Construction (HSE 100) • Construction Consideration - Fire prevention in construction sites		

- 1 Fire safety on timber frame sites, is no more onerous than masonry builds. The TW site team must comply with Section 11 of the Site Safe HSE manual. Good fire safety site management must be encouraged and regularly audited.

NHBC – STANDARDS & INSPECTIONS



External timber framed walls
CHAPTER 6.2

This chapter gives guidance on meeting the Technical Requirements for external walls of timber framed homes up to seven storeys high, substantially timber framed homes and timber wall panels.

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- 1** All TW timber frame sites must comply with NHBC standards. In particular, Section 6.2 External timber framed walls.

All timber frame plots need to be registered with NHBC. TW only use **STA Gold Assured** timber frame suppliers.

- 2** Where the NHBC Quality Management Service (QMS) is being applied timber frame construction must comply with the two NHBC QMS inspections, Foundations – Prior to erecting the kit, and Pre-Plasterboarding – after kit erected. The timber frame structure must also comply before the NHBC Pre - plaster key stage inspection.



Plot _____ **Taylor Wimpey**

Site _____

Build Quality Checklist

Timber Frame rev 2

House Type _____ Brick Type and Colour _____

Roofing of Plot _____ Roof Type and Colour _____

Periodical check by the PM/PO

Stage	Signature	Date
_____	_____	_____
_____	_____	_____

This property is now complete and ready for HQL

Site Manager Signature _____ Date _____

- 3** TW encourages additional inspections and quality checks through site specific CQR and the BQR undertaken by the Quality Manager (QM).

NEW

These provide more detail on common defects and recurring issues, that can be fed back to the timber frame suppliers, as part of the continuous improvement process.

- 4** Build quality and safety critical compliance are important to on the critical path. Additional 3rd party inspections are useful on initial / new timber frame sites, to set standards and enforce compliance. Cavity barriers, wall ties and drylining are safety critical items that must be correct.