

Kingspan TEK® Building System

STANDARD DETAILS



Low Energy - Low Carbon





Kingspan Off-Site
 Pembridge
 Leominster
 Herefordshire
 HR6 9LA

Tel: +44 (0) 1544 387308
 Fax: +44 (0) 1544 387477

Kingspan TEK Building System Design Specification

General Notes

The following specification is intended for the purposes of guidance for panel design drawings. It is intended that all panel drawings for the Kingspan TEK Building System are presented and detailed as described within the contents of this specification.

Drawing Formats

Version No Later Than	Format 1	Format 2
2006	DWG	DFX

Drawing Key for GA/Soleplate Plan

Element	Key (not to scale, diagrammatic purposes only)
Kingspan TEK wall	
Load bearing timber frame (doubled up for party walls)	
Non-load bearing timber frame	
Party Wall	

Drawing Key for Wall Layout Plan

Element	Key (not to scale, diagrammatic purposes only)
Kingspan TEK wall	
Load bearing timber frame (doubled up for party walls)	
Non-load bearing timber frame	
Party Wall	

Drawing Scales

Description	Scale
General floor layouts	1:50
General sections	1:50
Panel and frame elevations	1:35
Exploded section details	1:10
Exploded plan details	1:20

Naming Protocol

Kingspan TEK Project Number/Block number or Range of Plots/Drawing number e.g. 2445/1-5/01 or 2445/A/01
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Panel Codes

Code	Type	Level
TG01	Kingspan TEK	Ground
TF01	Kingspan TEK	First
TS01	Kingspan TEK	Second
TT01	Kingspan TEK	Third
LG01	Internal Load Bearing	Ground
LF01	Internal Load Bearing	First
LS01	Internal Load Bearing	Second
LT01	Internal Load Bearing	Third
NG01	Internal non Load Bearing	Ground
NF01	Internal non Load Bearing	First
NS01	Internal non Load Bearing	Second
NT01	Internal non Load Bearing	Third
PG01	Party Wall	Ground
PF01	Party Wall	First
PS01	Party Wall	Second
PT01	Party Wall	Third
FF01	Floor Panel	Floor
FS01	Floor Panel	Floor
FT01	Floor Panel	Floor
S01	Spandrel Panel	Roof
R01	Kingspan TEK Roof	Roof
DR01	Dormer Roof	Roof
DC01	Dormer Cheek	Roof

Timber Ancillaries List for Kingspan TEK Building System

Timbers	Kingspan TEK 142	Kingspan TEK 125
Soleplate & headplate	140 mm x 38 mm C24 preservative treated	125 mm x 38 mm C24 preservative treated
End timber, topplate bottomplate, edge timber	50 mm x 110 mm C16 timber	40 mm x 100 mm C16 timber
Timber Posts	100 mm x 110 mm C24 timber (minimum)	80 mm x 100 mm C24 timber (minimum)
Kingspan TEK box spline	100 mm x 110 mm Kingspan TEK spline	80 mm x 100 mm Kingspan TEK spline
Glulam Lintels	110 mm x 100 – 520 mm	100 mm x 100 – 520 mm

Frame Timbers

Load bearing internal	38 mm x 140 mm C16 38 mm x 89 mm C16
Non-load bearing internal	38 mm x 89 mm C16 38 mm x 63 mm C16
Party wall depth	260 mm O/A = 89 mm, 82 mm, 89 mm
Soleplate, bottomplate, topplate and headplate	Stud depth x 38 mm preservative treated timber

Glulam Roof Beam Sizes

Thickness (mm)	Depths (mm)
60	120, 140, 160, 200, 240
80	120, 140, 160, 200, 240, 280
100	100, 120, 140, 160, 200, 240, 280, 320
120	120, 160, 200, 240, 280, 320, 360
140	140, 160, 200, 240, 280, 320, 360, 400, 440
160	160, 200, 240, 280, 320, 360, 400, 440, 480
180	200, 240, 280, 320, 360, 400, 440
200	200, 240, 280, 320, 360, 400, 440, 480, 520
220	240, 280, 320, 360, 400, 440, 480
240	240, 280, 320, 360, 400, 440, 480, 520

Other Ancillaries

Product	Specification
Roofing membrane	Kingspan nilvent or similar approved with vapour resistance no greater than 0.25 MNs/g.
Wall membrane	Breathable membrane to BS 4016 with vapour resistance no greater than 0.6 MNs/g.
Engineered floor beams and joists	As specified by engineer
Joist hangers	By Cullen as specified by engineer.
Scabs	As specified by engineer
Rim boards	As specified by engineer
Expanding urethane sealant	1 bead at connections to foam core
Silicone sealant	2 beads at timber to timber connection
Cavity Closer	38 mm x cavity width timber batten or proprietary cavity closure no less than 0.45 m ² K/W

Fixing Specification

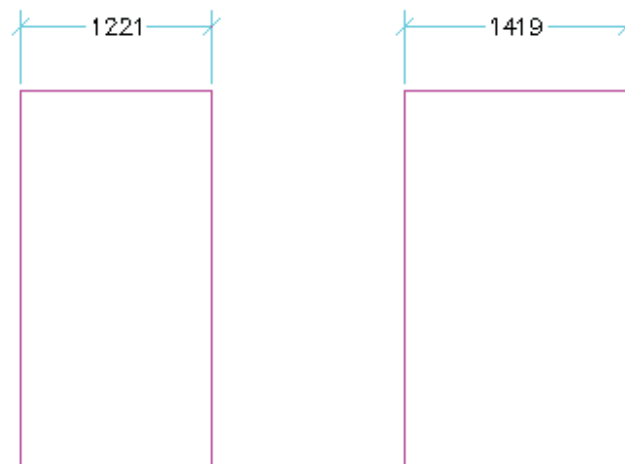
Application	Fastener Type	Spacing
Fixing bottomplate to soleplate	3.1 mm x 90 mm galvanised ring-shank nails	200 mm in two staggered rows
Fixing Timber frame to soleplate	3.1 mm x 90 mm galvanised ring-shank nails	300 mm centres and to sides of full height openings (will vary if soleplate fixing centres are reduced)
Fixing box splines into Kingspan TEK panels	2.8 mm x 63 mm galvanised ring-shank nails	100 mm centres both sides of panel
Fixing end timber, bottomplates, headplates, and edge timbers into Kingspan TEK panels	2.8 mm x 63 mm galvanised ring-shank nails	50 mm centres both sides of panel
Fixing timber posts into Kingspan TEK panel	2.8 mm x 63 mm galvanised ring-shank nails	50 mm centres both sides of panel
Fixing Kingspan TEK wall panels at corner joints	6.0 mm x 210 mm sparrennägel	Typically 300 mm centres. To only be fixed into 4.0 mm dia. Pre drilled holes
Fixing Kingspan TEK roof panels at wall/floor junctions, ridge beams, intermediate purlins and gables	6.0 mm x 210 mm sparrennägel	Typically 300 mm centres. To only be fixed into 4.0 mm dia. Pre drilled holes

Fixing internal timber framed walls to Kingspan TEK external walls	6.0 mm x 210 mm sparrennägel	Typically 300 mm centres. To be fixed from external inwards into 4.0 mm dia. Pre drilled holes
Fixing party wall leaf at return with Kingspan TEK external wall panel	3.1 mm x 90 mm galvanised ring-shank nails	300 mm centres at centre line of return stud
Fixing timber frame to timber frame	2.8 mm x 63 mm galvanised ring-shank nails	300 mm centres (double rows at 450 mm centres for frames wider than 89 mm)
Fixing joist hanger to headplate/engineered beam (subject to variation depending on joist hanger specification and floor system manufacturers instructions)	3.75 mm x 32 mm square twist shank nails or Simpson N10 nails	Into side and top of headplate or beam at marked locations
Fixing I -Joists/beams to joist hangers (subject to variation depending on joist hanger specification and floor system manufacturers instructions)	3.75 mm x 32 mm square twist shank nails or Simpson N10 nails	Into side and top of headplate at marked locations
Fixing floor decking to joist/headplate or header joist	2.8 mm x 63 mm galvanised ring-shank nails	In pre-drilled holes for bottom flange
Fixing rim board to headplate	Skew nail with 3.75 mm x 75 mm round wire nails	150 mm
Fixing floor decking to joist/rimboard	3.35 mm x 65 mm round wire nails	200 mm

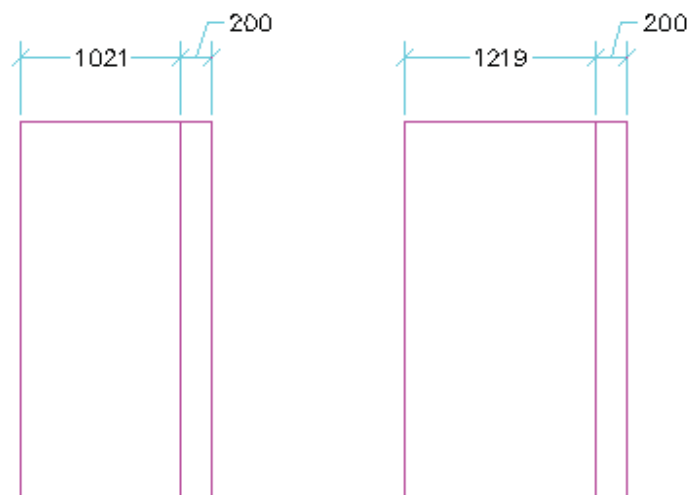
Panel Split Rules

200mm RULE

FOR PANELS BETWEEN 1221mm & 1419mm



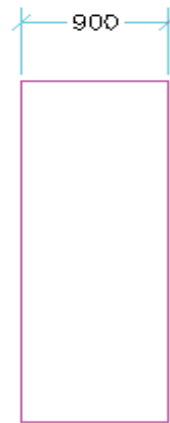
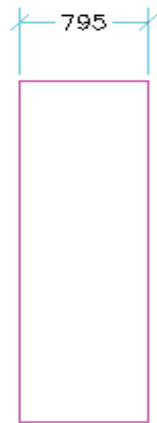
BEFORE



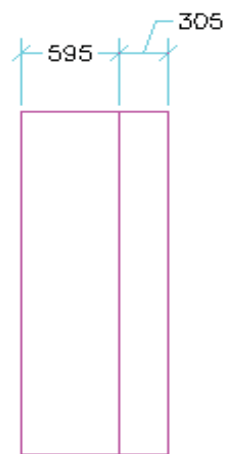
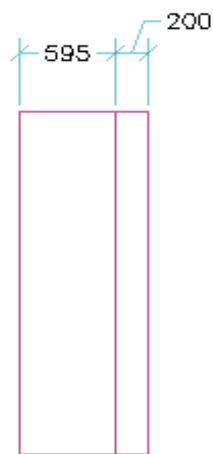
AFTER

595mm RULE

FOR PANELS BETWEEN 795mm & 900mm



BEFORE



AFTER

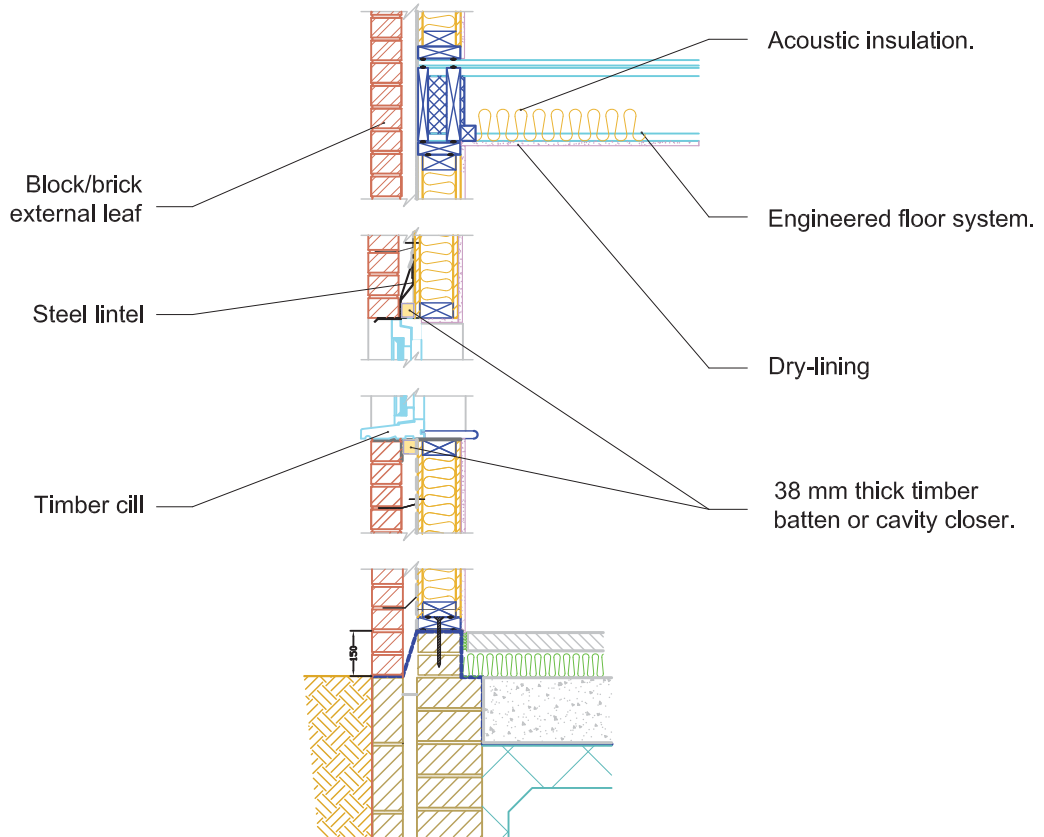
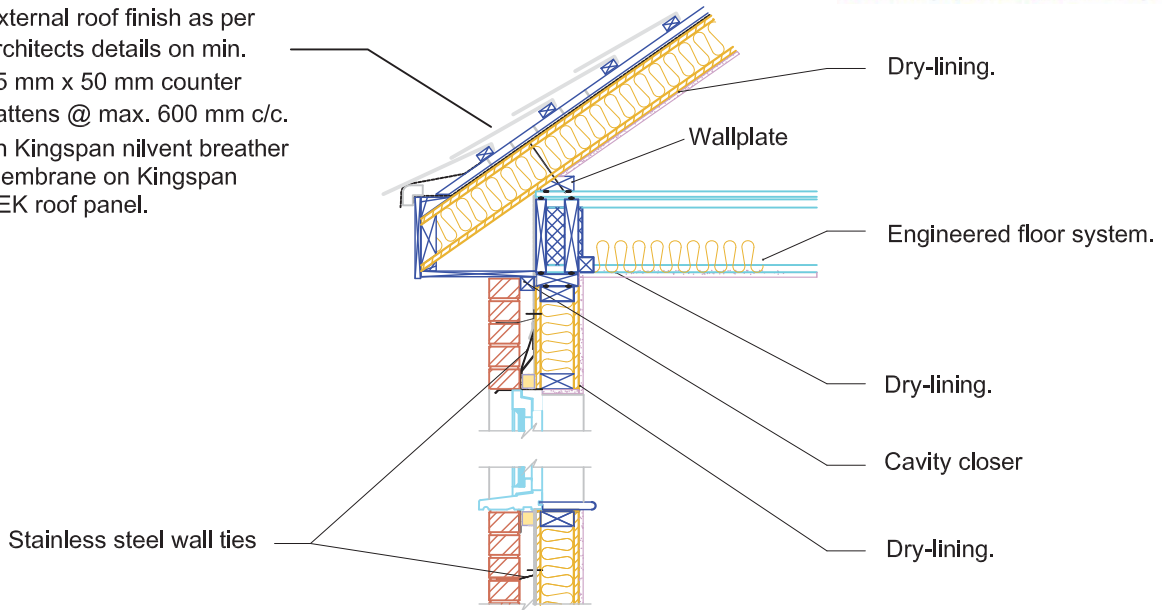
Note

Under no circumstances, when splitting panels between these widths should any other panel than those shown be used.



Kingspan **TEK**® Building System

External roof finish as per architects details on min. 25 mm x 50 mm counter battens @ max. 600 mm c/c. on Kingspan nilvent breather membrane on Kingspan TEK roof panel.



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Description:

Typical wall section

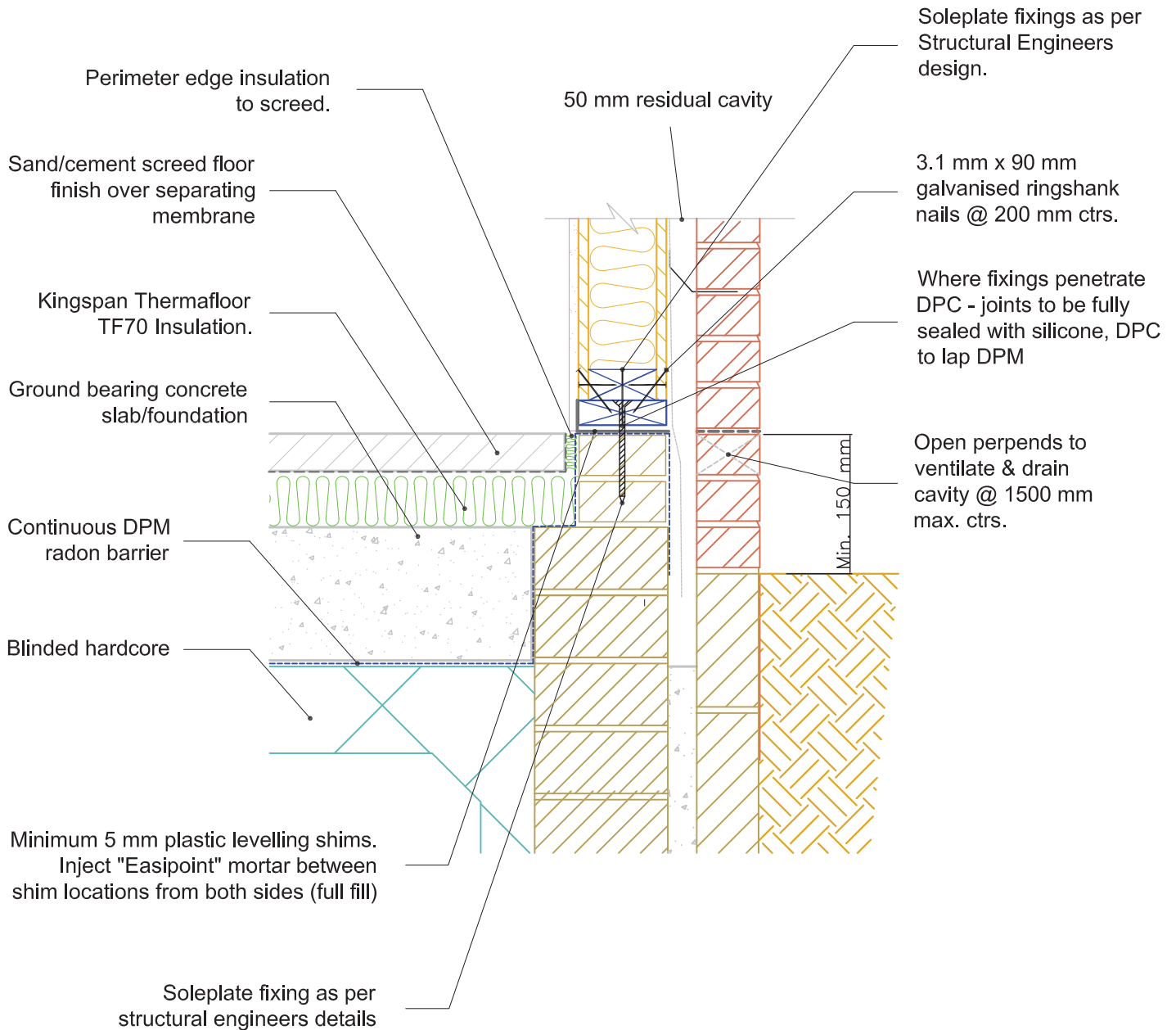
Scale: NTS

Date: 20/02/08

Drawn: W.M

Drawing No:


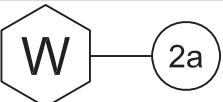


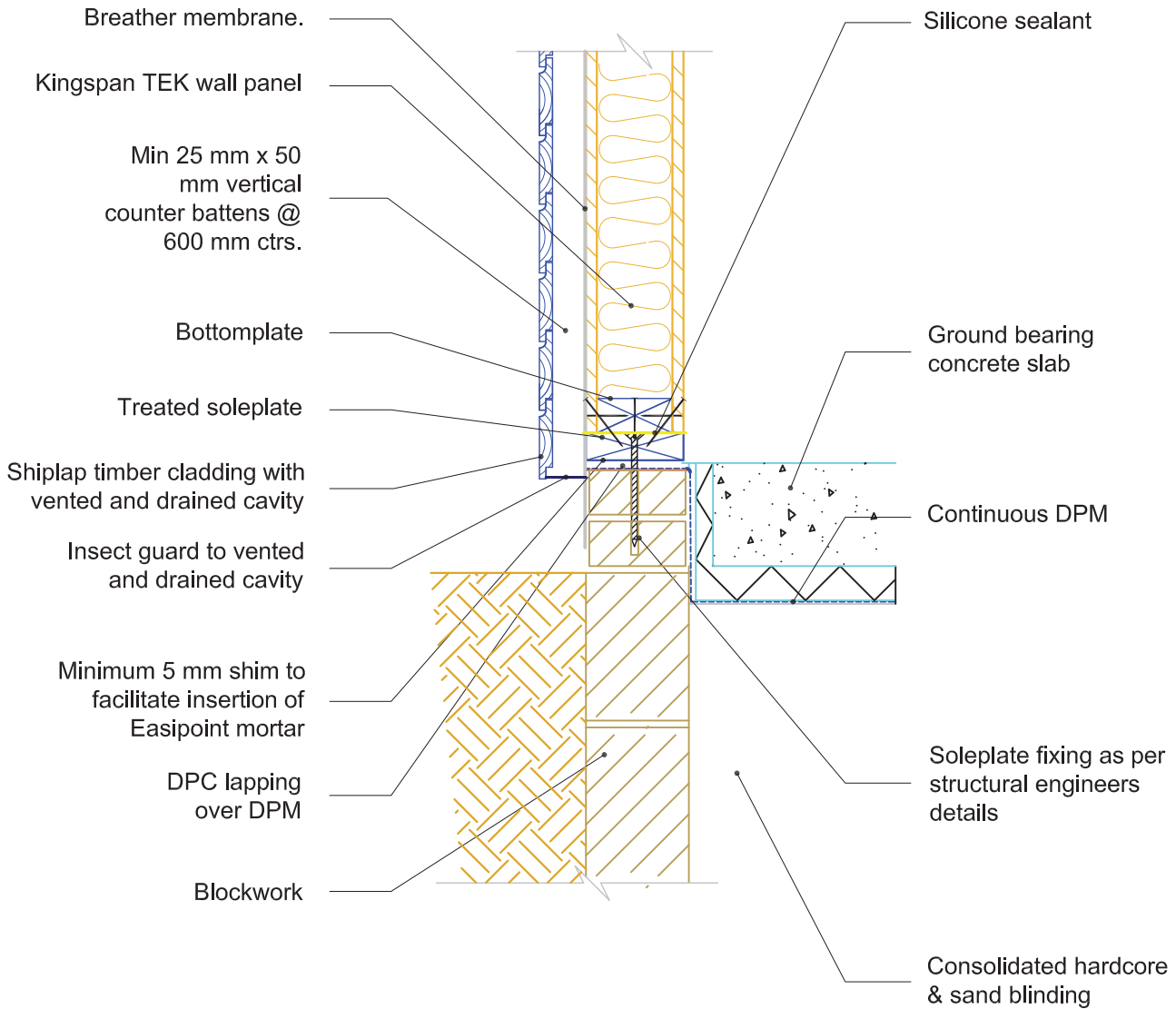


Notes:

1. "Easipoint" Mortar in accordance with Easipoint UK standard specifications.
2. Slab should be levelled and shimmed along line of walls to create a level platform for wall construction.

Shim Thickness	Shim Colour
2 mm	Purple
3 mm	Green
4 mm	Yellow
5 mm	Blue
6 mm	Black

 <p>Kingspan Off-Site</p> <p>P.O. Box 7454, Kiln Farm, Milton Keynes, MK11 3AB Telephone 01908 266 200 Fax 01908 266 120 www.kingspanoffsite.com</p>	Description:	
	<h2>Typical ground bearing slab - sectional elevation through soleplate fixing detail</h2>	
	Scale: NTS	Drawing No:
	Date: 21/04/08	
Drawn: W.M		



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Description:

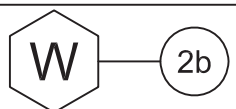
Typical ground bearing floor slab with 140 mm wide blockwork wall - sectional elevation through soleplate fixing detail method 1

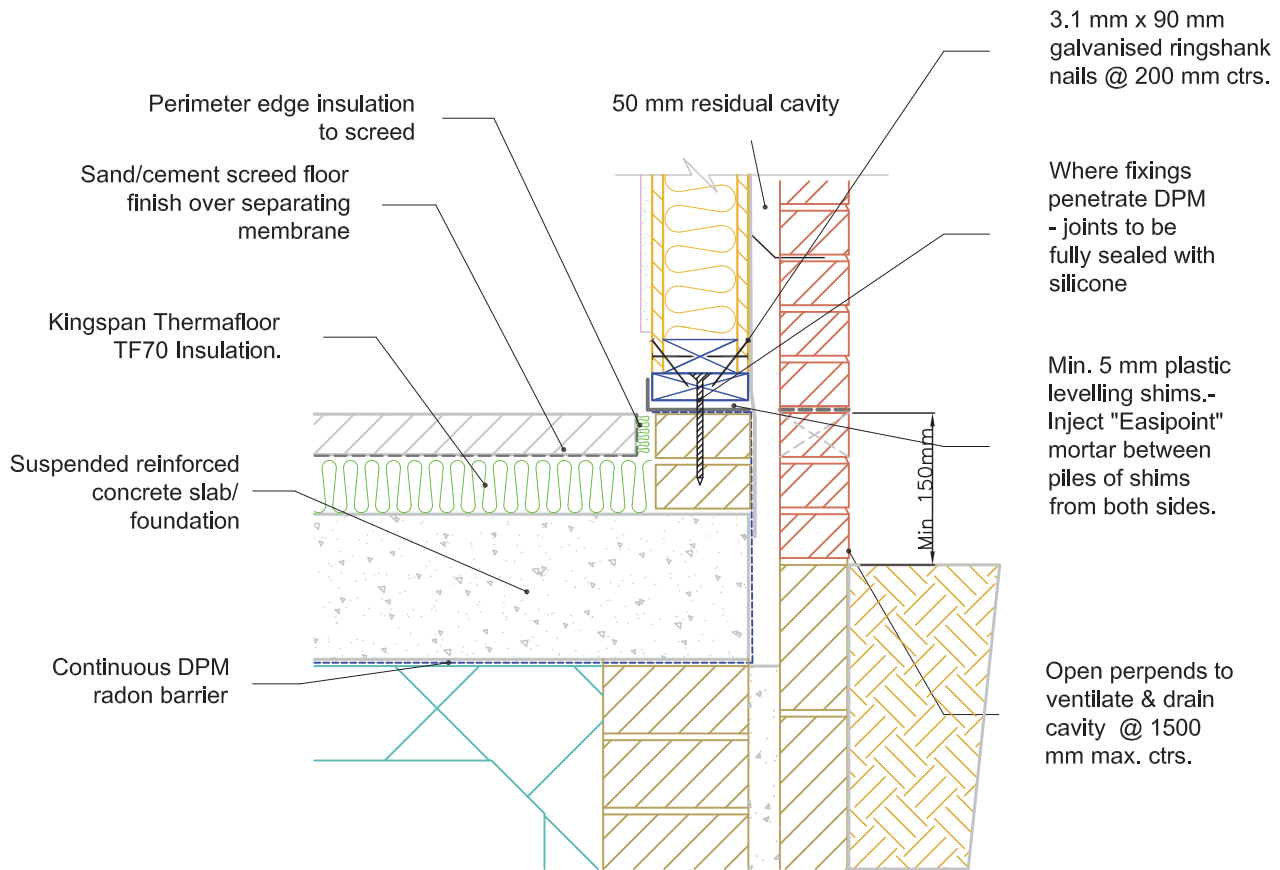
Scale: NTS

Date: 17/03/08

Drawn: W.M

Drawing No:





Notes:

1. Slab should be levelled and shimmed along line of walls to create level platform for wall construction.
2. All holding down details to be designed & detailed by engineer & fitted as shown on the drawing.
3. "Easipoint" mortar in accordance with Easipoint UK standard specifications.

Shim Thickness	Shim Colour
2 mm	Purple
3 mm	Green
4 mm	Yellow
5 mm	Blue
6 mm	Black



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Description:

Typical suspended reinforced concrete slab -

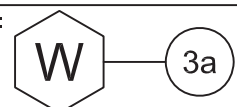
sectional elevation through soleplate fixing detail

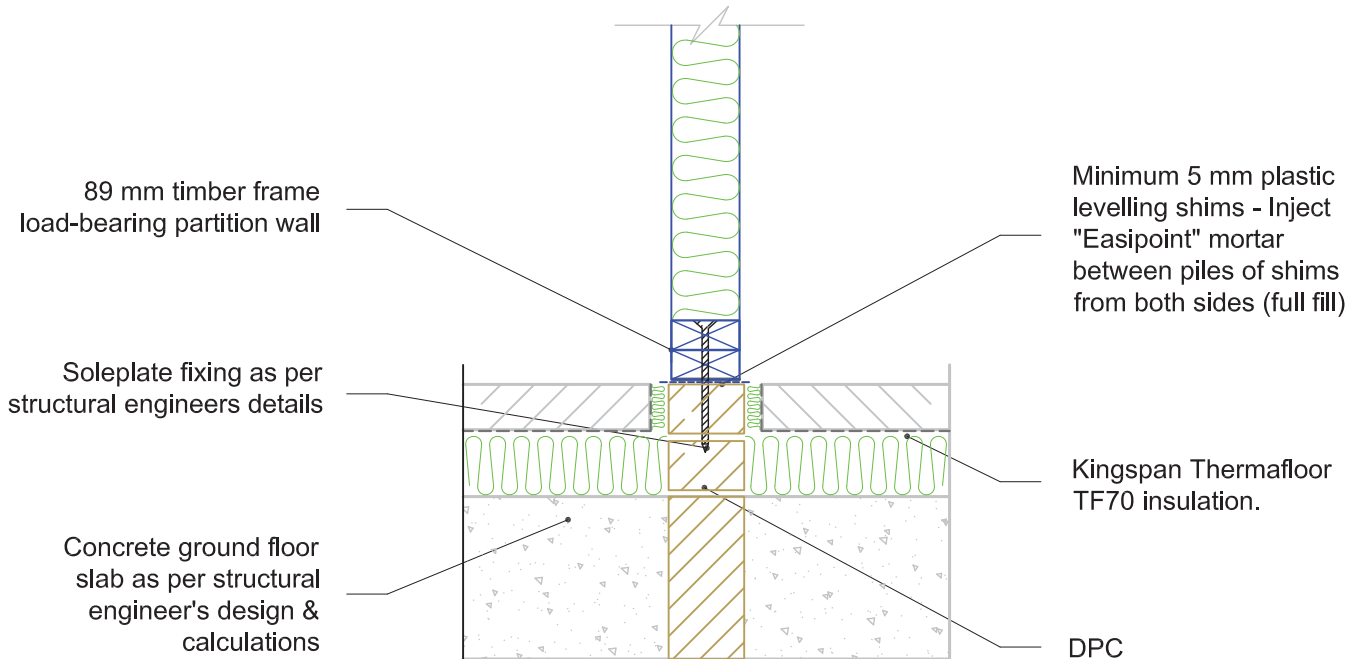
Scale: NTS

Date: 17/03/08

Drawn: W.M

Drawing No:





Note:

1. Slab should be levelled and shimmed along line of walls to create level platform for wall construction.



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Description:

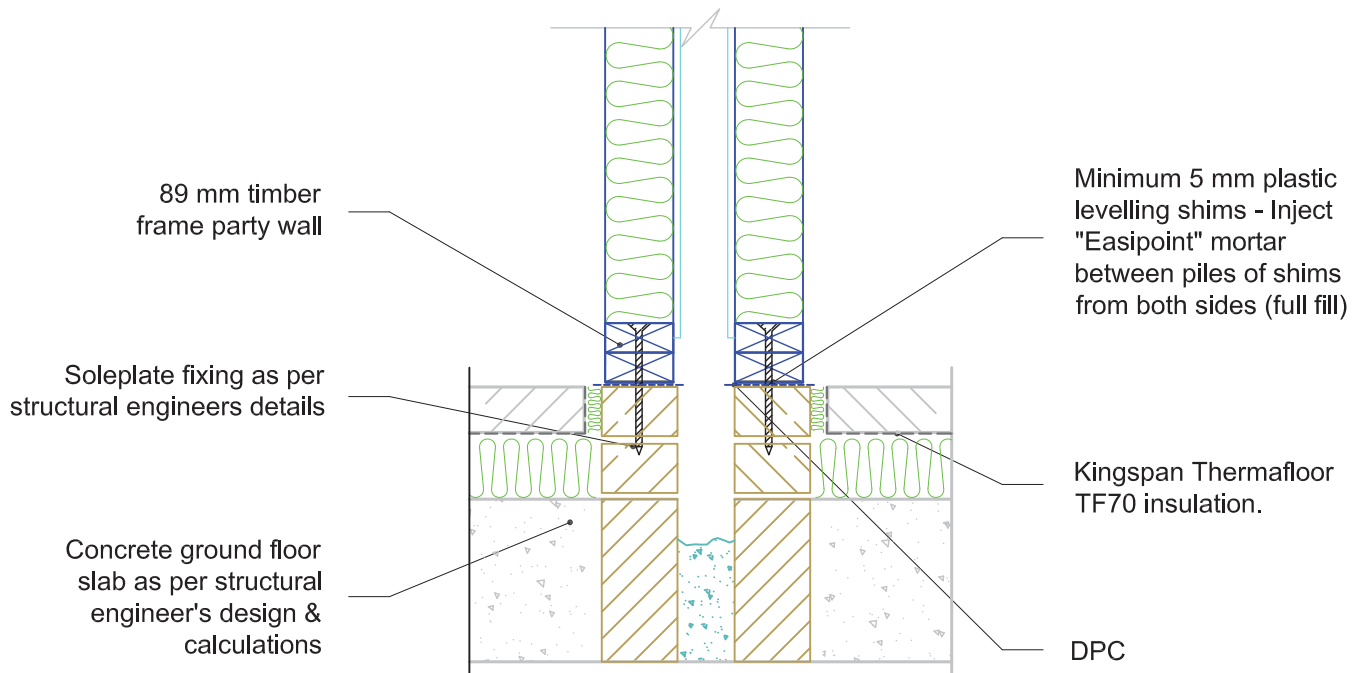
Typical load bearing timber frame wall detail -

section through wall junction with ground floor slab

Scale:	NTS
Date:	17/03/08
Drawn:	W.M

Drawing No:

W	3b
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Note:

1. Slab should be levelled and shimmed along line of walls to create level platform for wall construction.



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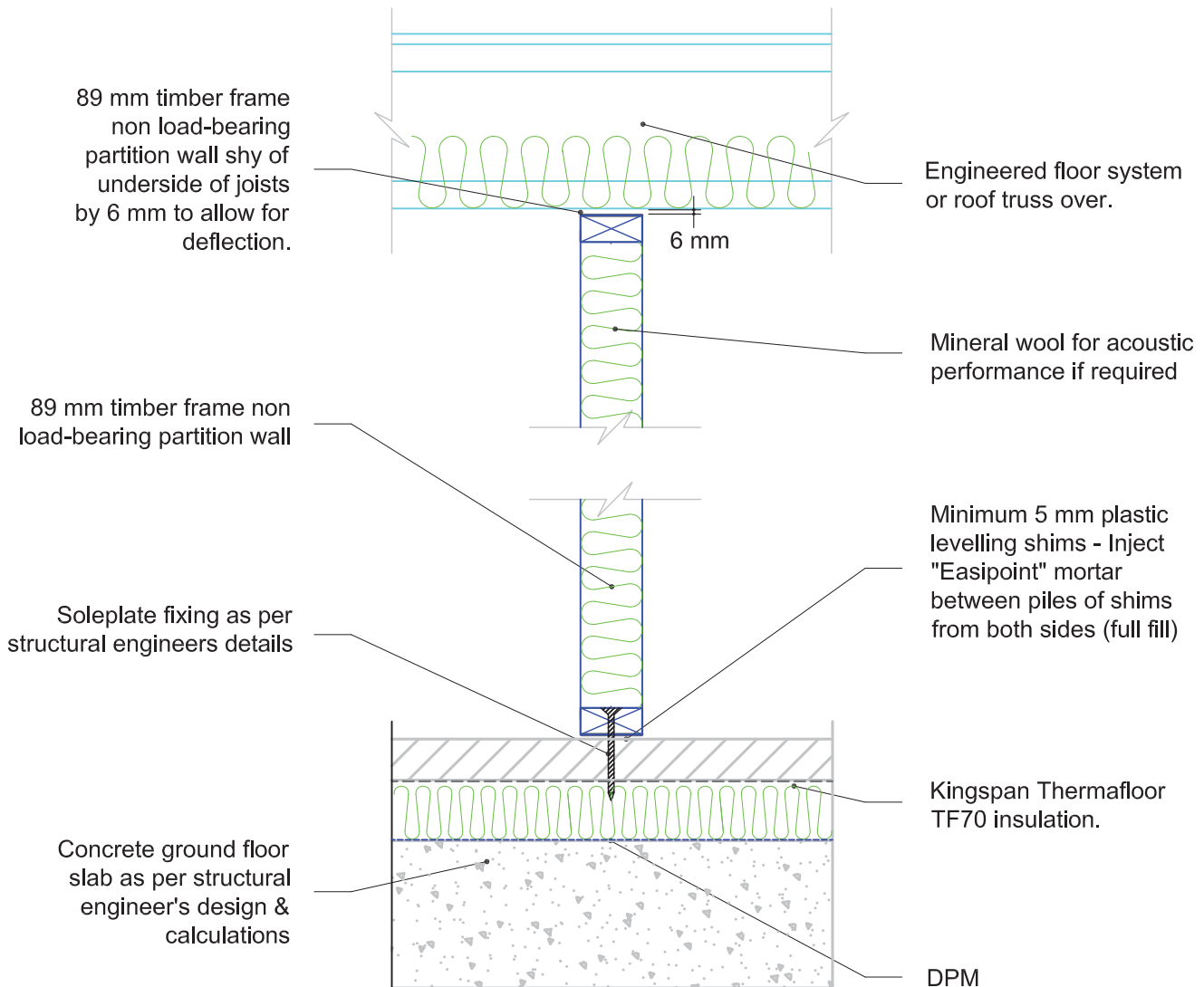
Description:

Typical load bearing timber frame party wall detail -

section through wall junction with ground floor slab

Scale: NTS
Date: 28/03/08
Drawn: W.M

Drawing No:  



Note:

1. Slab should be levelled and shimmed along line of walls to create level platform for wall construction.



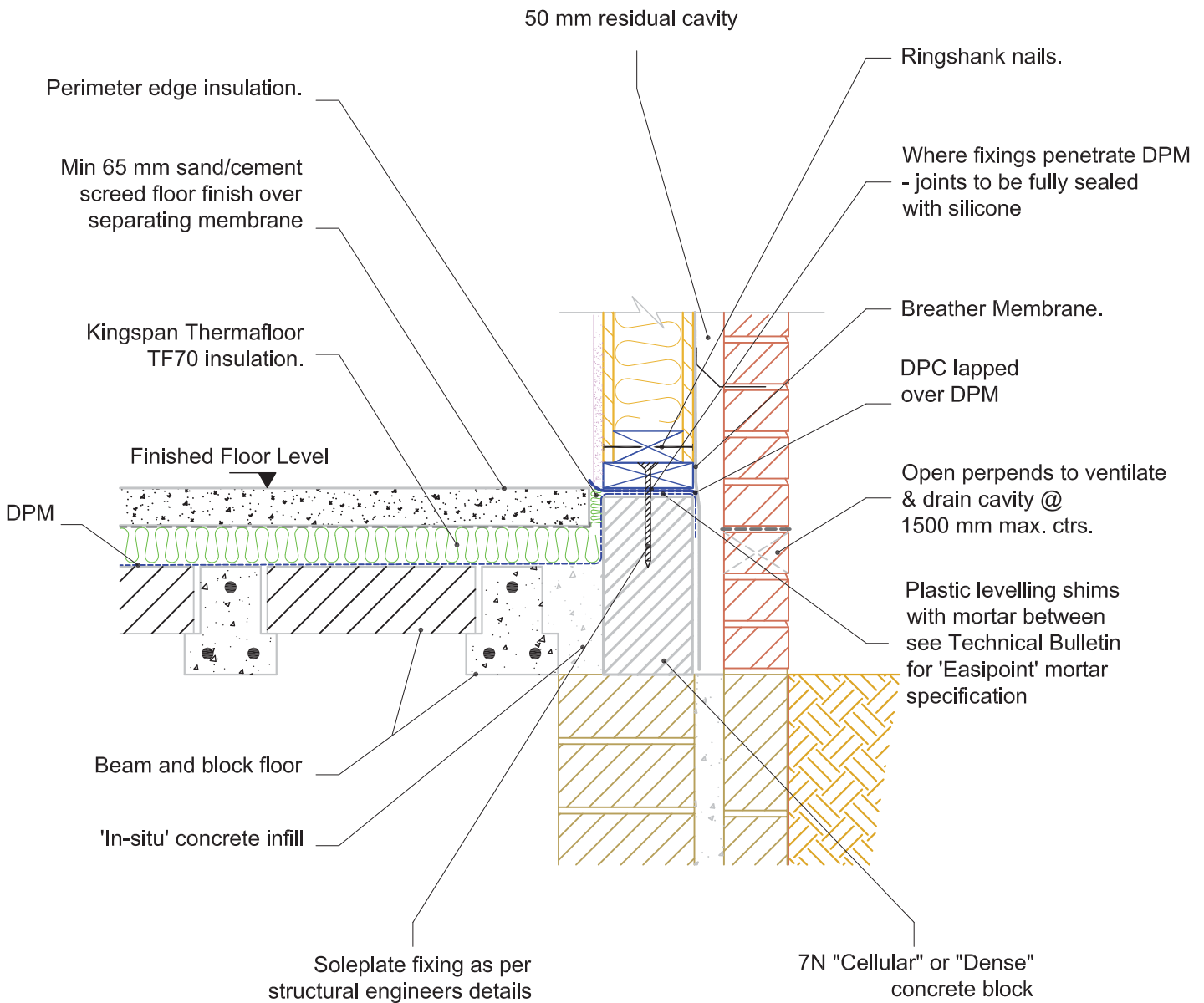
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Description:

Typical non load bearing
timber frame wall detail -
section through wall junction
from slab to ceiling level

Scale: NTS
Date: 28/03/08
Drawn: W.M

Drawing No:  



Note:

1. All holding down details to be designed & detailed by engineer and fixed as shown on drawings

Shim Thickness	Shim Colour
2 mm	Purple
3 mm	Green
4 mm	Yellow
5 mm	Blue
6 mm	Black



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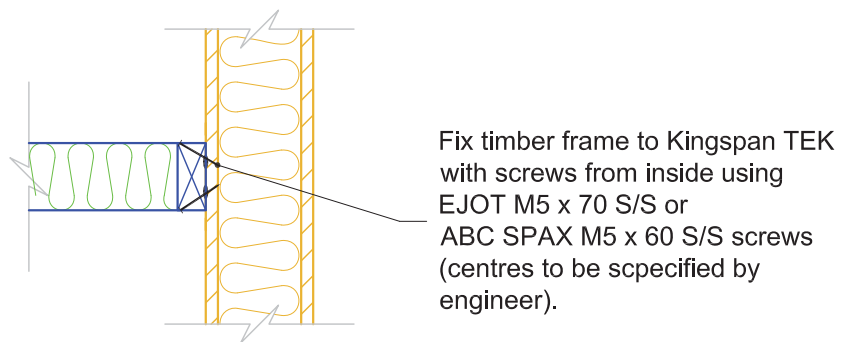
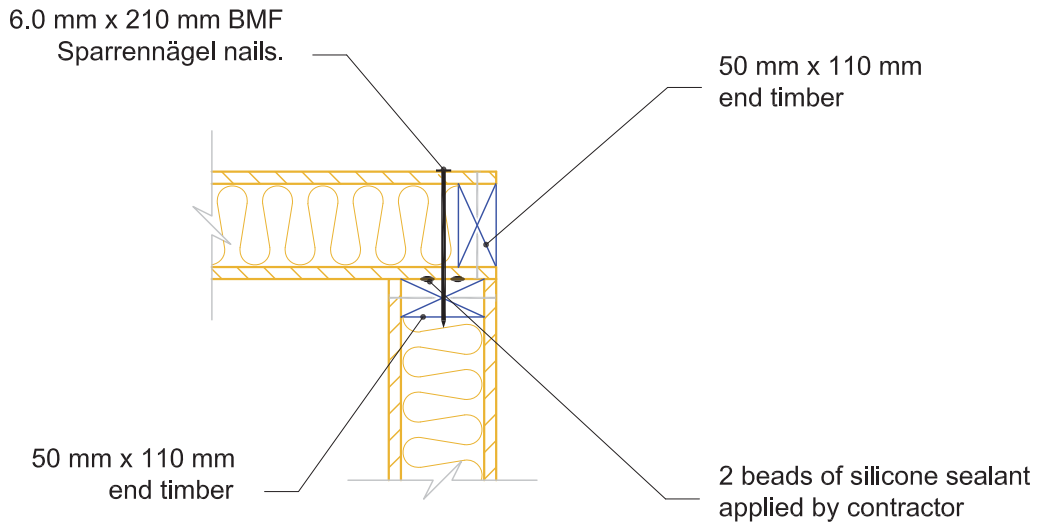
Description:

**Typical beam and block floor -
sectional elevation through
soleplate fixing detail**

Scale: NTS
Date: 17/03/08
Drawn: W.M

Drawing No:





Note:

1. All holding down details to be designed & detailed by engineer and fixed as shown on drawings.



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Description:

Plan showing typical wall connection detail -

Corner & T-junction

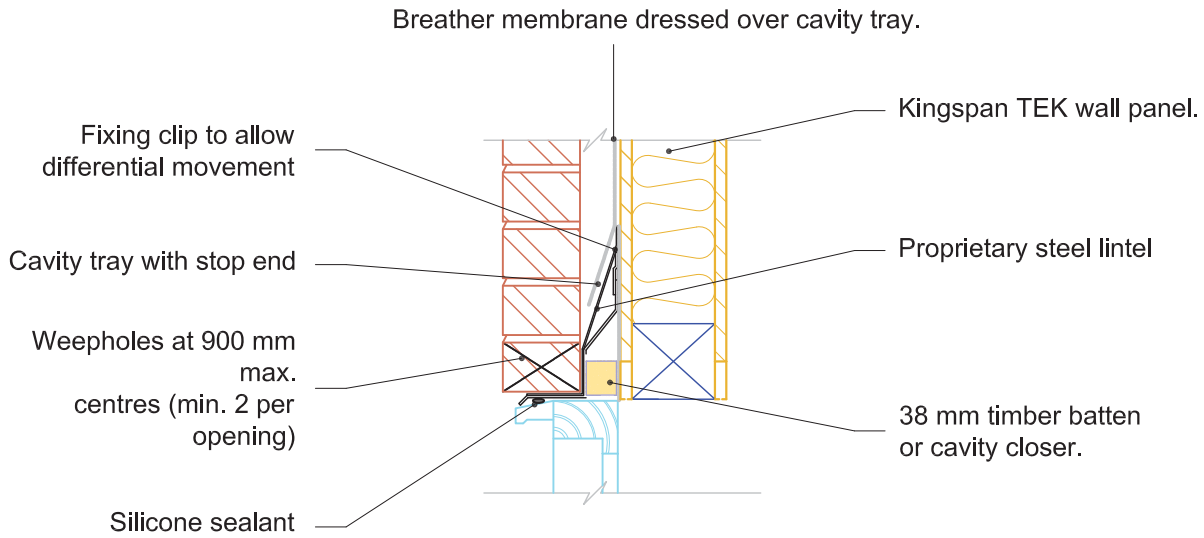
Scale: NTS

Date: 17/03/08

Drawn: W.M

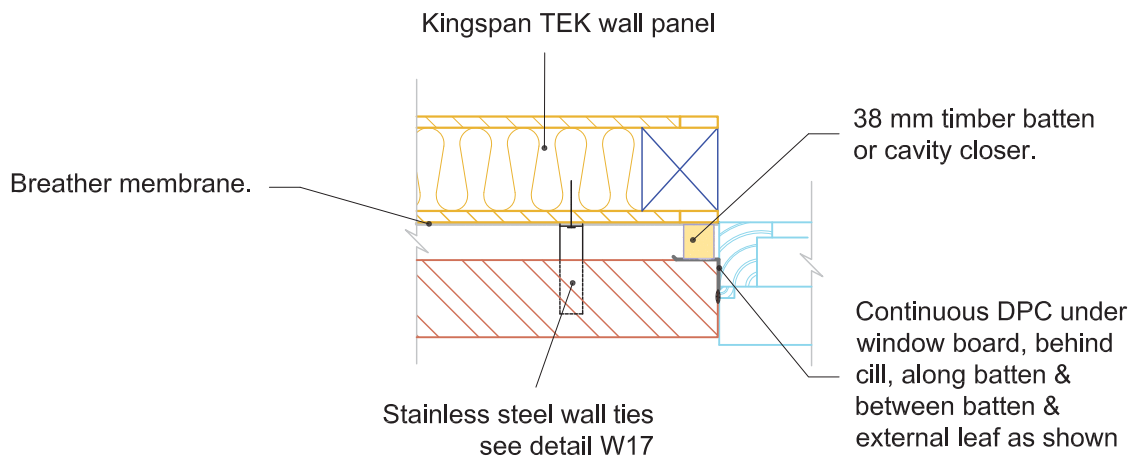
Drawing No:





NB Restraint clips typically required @ 600 mm cts. along top edge of lintel. Fixings to be used in accordance with lintel manufacturer's recommendations.

Section



Plan



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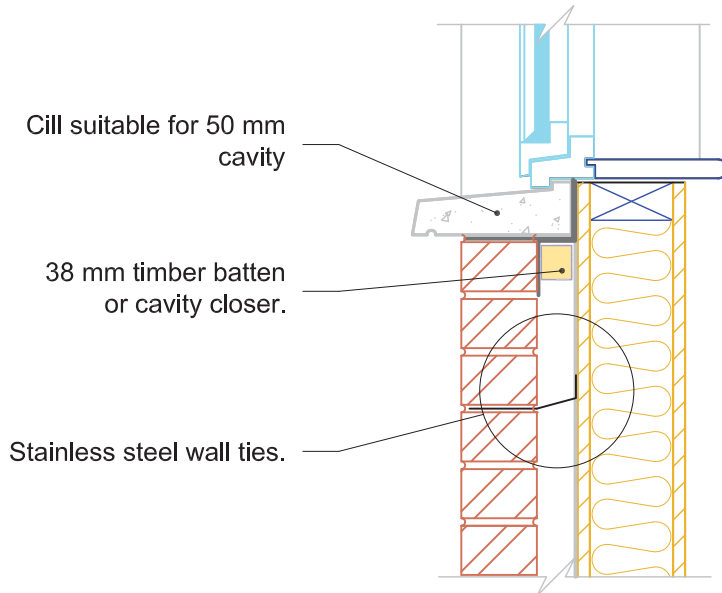
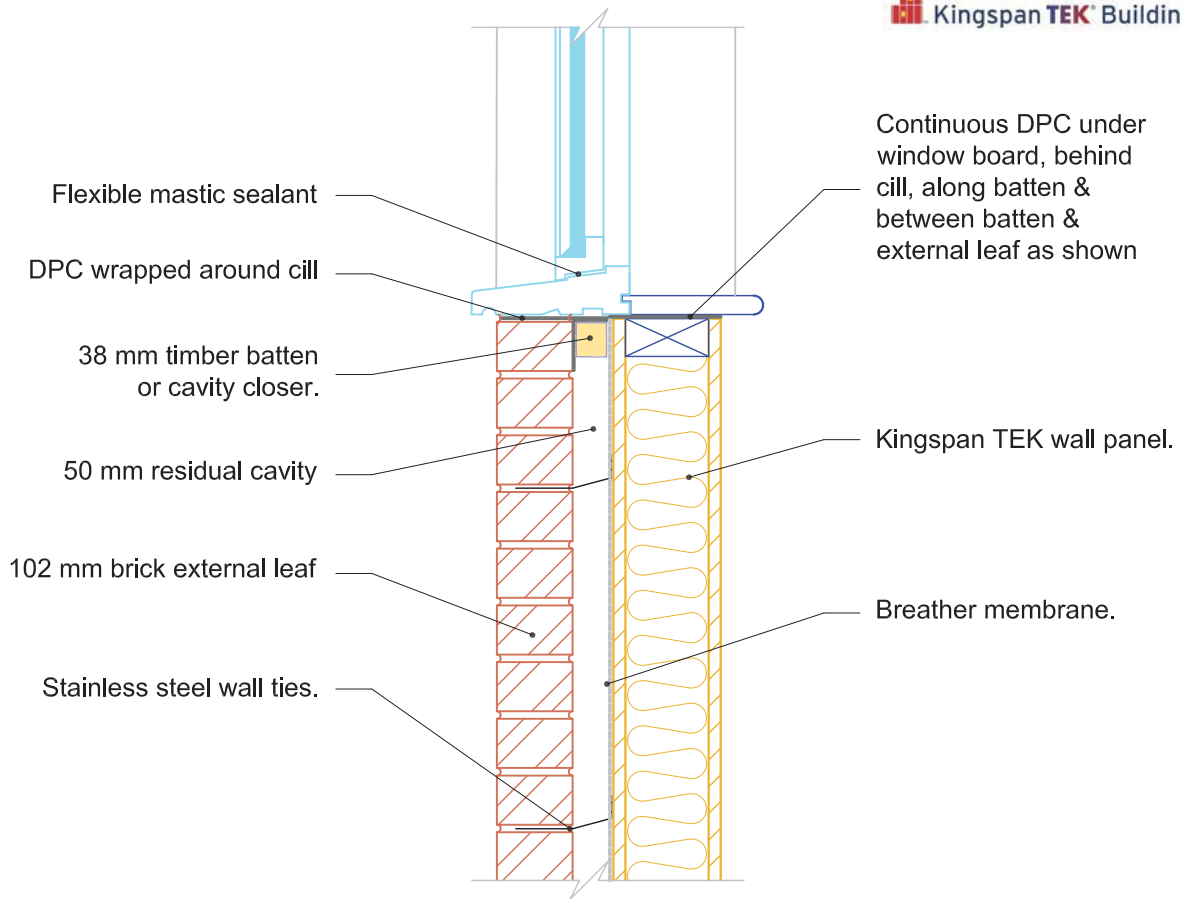
Description:

Typical wall detail -
brickwork external leaf

Scale: NTS
Date: 17/03/08
Drawn: W.M

Drawing No:





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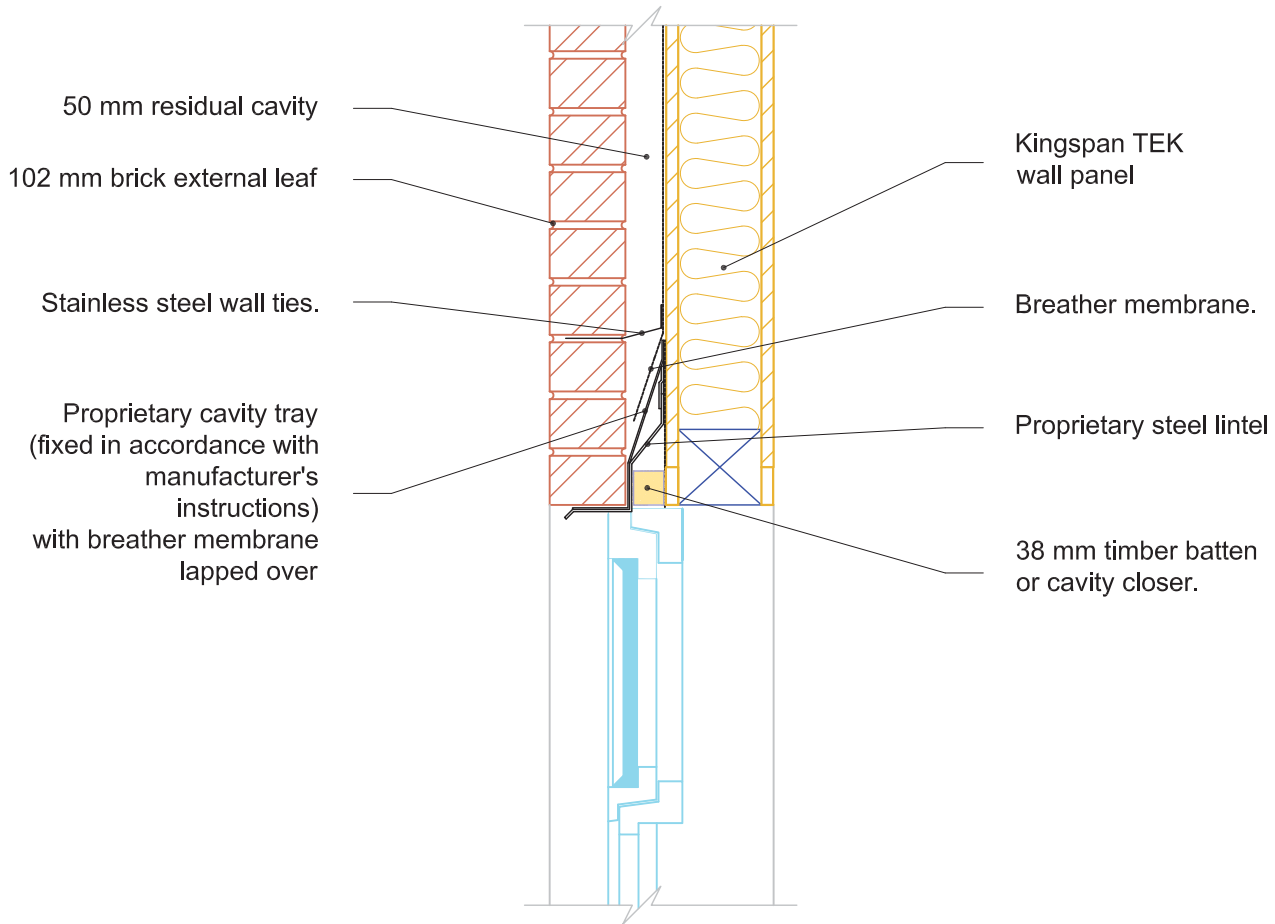
Description:

Typical section at window cill -
brickwork leaf

Scale: NTS
Date: 17/03/08
Drawn: W.M


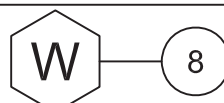
Drawing No:

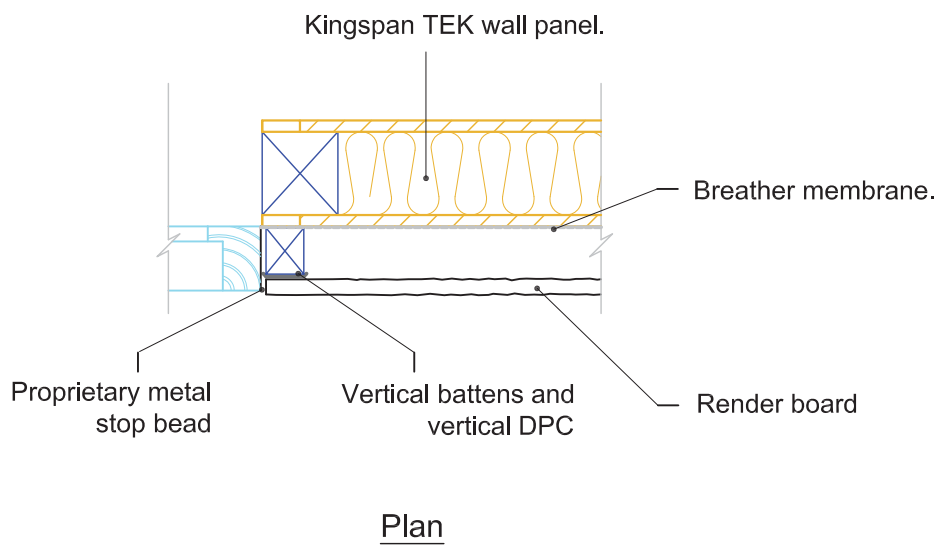
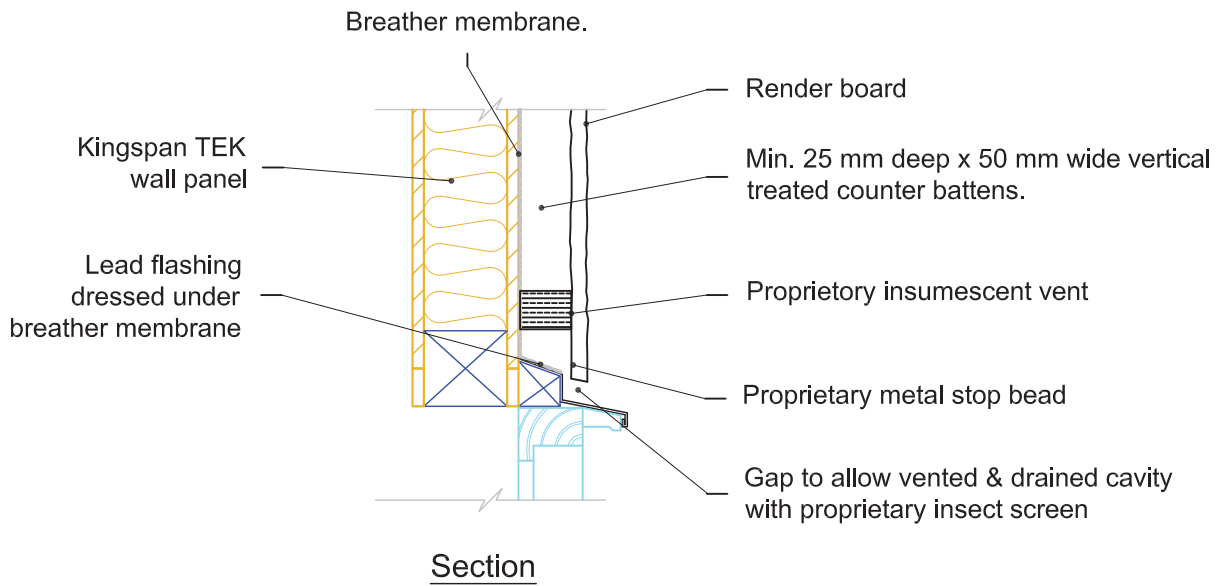




Note:

1. Restraint clips typically required @ 600 mm cts. along top edge of lintel.
Fixings to be used in accordance with lintel manufacturer's recommendations.

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	<p>Typical section at window head - brickwork external leaf</p>	
	Scale: NTS	Drawing No:
	Date: 17/03/08	
Drawn: W.M		



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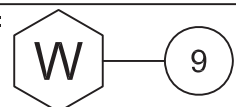
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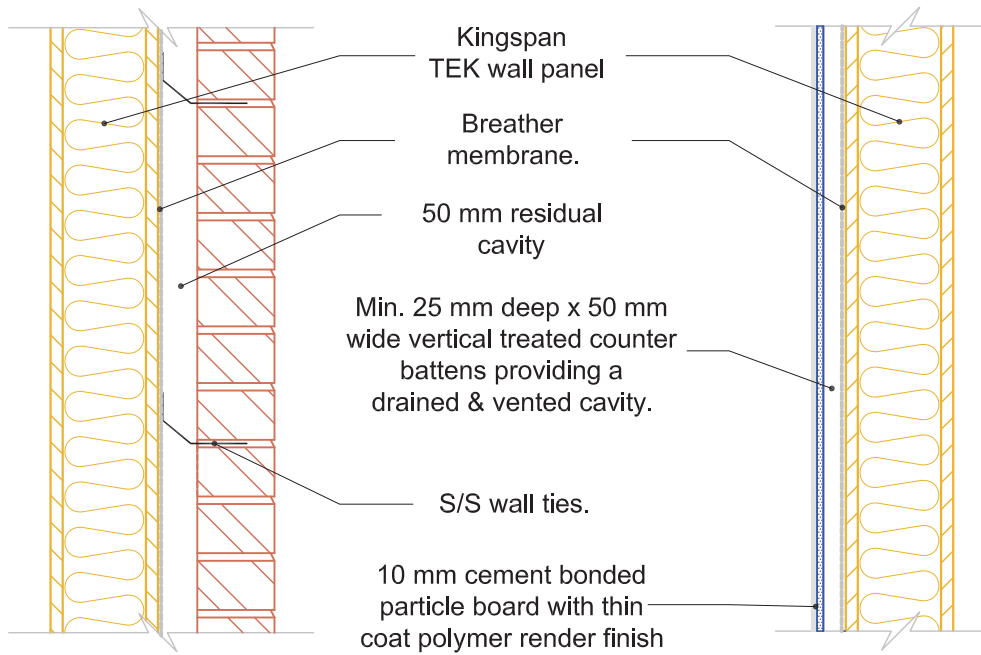
Typical window detail -

polymer rendered cladding
board with vented &
drained cavity

Scale: NTS
Date: 17/03/08
Drawn: W.M

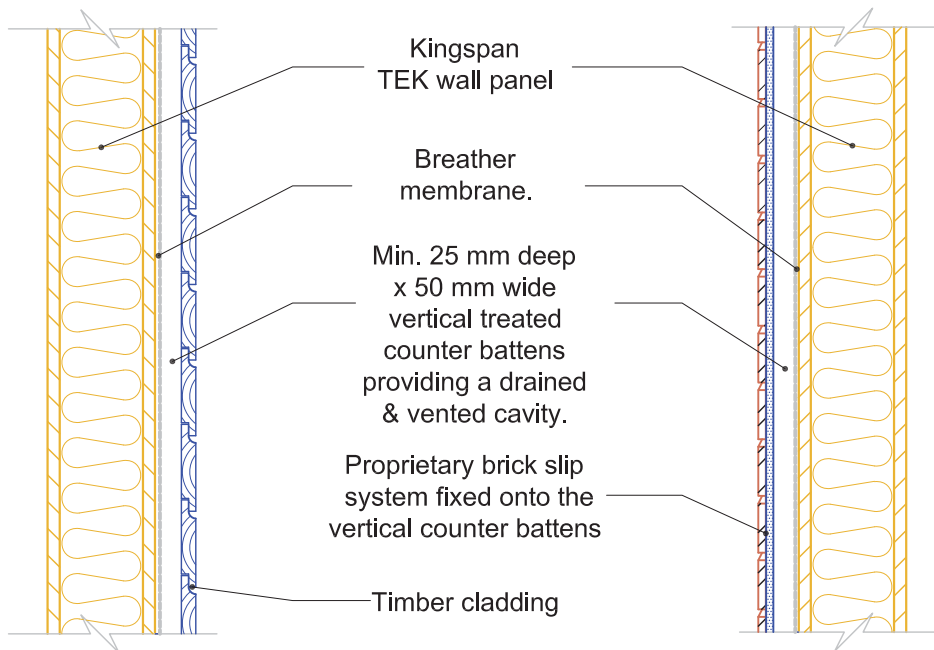
Drawing No:





Brick cavity finish

Thin coat polymer render on vertical battens



Horizontal timber cladding finish on vertical battens

Proprietary brick slip finish on vertical battens



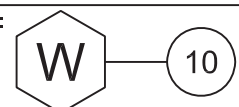
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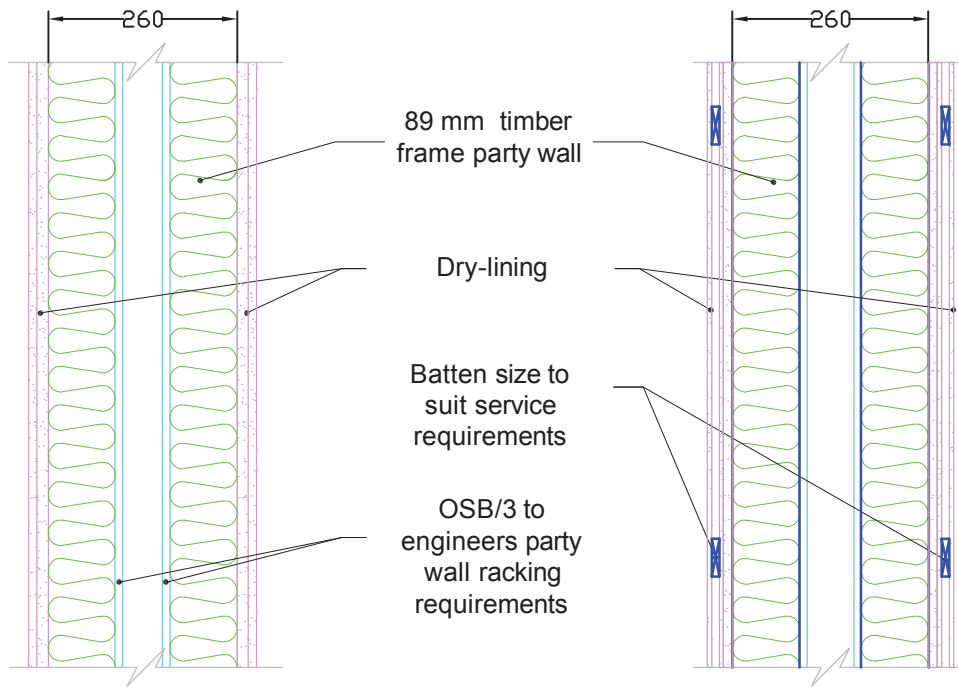
Description:

Standard external finishes

Scale: NTS
Date: 17/03/08
Drawn: W.M

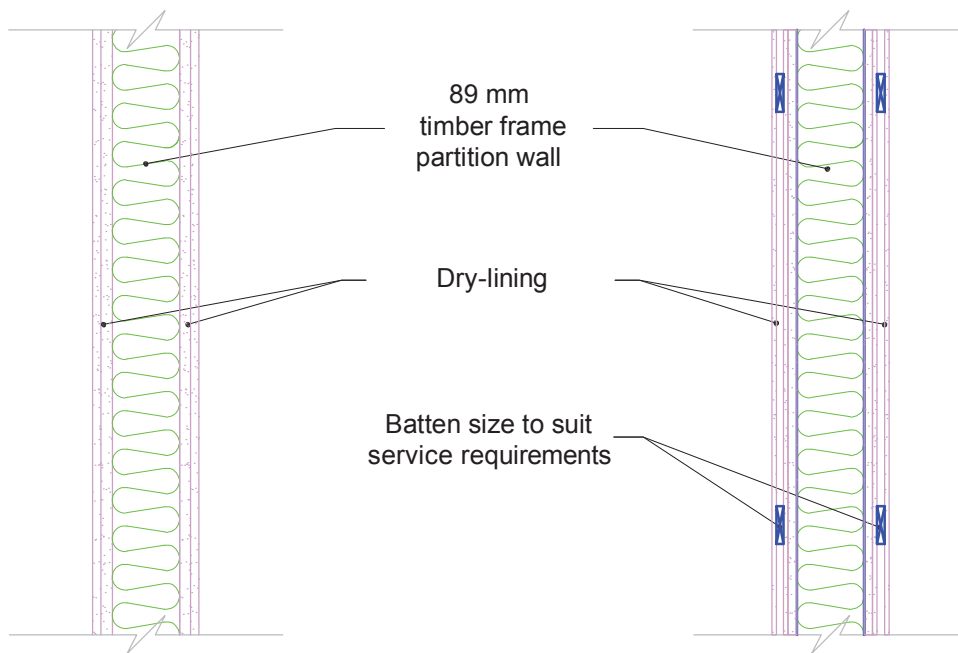
Drawing No:





Preferred party wall construction (1)

Preferred party wall construction (2)



Preferred internal Load bearing wall construction (1)

Preferred internal Load bearing wall construction (2)



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Description:

Plan view of internal partition walls

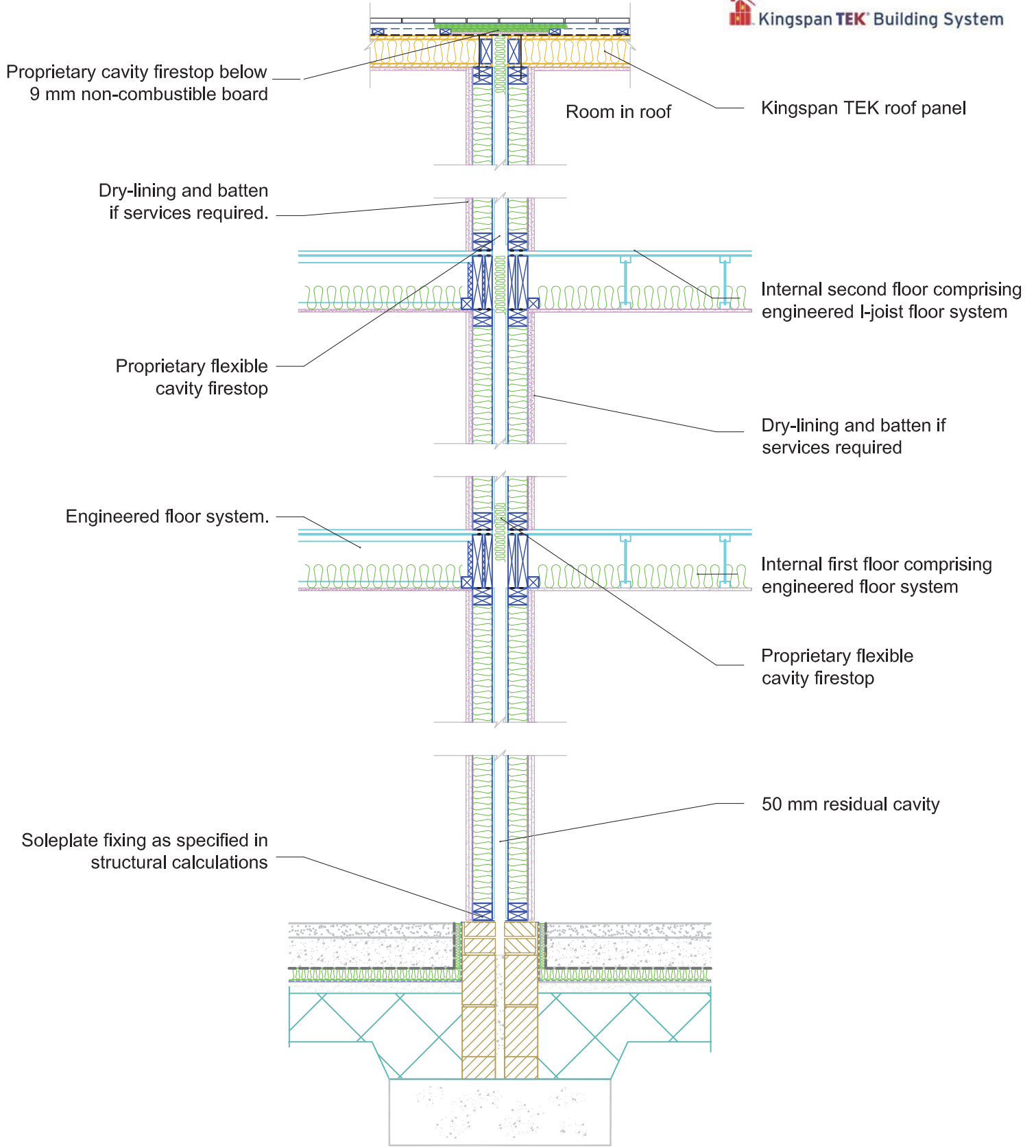
Scale: NTS

Date: 17/03/08

Drawn: W.M

Drawing No:





Off-Site

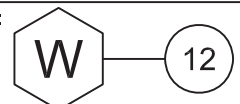
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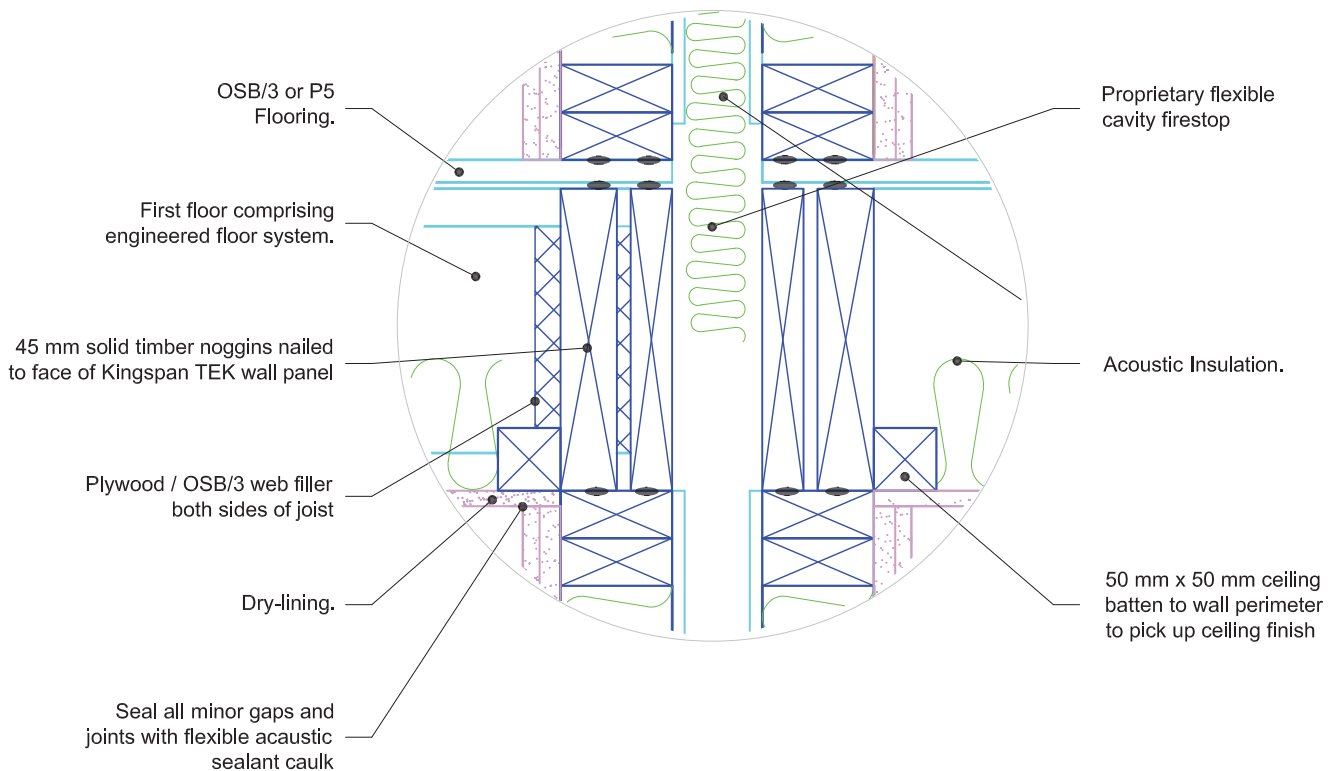
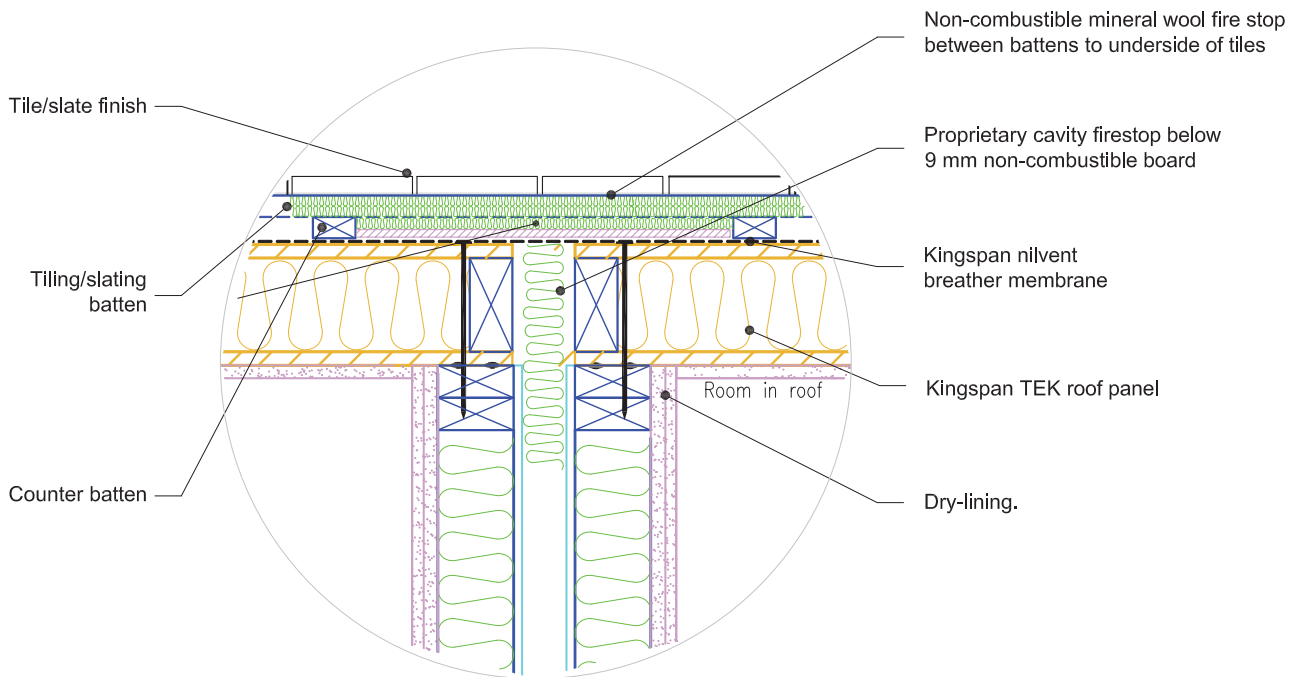
Description:

Sectional through typical supporting wall & internal floor assemblies incorporating room in roof

Scale:	NTS
Date:	17/03/08
Drawn:	W.M

Drawing No:





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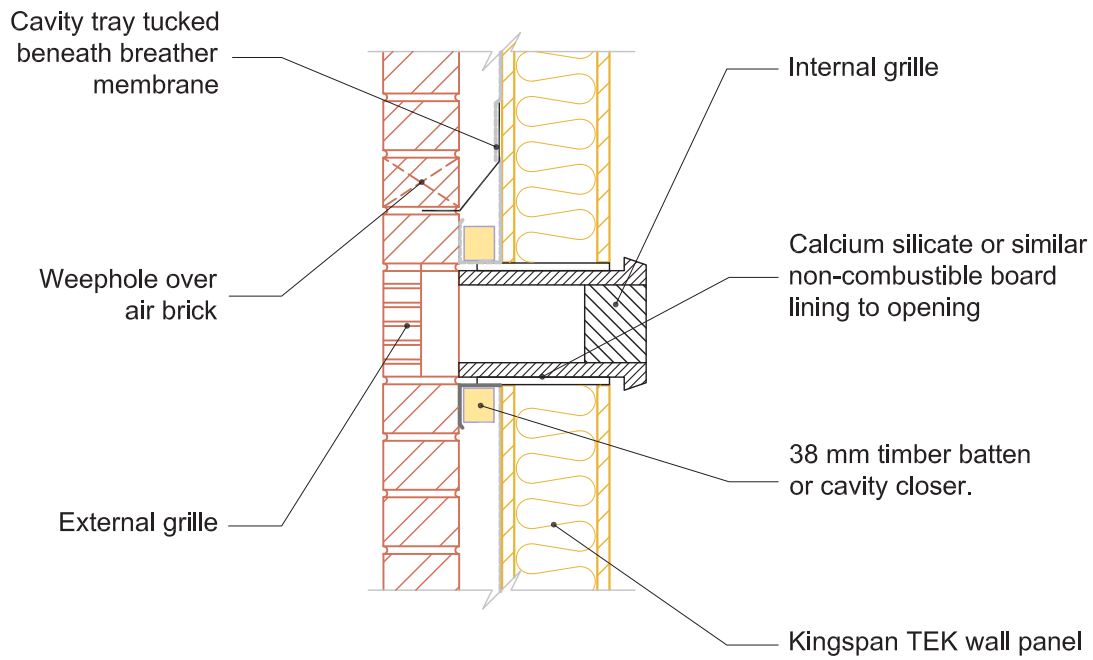
Description:

Sectional through typical separating wall & internal floor assemblies incorporating room in roof

Scale: NTS
Date: 24/04/08
Drawn: W.M

Drawing No:





Description:

Sectional elevation of MVHR inlet/outlet

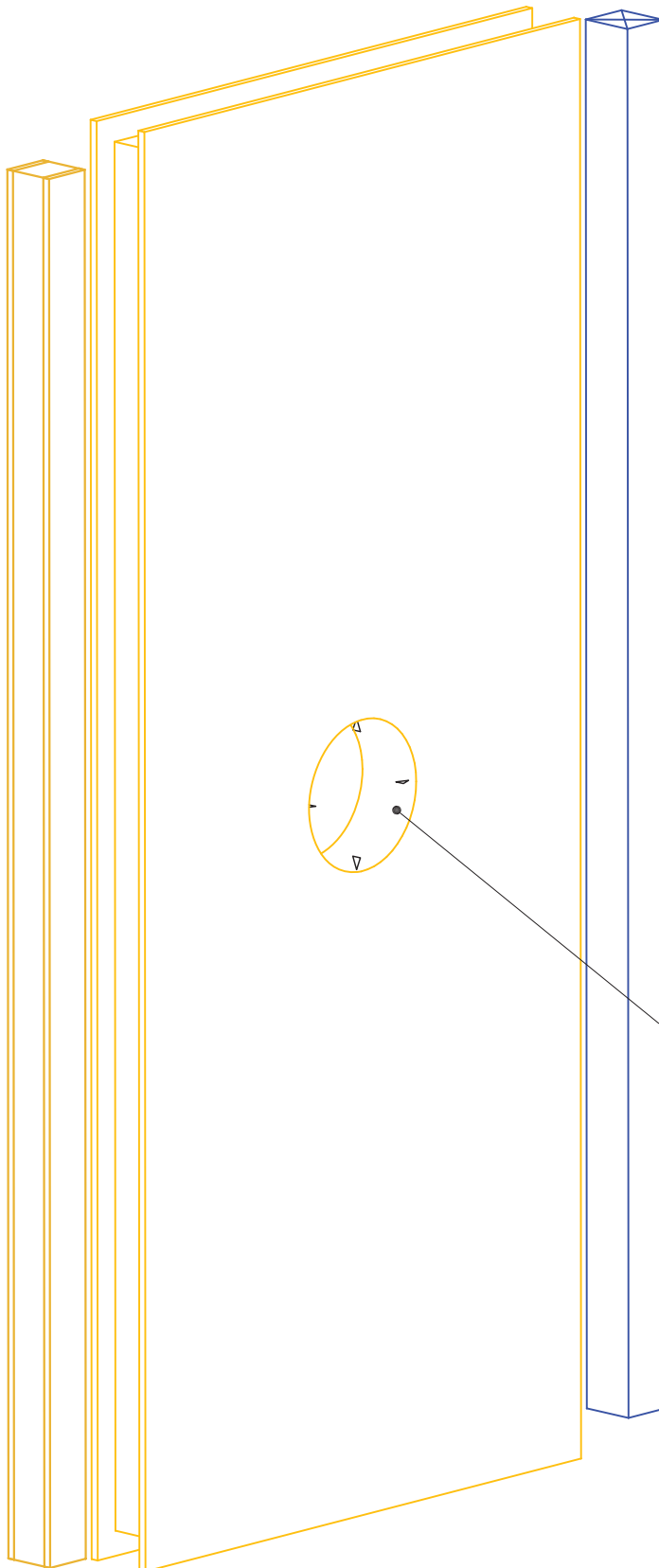
Scale: 1:10@A4

Date: 17/03/08

Drawn: W.M

Drawing No:





NOTE:

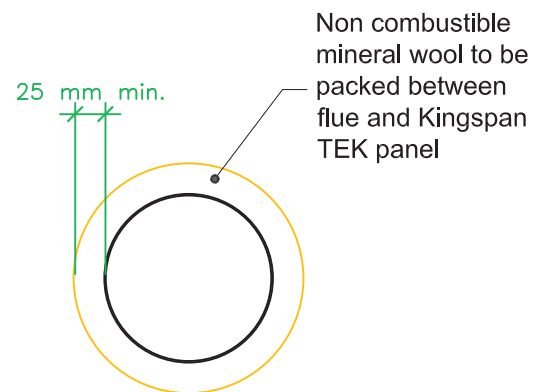
When an appliance is not suitable for direct mounting on a wall panel it should be separated from the wall structure by a 75 mm air gap or by 25 mm of non-combustible material. The latter is usually achieved by adding 12.5 mm thickness of non-combustible board to the plasterboard lining.

Wall mounted boilers should be fixed to the wall panel as per boiler manufacturer's instructions using fully threaded screws.

A formed opening is to be cut out of the panel 50 mm bigger in diameter than the flue, to receive the flue leaving a minimum 25 mm gap all round.

When twin walled flue is used the minimum distance is measured from the outer face of the inner flue.

Wall openings cut on site must be agreed with Kingspan Off-Site prior to cutting. Generally opening should be cut central to wall panels & minimum 500 mm from top of panel.



Front elevation - 1:10



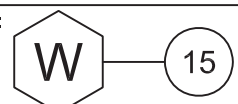
P.O. Box 7454, Kiln Farm,
Milton Keynes, MK11 3AB
Telephone 01908 266 200
Fax 01908 266 120
www.kingspanoffsite.com

Description:

Wall hung boiler installation

Scale: **NTS**
Date: **24/04/08**
Drawn: **W.M**

Drawing No:



Electricity meter box installation same as gas meter box installation as below

Cavity tray to extend 150 mm beyond each side of meter box, dressed breather membrane with weepholes to each side of meter box

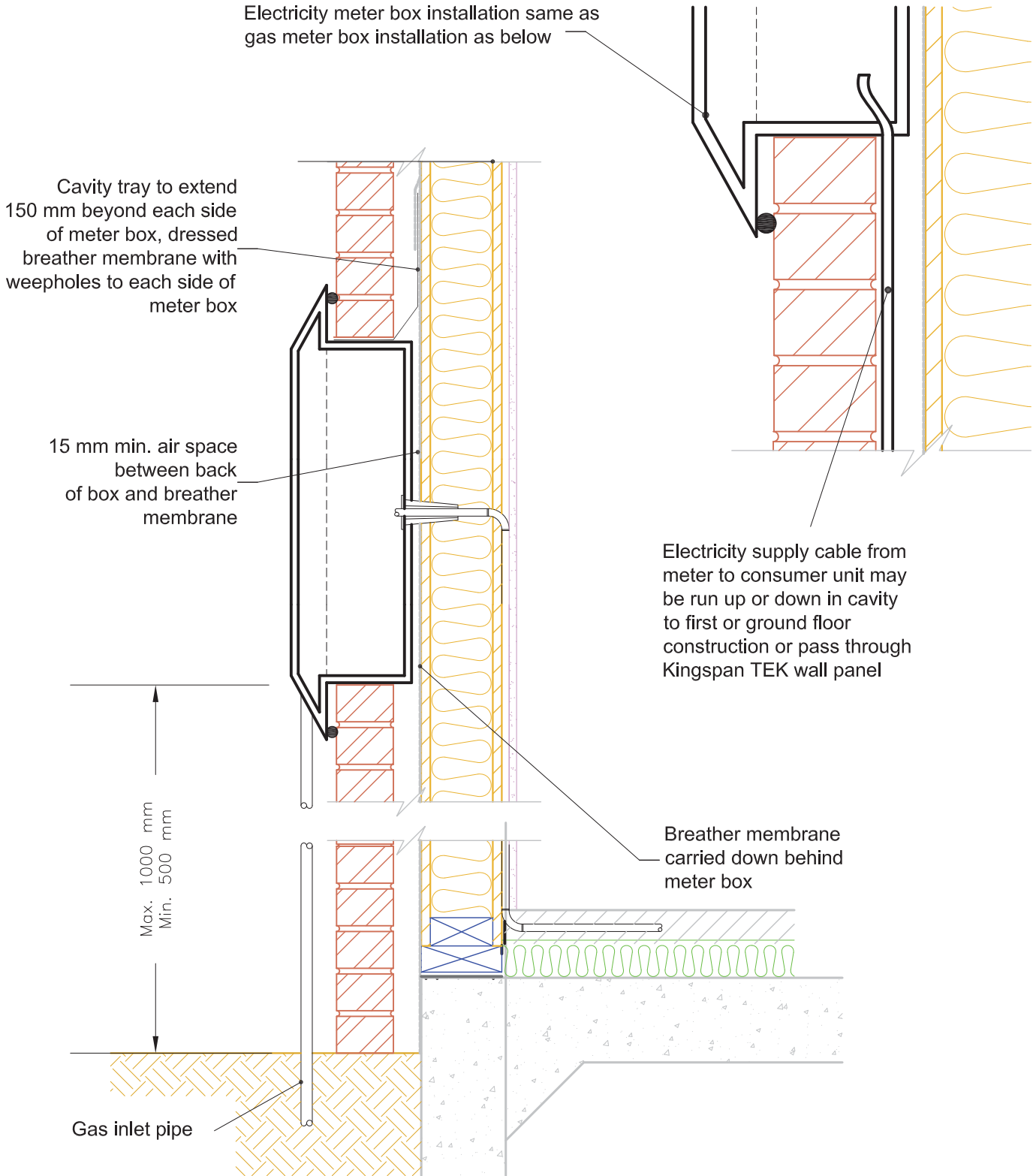
15 mm min. air space between back of box and breather membrane

Max. 1000 mm
Min. 500 mm

Gas inlet pipe

Electricity supply cable from meter to consumer unit may be run up or down in cavity to first or ground floor construction or pass through Kingspan TEK wall panel

Breather membrane carried down behind meter box



Off-Site

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Milton Keynes, MK11 3AB
Telephone 01908 266 200
Fax 01908 266 120
www.kingspanoffsite.com

Description:

Gas and electricity meter box installation

Scale: NTS

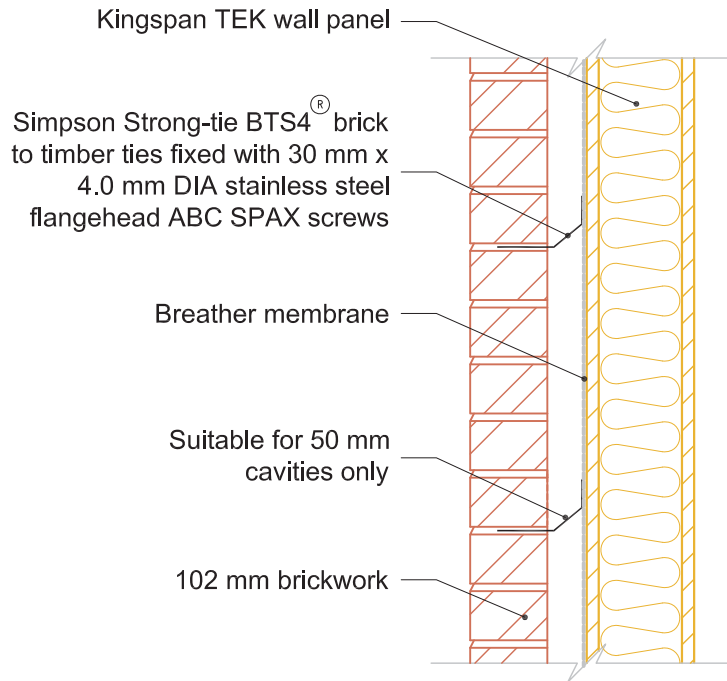
Date: 24/04/08

Drawn: W.M

Drawing No:



16



Density of ties (wind speed less than or equal to 52 m/sec) - 4.4 ties per m²
(spacing - 600 x 375 mm)

Density of ties (wind speed greater than 52 m/sec) - 7.0 ties per m²
(spacing - 600 x 225 mm)



P.O. Box 7454, Kiln Farm,
Milton Keynes, MK11 3AB
Telephone 01908 266 200
Fax 01908 266 120
www.kingspanoffsite.com

Description:

**External brick tie details
for building not exceeding
4 storeys high**

Scale:	NTS
Date:	17/03/08
Drawn:	W.M

Drawing No:

