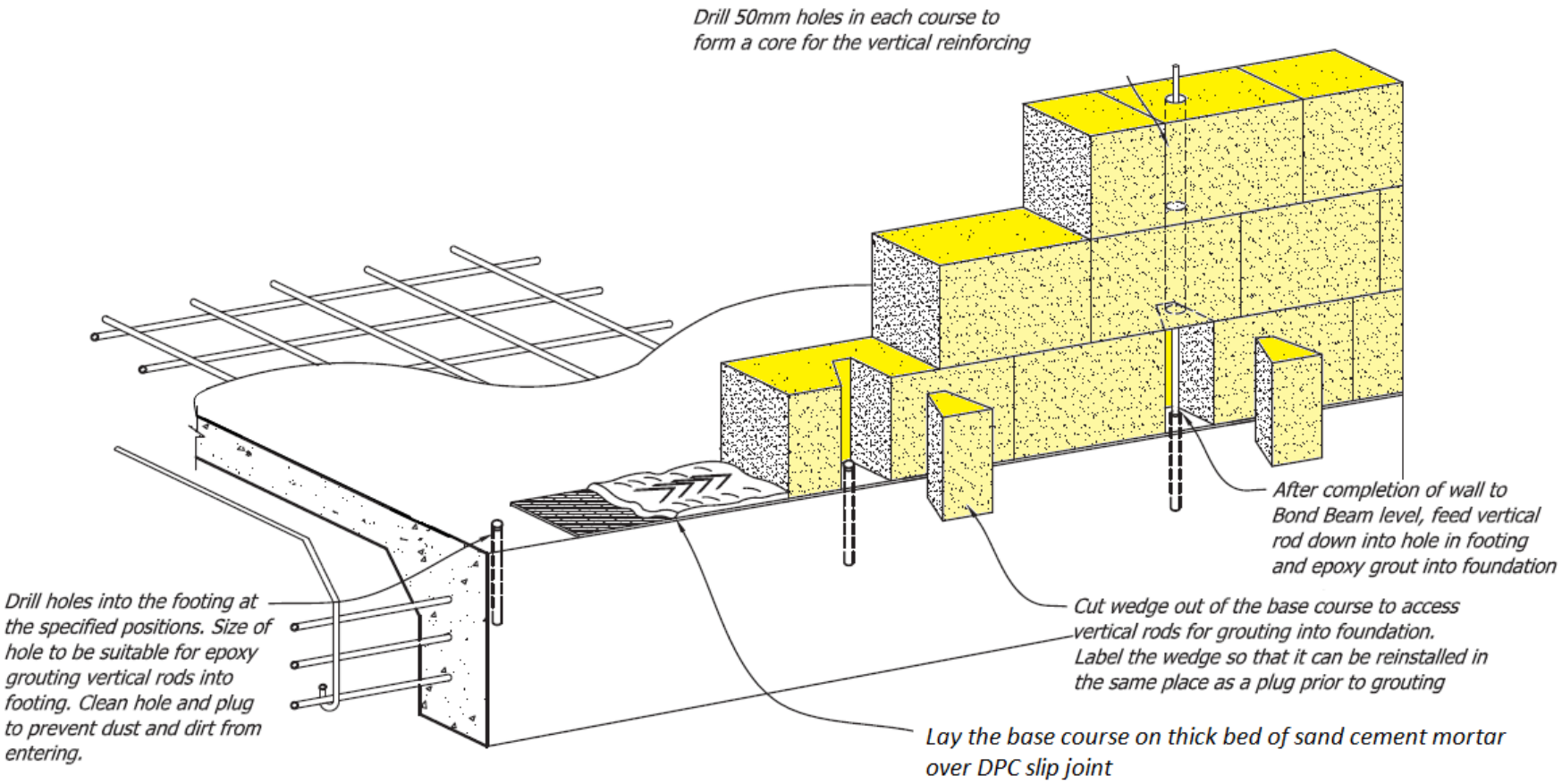
AERATED CONCRETE

Alternative Solution to E2/AS1 Masonry

AAC BLOCK construction details

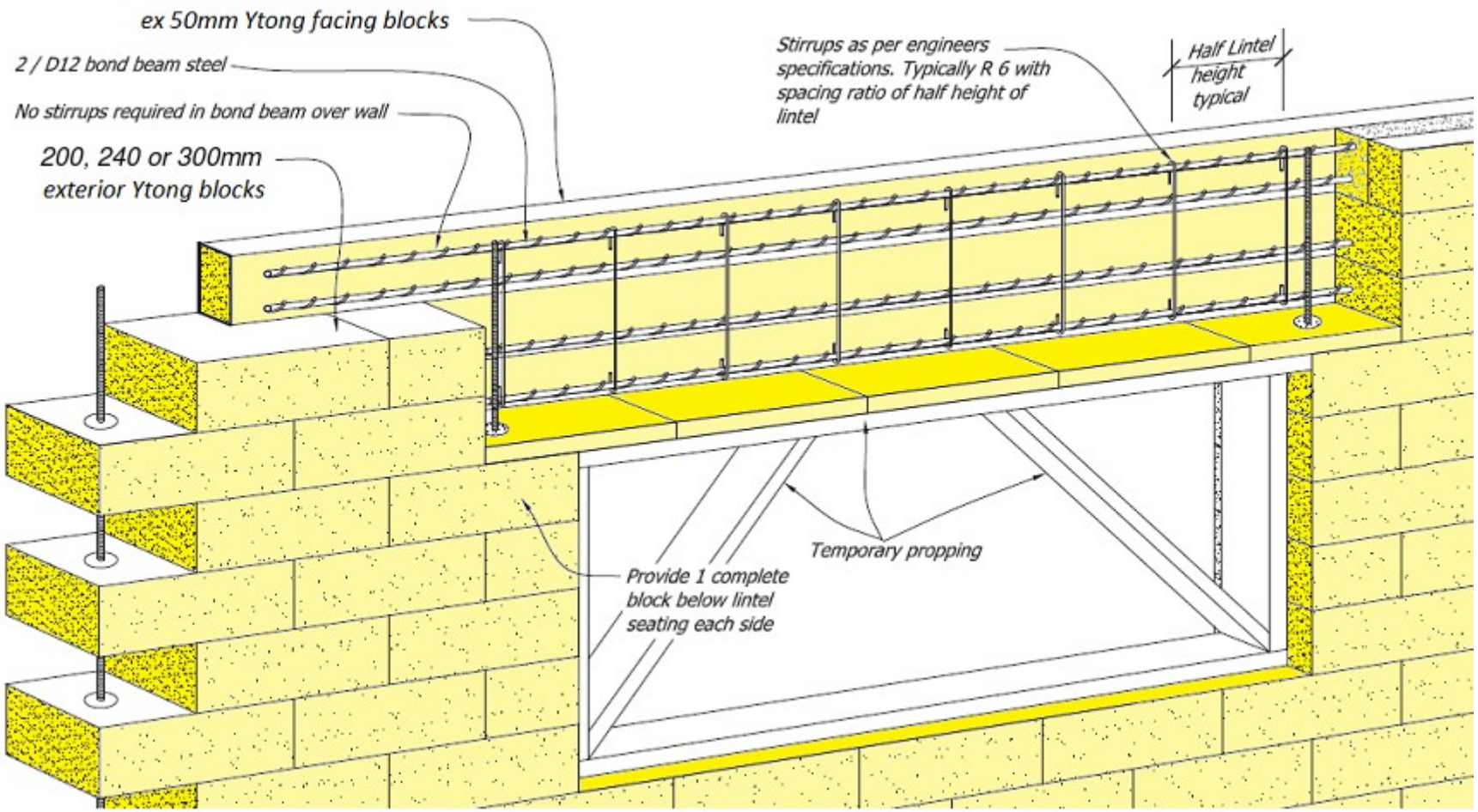
Contents

AAC Blocks
First course setout

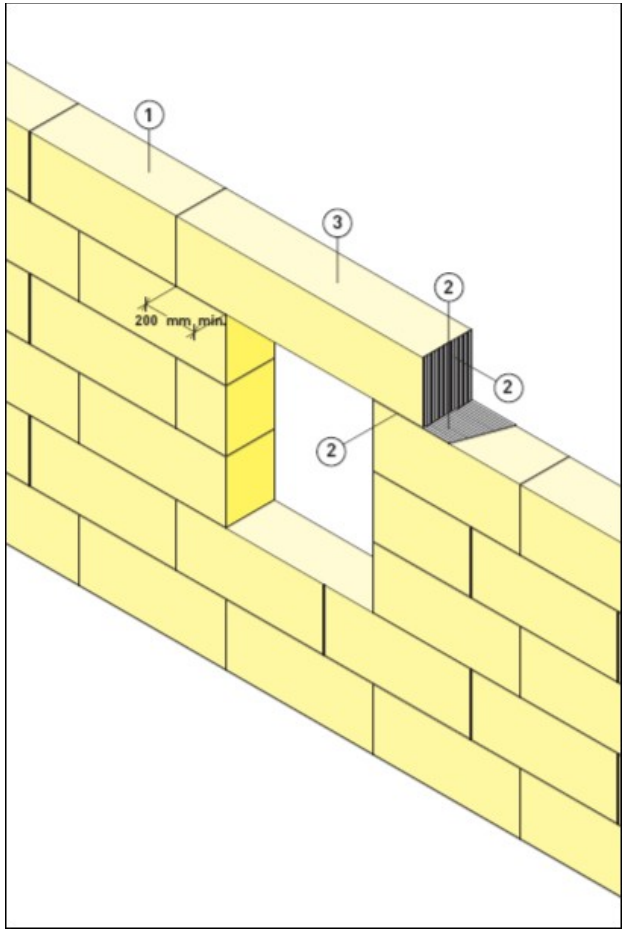


Lintels

Lintel insitu construction



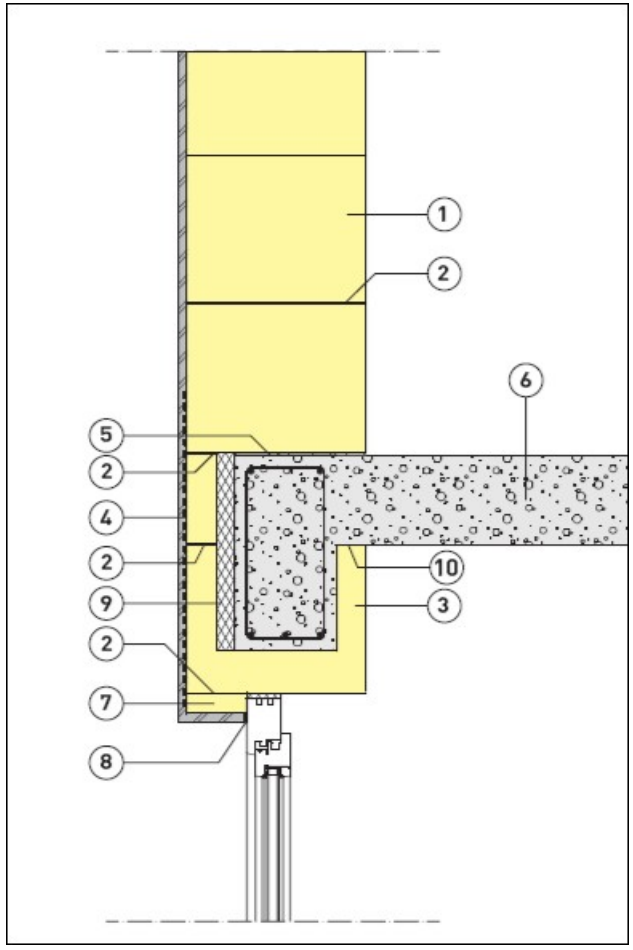
Lintels
AAC reinforced solid lintel



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Arrow pointing down
5. Minimum 200mm either side

Lintels

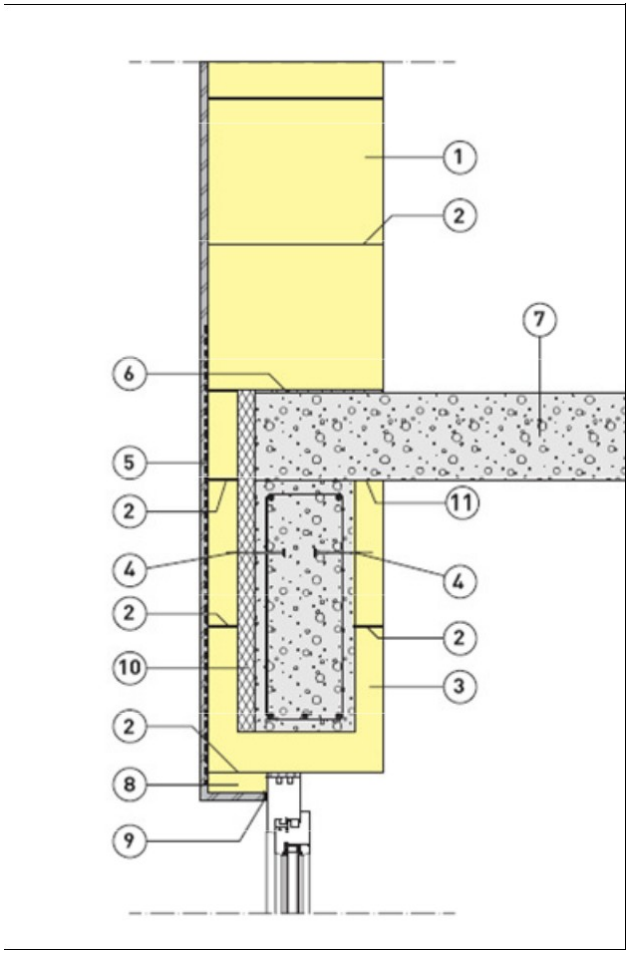
AAC Lintel – connection with concrete floor slab / ceiling



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Reinforcing mesh
5. Mortar
6. Concrete floor / ceiling
7. AAC block – to be cut on site and glued to lintel
8. Elastic joint
9. Insulation
10. Soft joint

Lintels

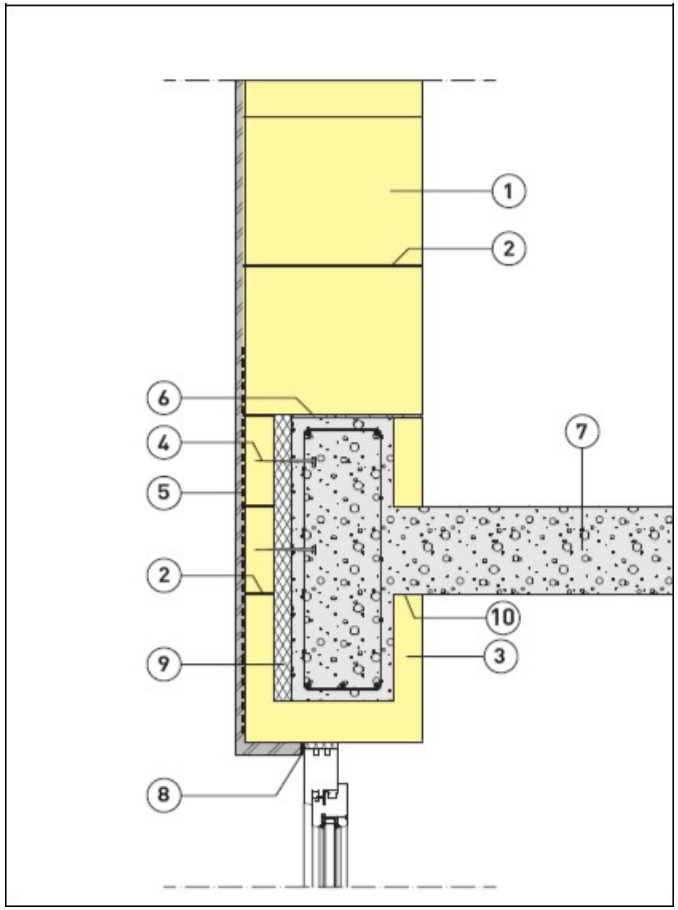
AAC Lintel – connection with concrete floor slab / ceiling



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Gunnebo nail
5. Reinforcing mesh
6. Mortar
7. Concrete floor / ceiling
8. AAC block – to be cut on site and glued to lintel
9. Elastic joint
10. Insulation
11. Soft joint

Lintels

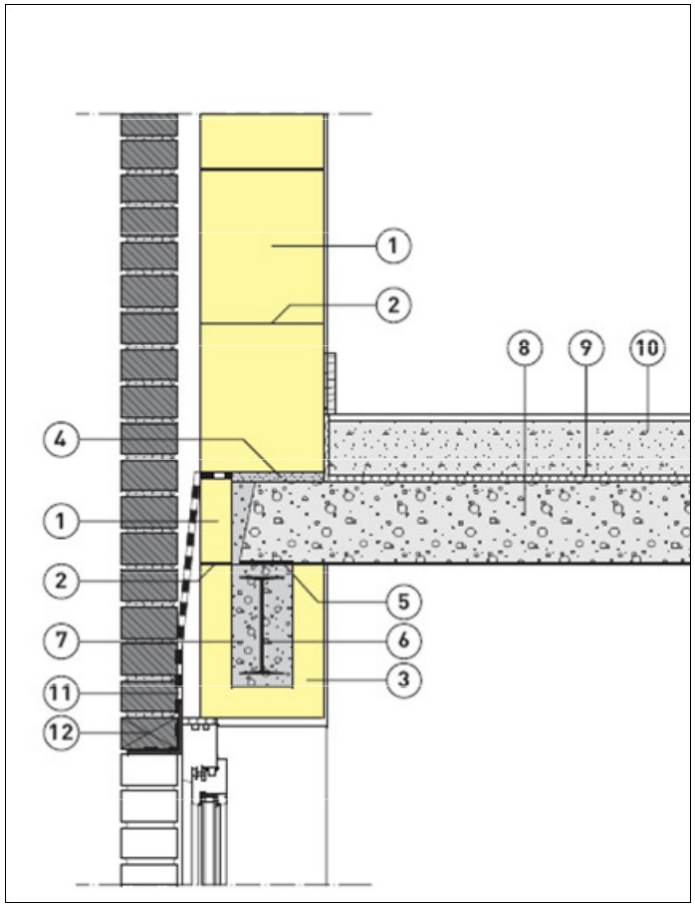
AAC Lintel – connection with concrete floor slab / ceiling



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Gunnebo nail
5. Reinforcing mesh
6. Mortar
7. Concrete floor / ceiling
8. Elastic joint
9. Insulation
10. Soft joint

Lintels

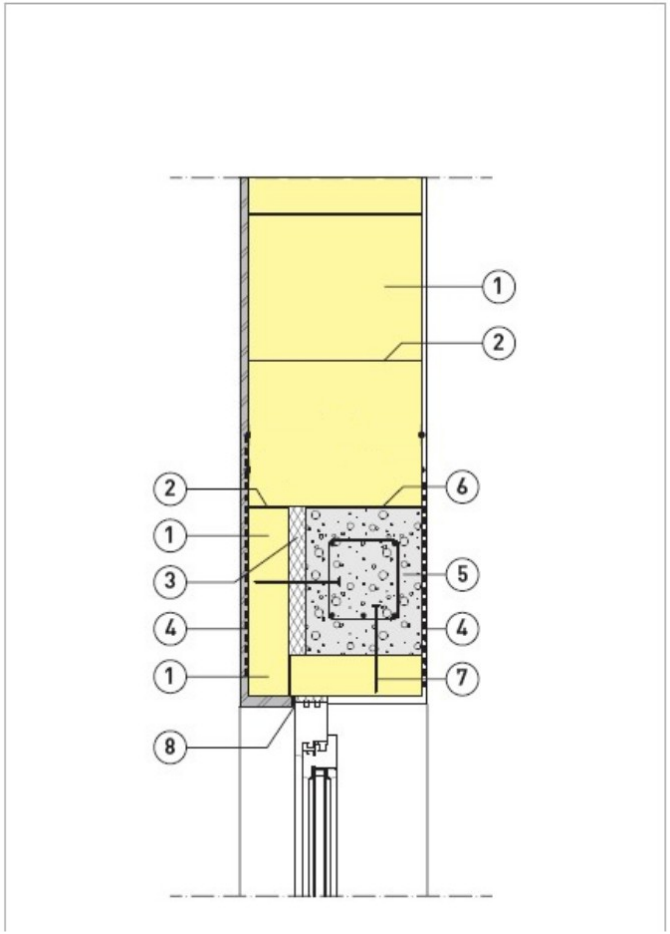
AAC Lintel – Detail bearing of ceiling on AAC lintel



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Mortar
5. Roofing or neoprene >4mm
6. Steel beam
7. Concrete
8. Concrete ceiling
9. Sound insulation
10. Floor screed
11. DPC
12. Open perpend

Lintels

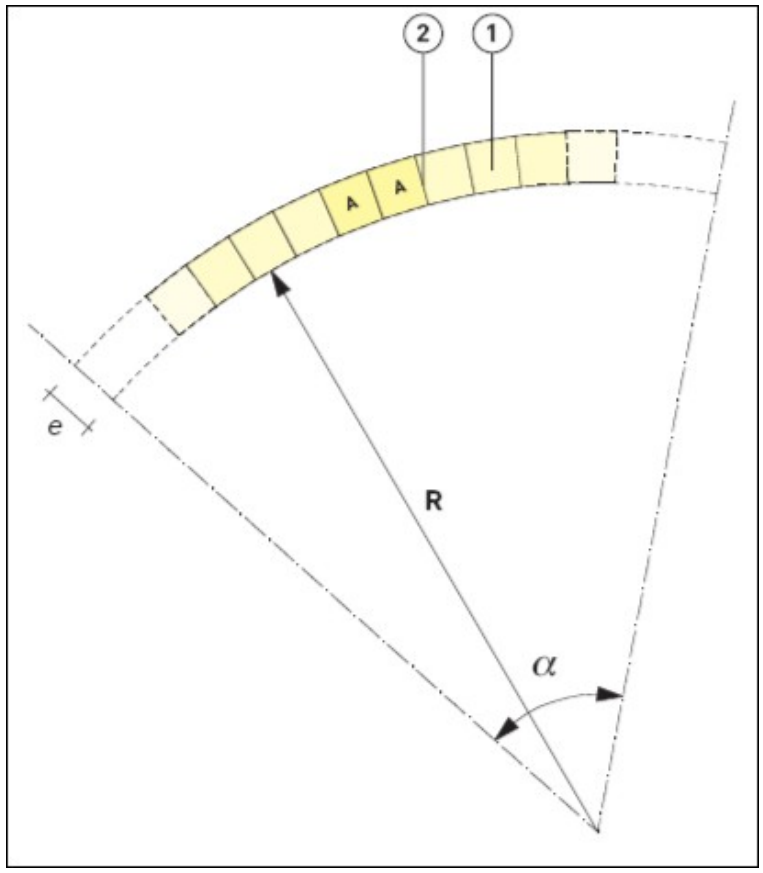
Other Lintels – Solid wall: concrete lintel



1. AAC block
2. AAC fix - thin joint mortar
3. Thermal insulation
4. Reinforcing mesh
5. Concrete lintel
6. Polyethylene foil
7. Gunnebo- or aluminium -nail
8. Expansion joint

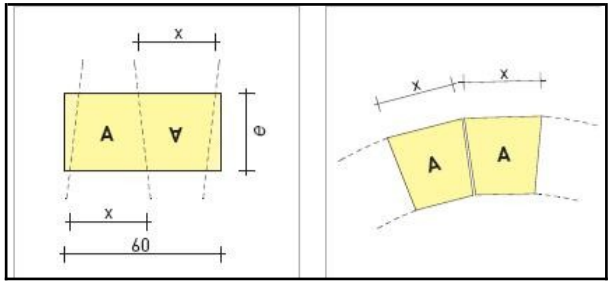
Round Wall

Cut principle

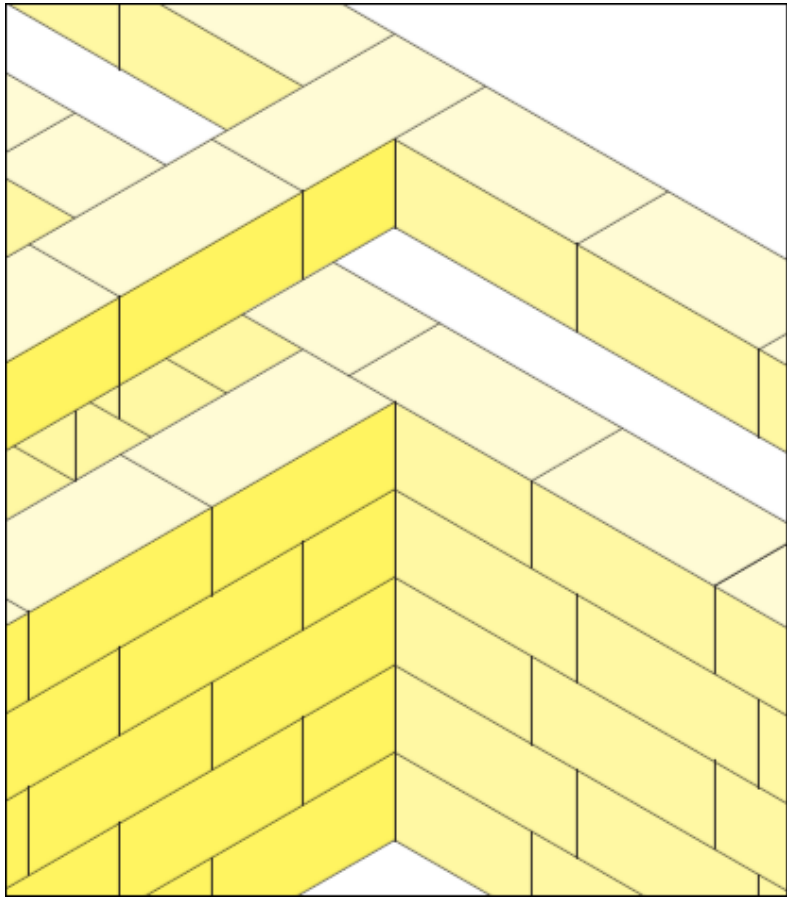


1. AAC blocks - cut with band-saw
2. AAC fix - thin joint mortar

α Angle
e Block thickness
R Internal radius



Wall connection
Load-bearing walls



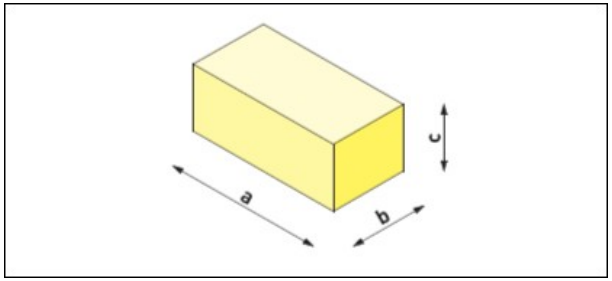
PROPERTIES OF THE BLOCK

Dimensions:

a. 450mm

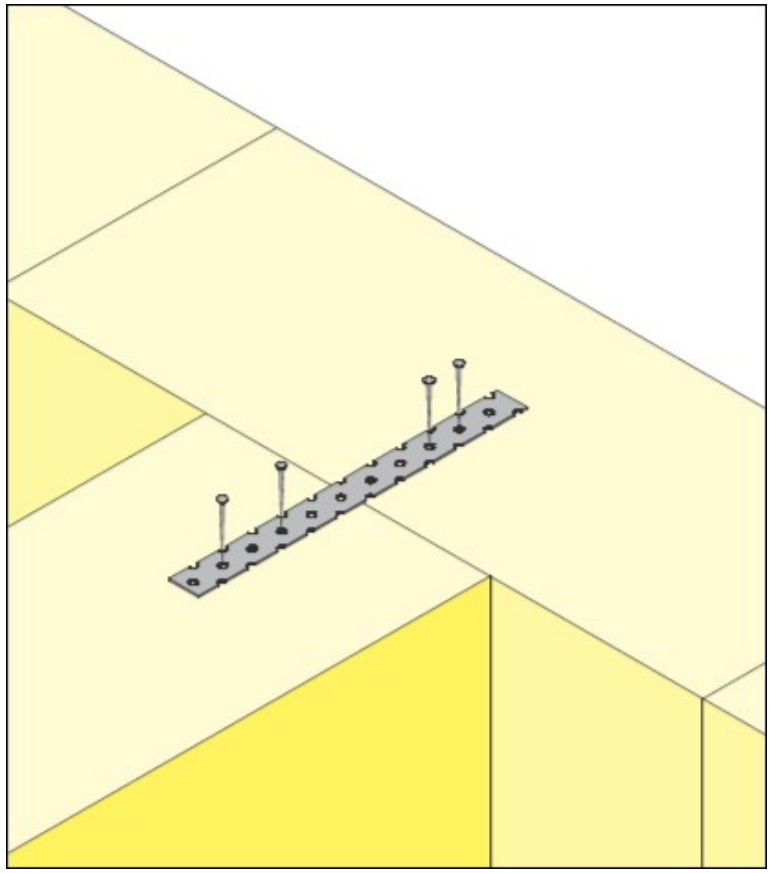
b. Thickness 150, 175, 200, 240, 300mm

c. 200mm

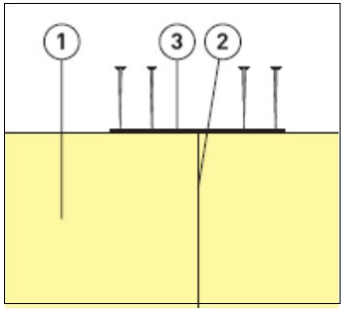


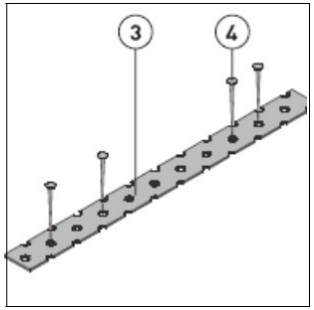
Wall Connection

Load-bearing walls



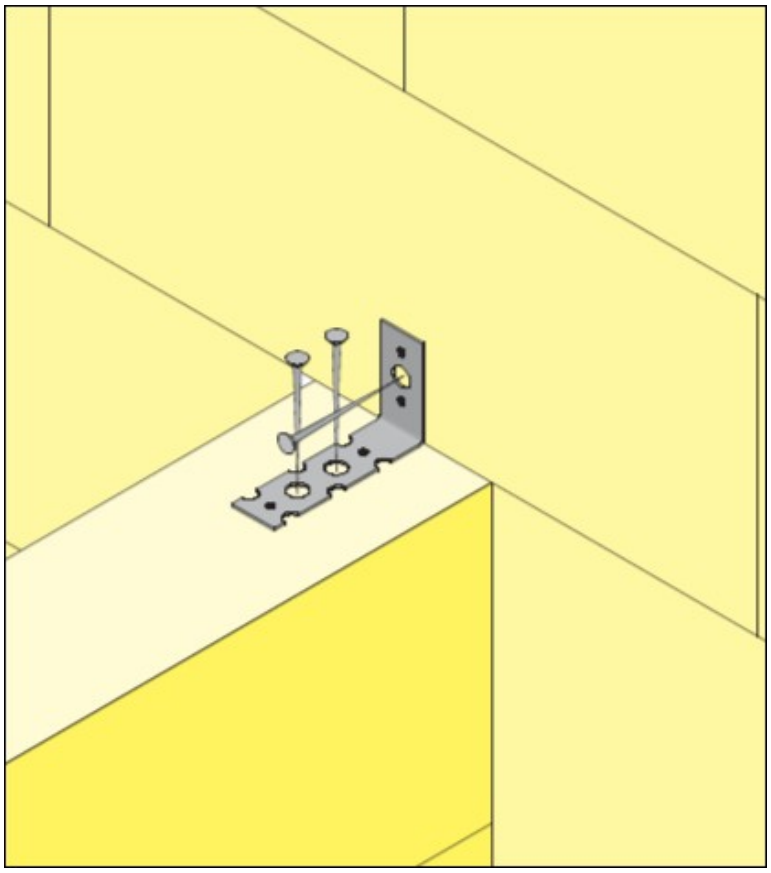
1. AAC wall
2. AAC fix - thin joint mortar
3. Coupling strips
4. Gunnebo nail



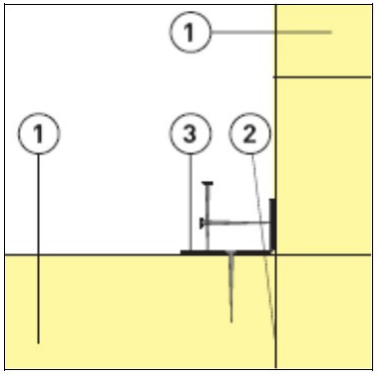


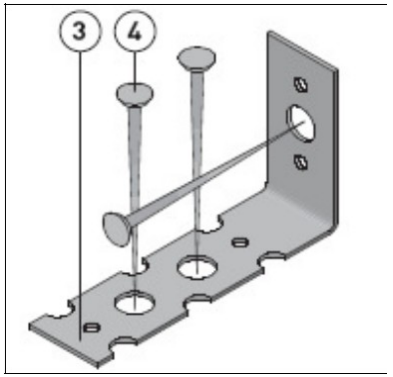
Wall Connection

Load-bearing walls with non load-bearing wall



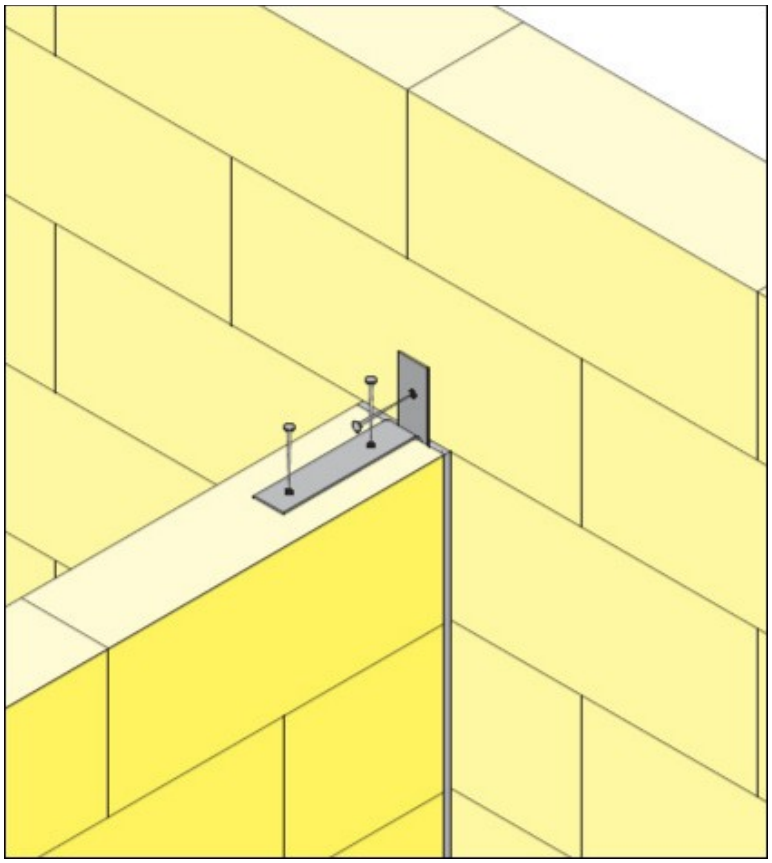
1. AAC wall
2. AAC fix - thin joint mortar
3. L - anchor
4. Gunnebo nail



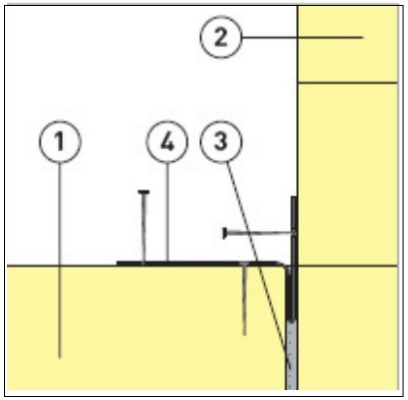


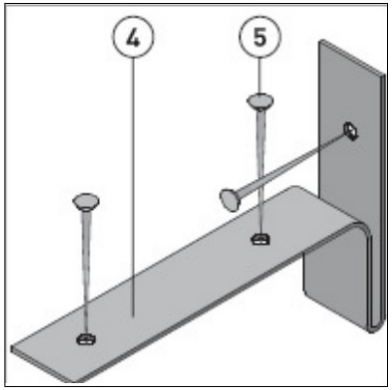
Wall Connection

Load-bearing walls with non load-bearing wall



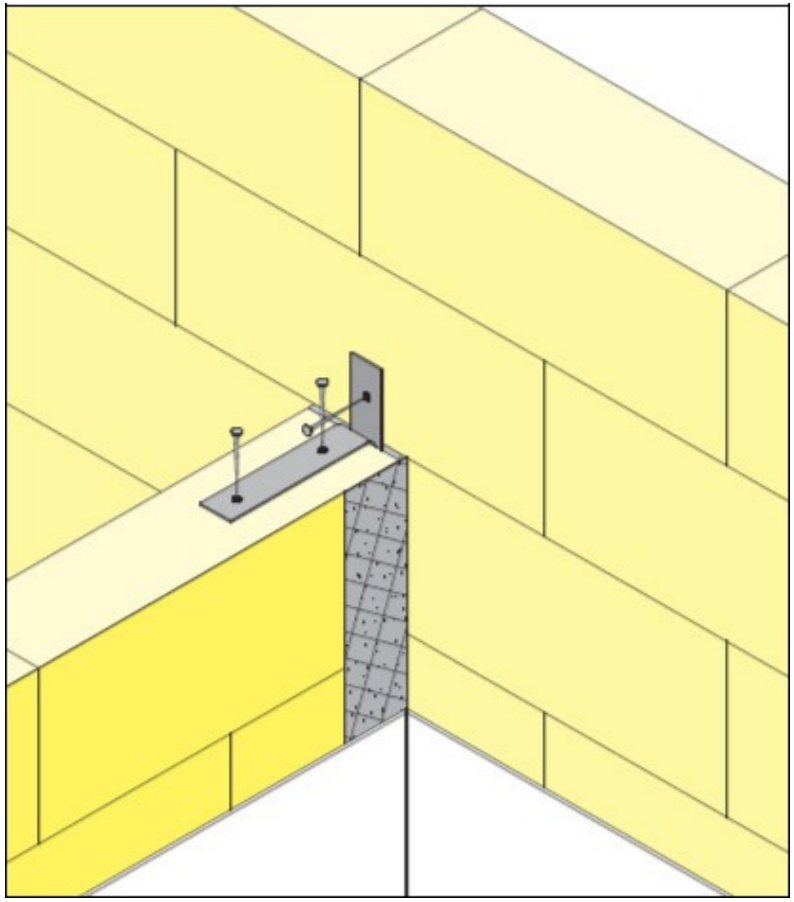
1. AAC wall
2. AAC wall or wall of other material
3. Polyurethane foam
4. Resilient anchor – “Veeranker”
5. Gunnebo nail



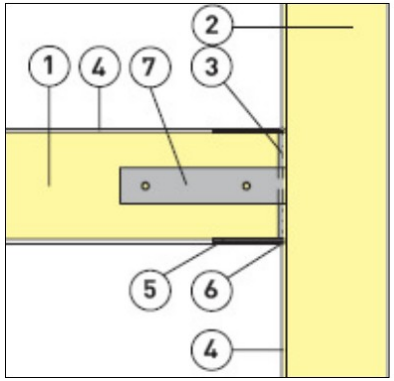


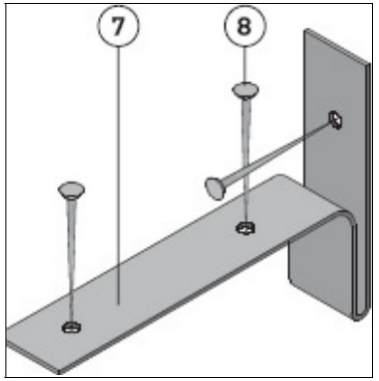
Wall Connection

Load-bearing walls with non load-bearing wall free movement allowed



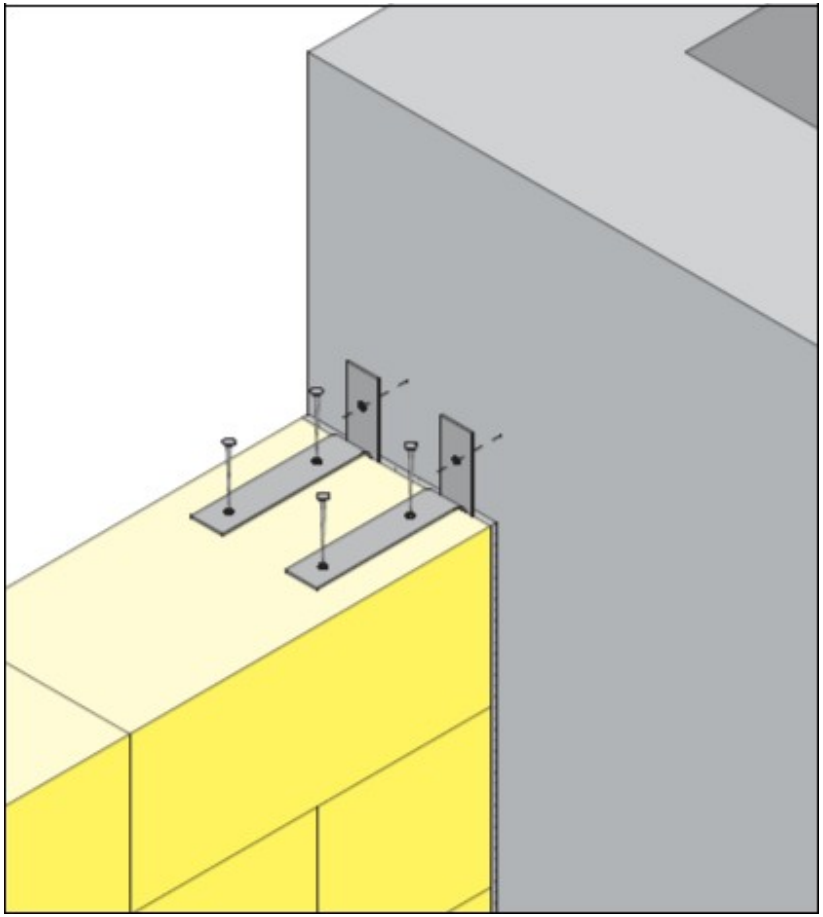
1. AAC wall
2. AAC wall or wall of other material
3. Polyurethane foam
4. Finish
5. Glass fibre mesh
6. Cut into plaster
7. Resilient anchor – “Veeranker”
8. Gunnebo nail



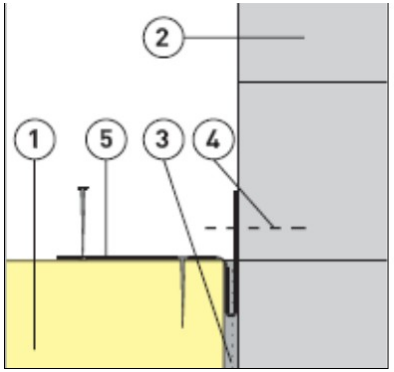


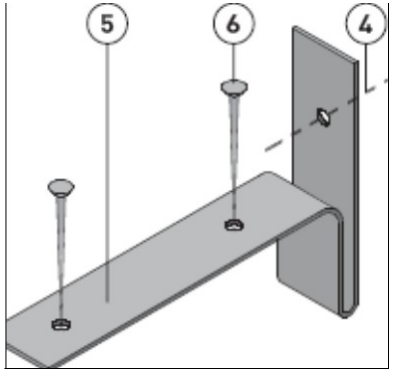
Wall Connection

New AAC wall to existing wall



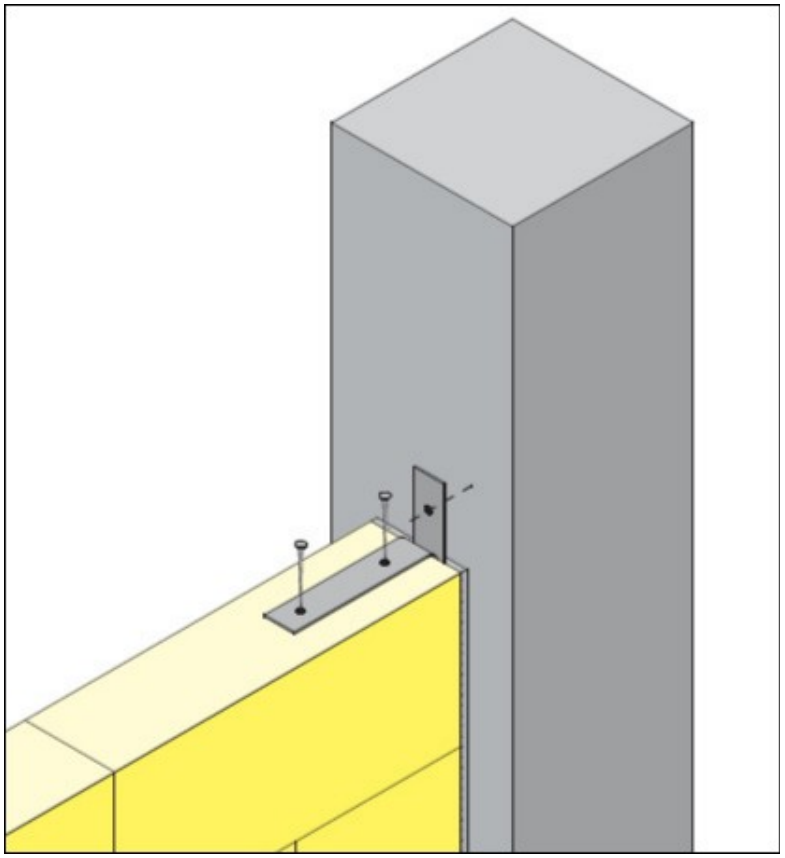
1. AAC wall
2. Existing wall
3. Polyurethane foam
4. Fixed to existing wall
5. Resilient anchor – “Veeranker”
6. Gunnebo nail



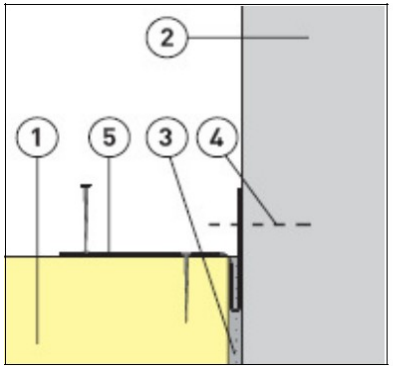


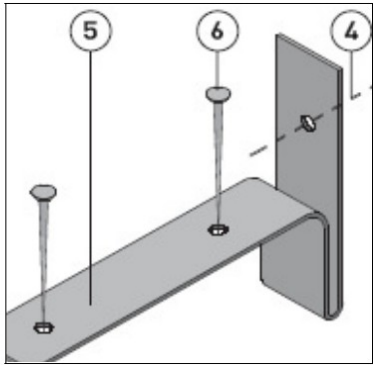
Wall Connection / Column

AAC wall to a column



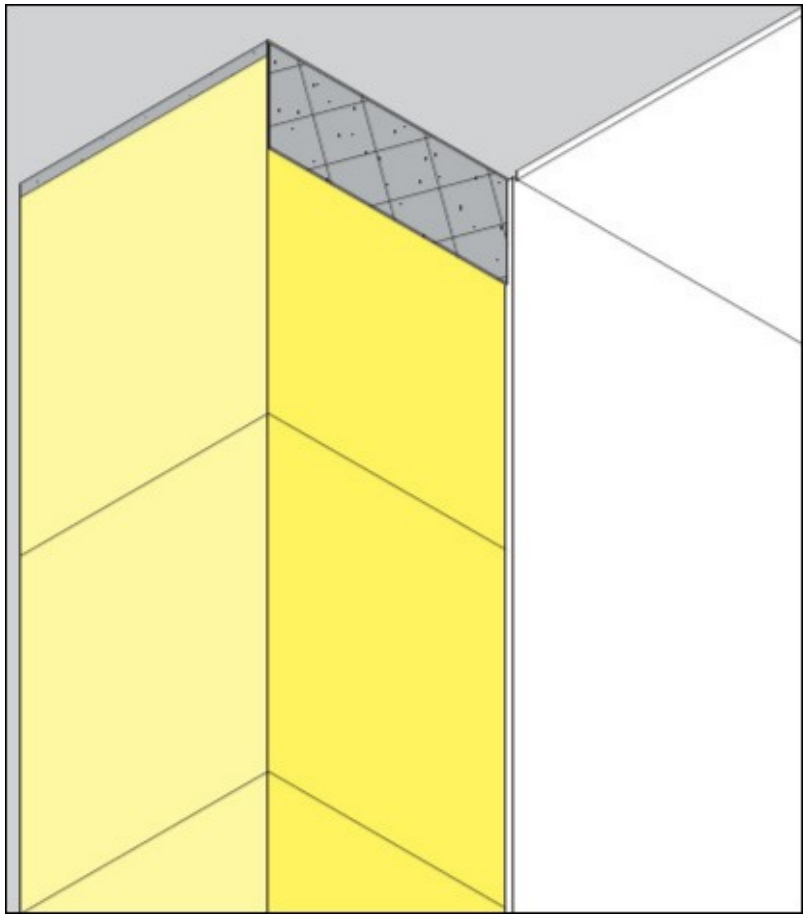
1. AAC wall
2. Concrete column
3. Polyurethane foam
4. Fixed to column
5. Resilient anchor – “Veeranker”
6. Gunnebo nail



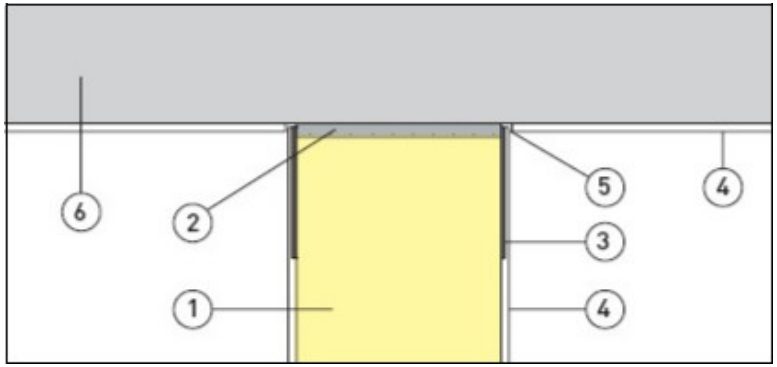


Wall Connections / Ceiling

Load-bearing wall to a ceiling

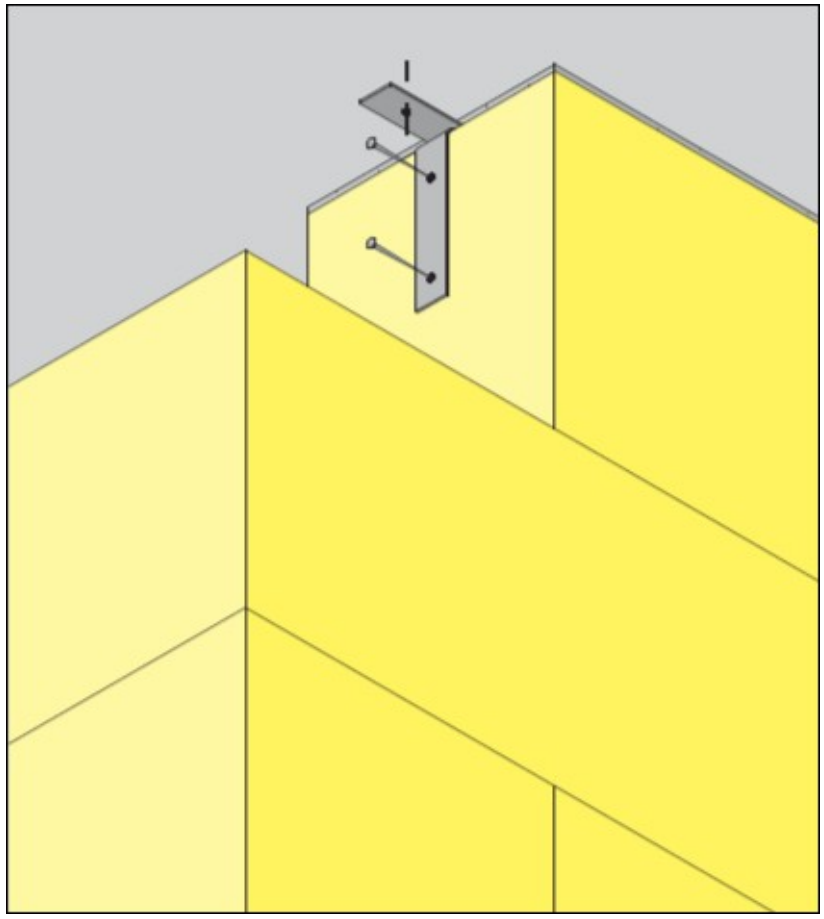


1. AAC wall
2. Polyurethane foam
3. Glass fibre mesh
4. Finish
5. Cut into finish
6. Ceiling

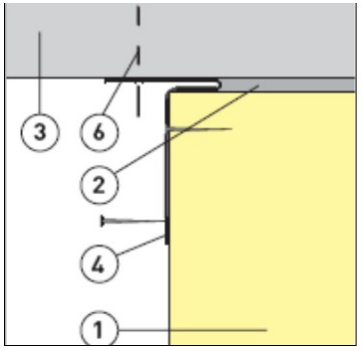


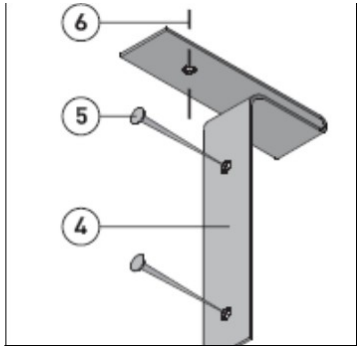
Wall Connections / Ceiling

Non-bearing wall to a ceiling

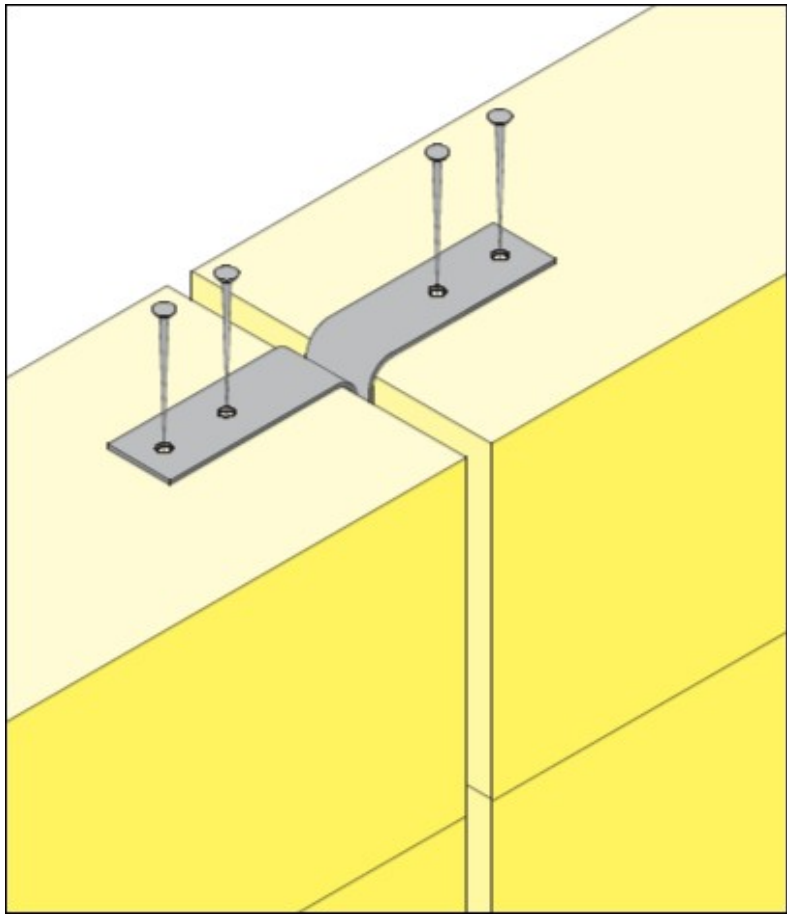


1. AAC wall
2. Polyurethane foam
3. Ceiling
4. Resilient anchor – “Veeranker”
5. Gunnebo nail
6. Fixed to ceiling

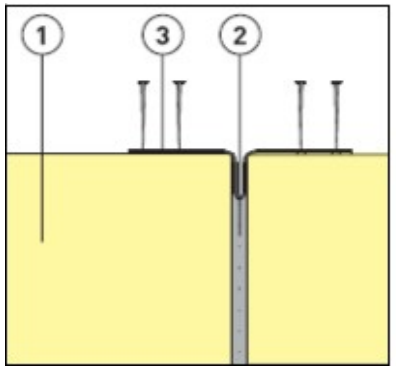




Expansion Joints
with dilatation anchors

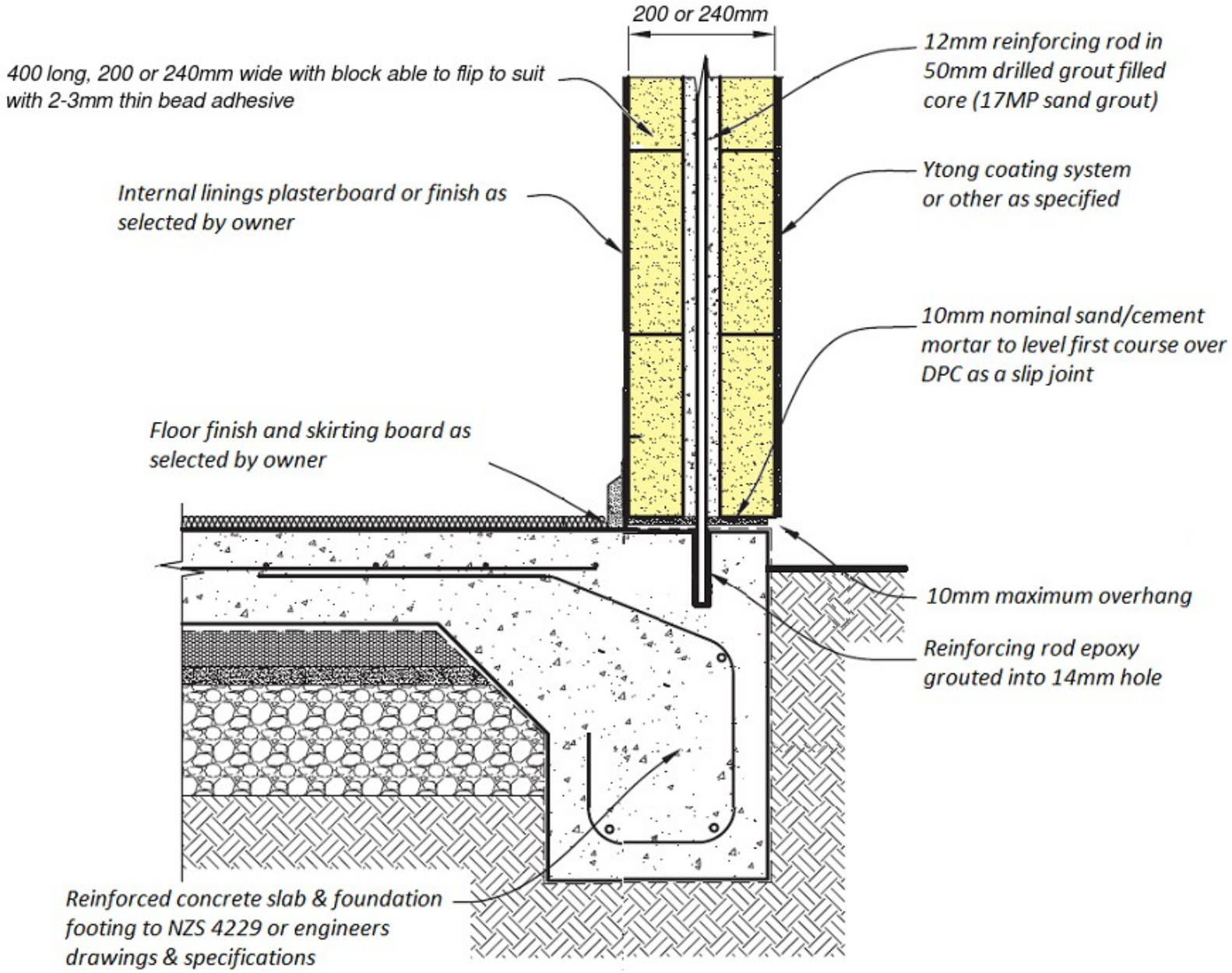


1. AAC wall
2. Polyurethane foam
3. Dilatation anchor
4. Gunnebo nail



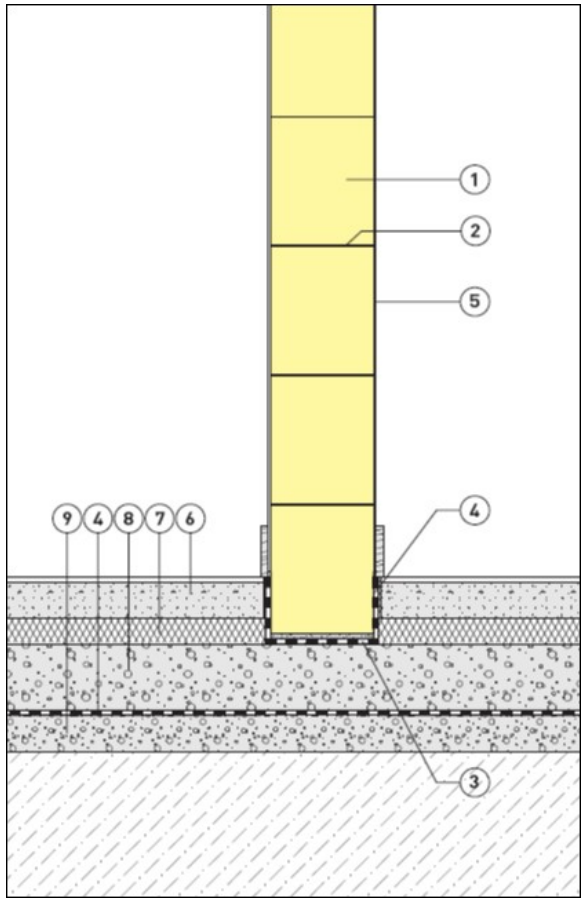
Foundation

AAC foundation 200 or 240mm wide



Wall/Foundation

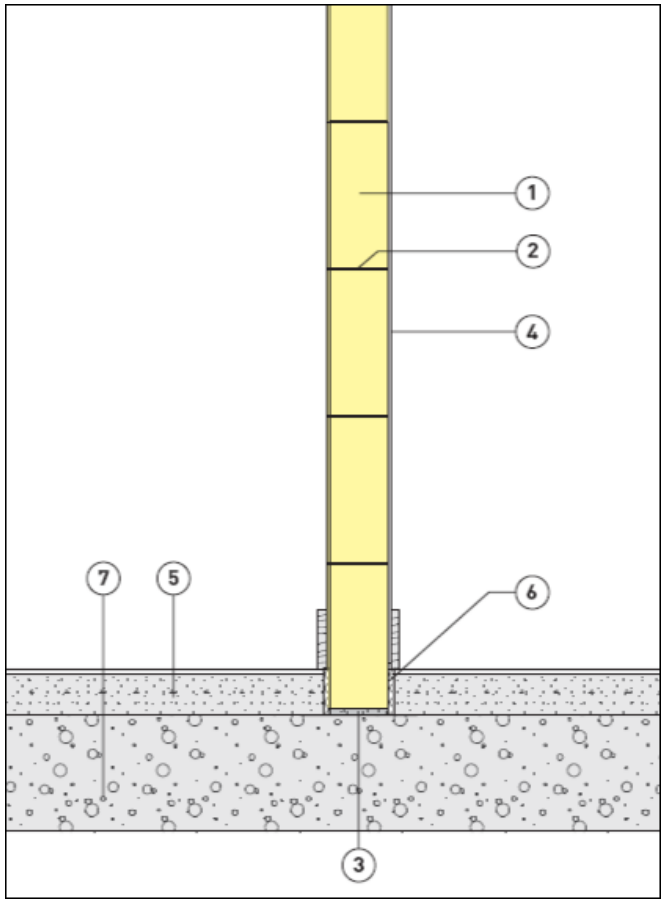
Non load-bearing internal AAC wall on concrete floor



1. AAC block
2. AAC fix - thin joint mortar
3. Mortar
4. Waterproofing
5. Plaster
6. Cement screed
7. Thermal insulation
8. Concrete floor
9. Base course

Wall/Foundation

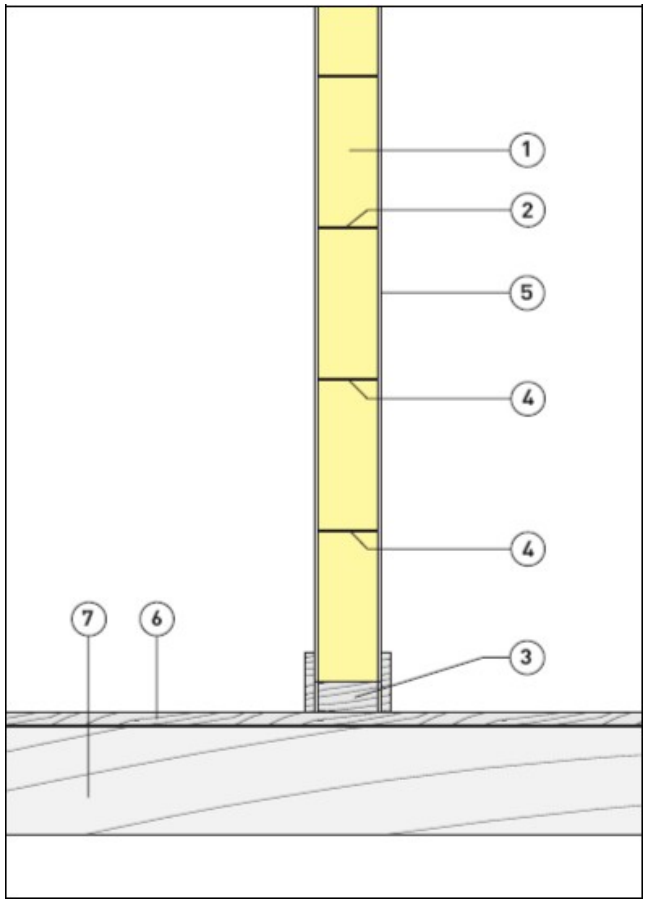
Non load-bearing internal AAC wall on concrete floor



1. AAC block
2. AAC fix - thin joint mortar
3. Mortar
4. Plaster
5. Cement screed
6. Insulation
7. Concrete floor

Wall/Foundation

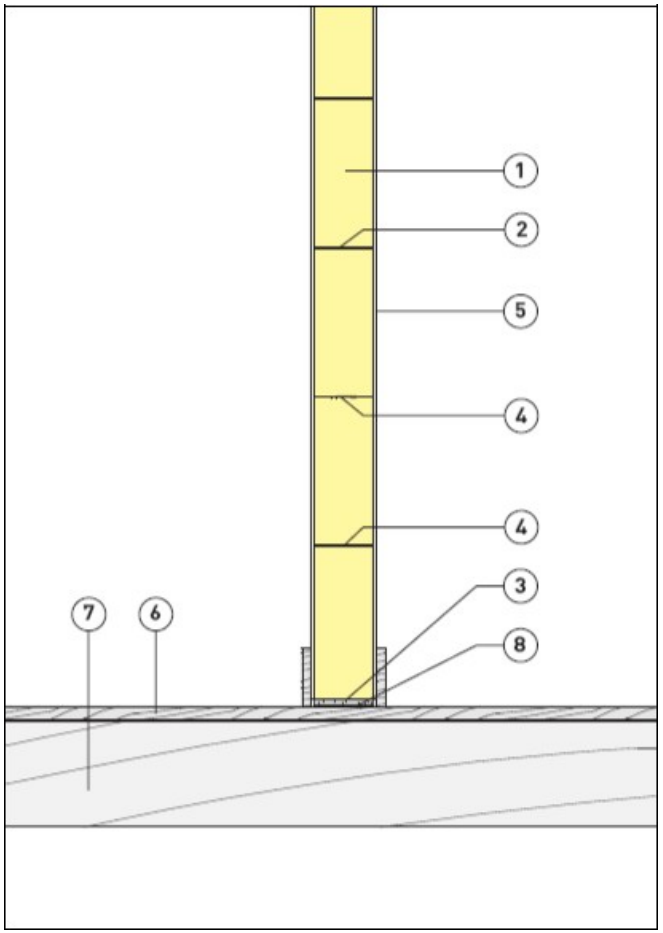
Non load-bearing internal AAC wall on timber floor



1. AAC block
2. AAC fix - thin joint mortar
3. Timber batten
4. Steel Reinforcing
5. Plaster
6. Timber floor
7. Timber beams

Wall/Foundation

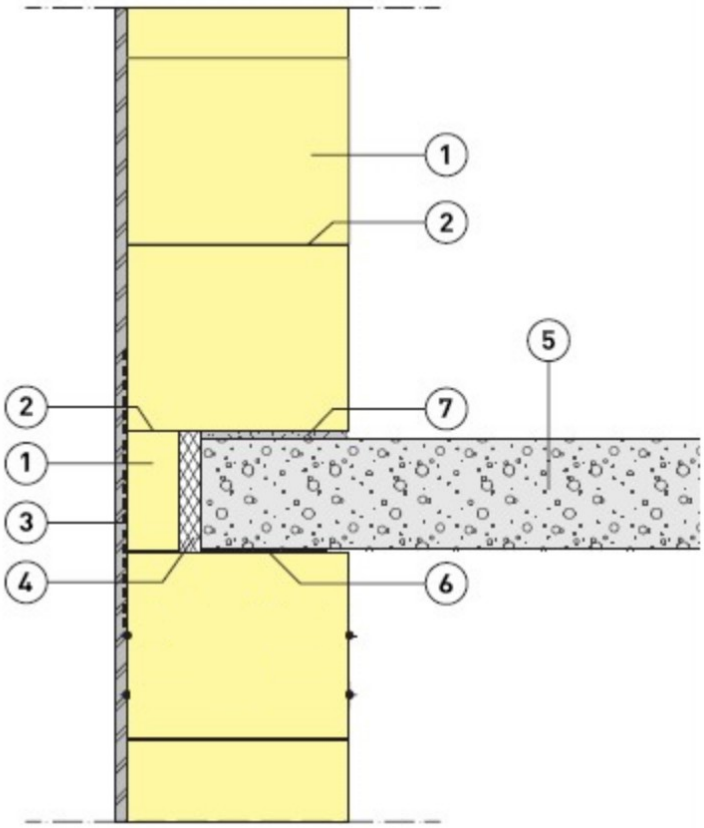
Non load-bearing internal AAC wall on timber floor



1. AAC block
2. AAC fix - thin joint mortar
3. Timber batten
4. Steel Reinforcing
5. Internal plaster
6. Timber floor
7. Timber beams
8. Polyethylene foil

Wall/Floor Slab

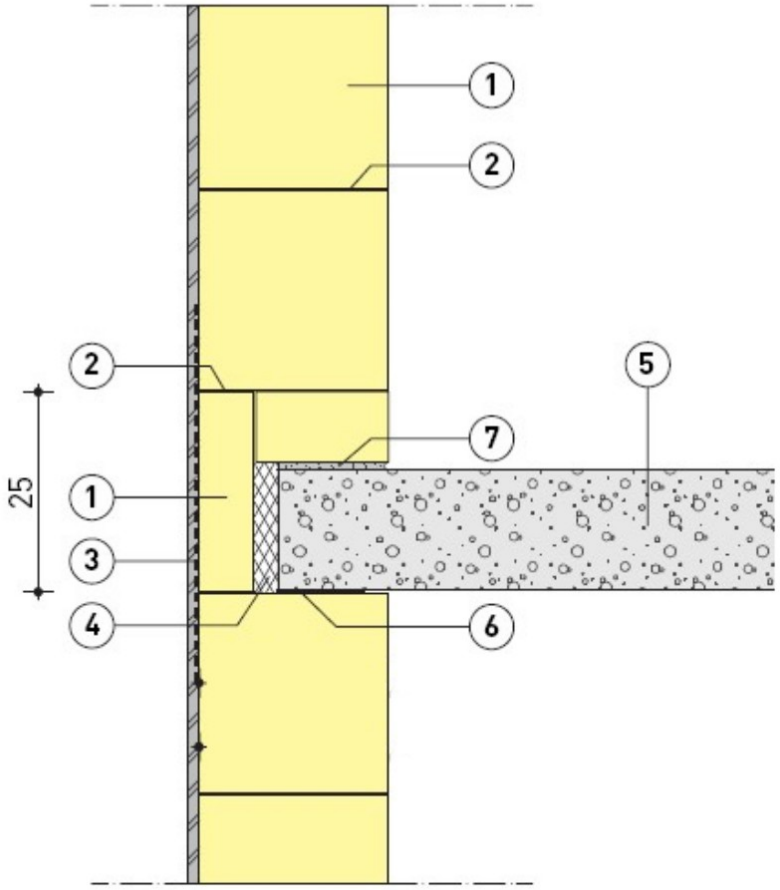
Placement of concrete floor on solid 300mm AAC wall



1. AAC block
2. AAC fix - thin joint mortar
3. Reinforcing mesh laid in render
4. Thermal insulation – type PU
5. Concrete floor
6. Bituminous felt or neoprene min. thickness 4 mm
7. Mortar

Wall/Floor Slab

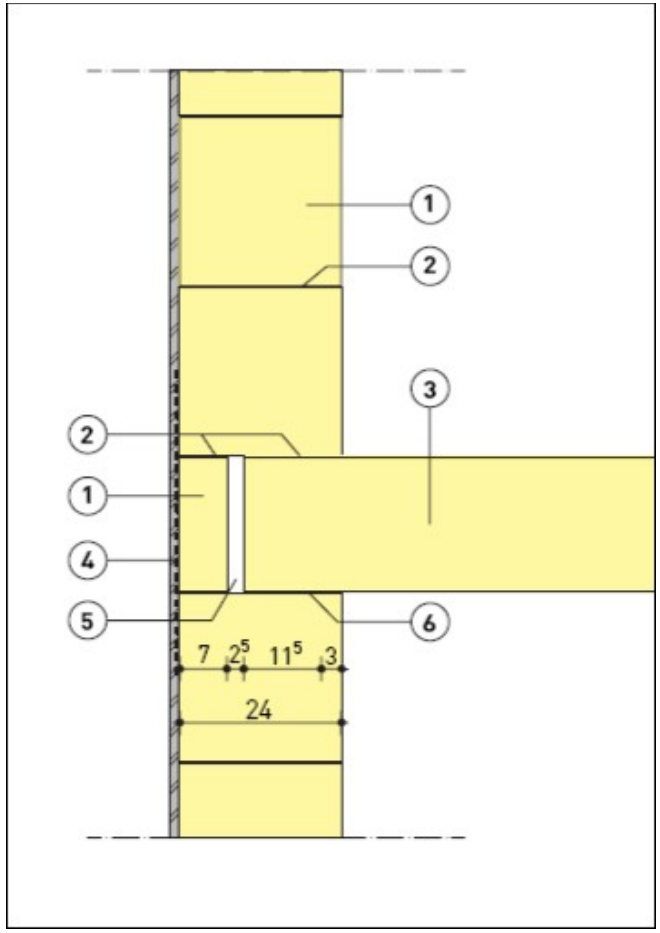
Placement of concrete floor on solid 250mm AAC wall



1. AAC block
2. AAC fix - thin joint mortar
3. Reinforcing mesh laid in render
4. Thermal insulation – type PU
5. Concrete floor / hollow core floor slabs / beam & blocks
6. Bituminous felt or neoprene min. thickness 4 mm
7. Mortar

Wall/Floor Slab

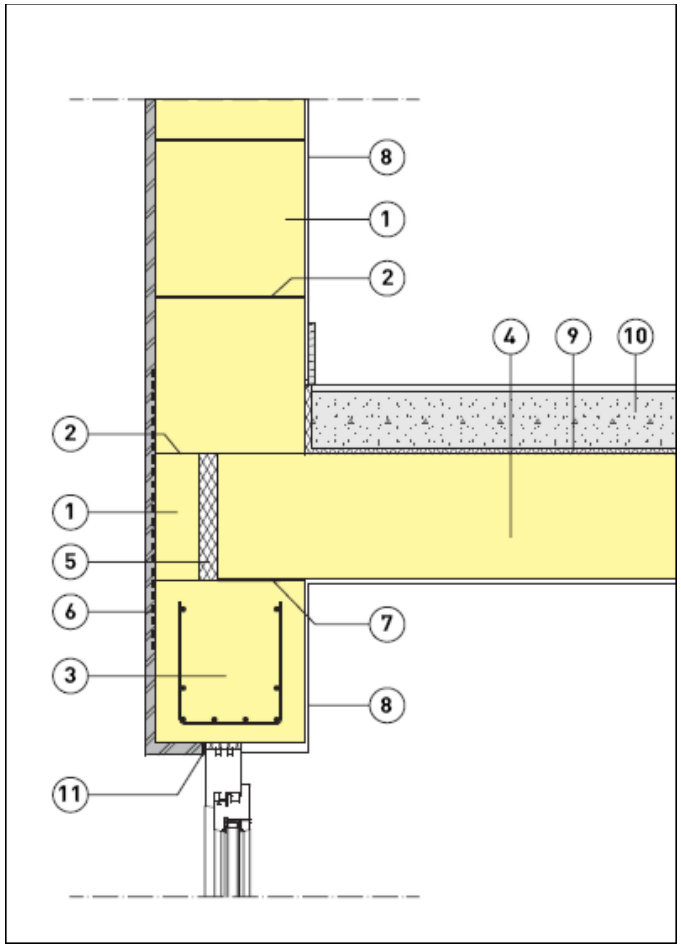
Placement of AAC floor on solid 250mm AAC wall



1. AAC block
2. Ytocol / AAC fix - thin joint mortar
3. AAC floor panels
4. Reinforcing mesh laid in render
5. Cavity or insulation
6. Bituminous felt or neoprene
   min. thickness 4 mm

Wall/Floor Slab

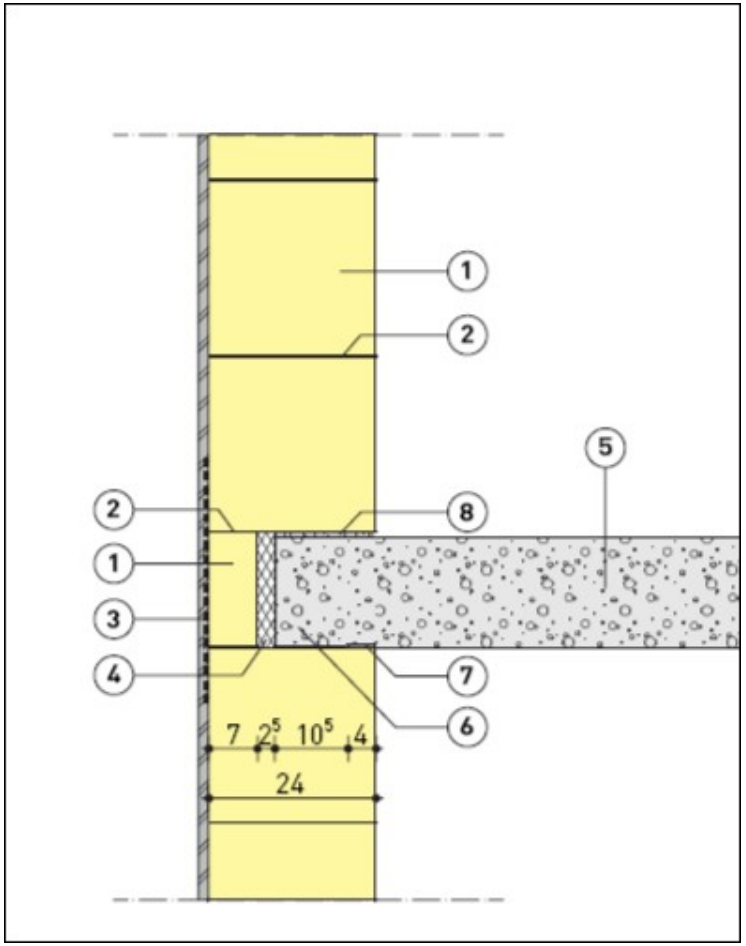
AAC wall – placement of AAC floor on AAC lintel



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. AAC floor panels
5. Thermal insulation
6. Reinforcing mesh laid in render
7. Bituminous felt or neoprene min. thickness 4 mm
8. Plaster
9. Sound insulation
10. Cement floor
11. Flexible joint

Wall/Floor Slab

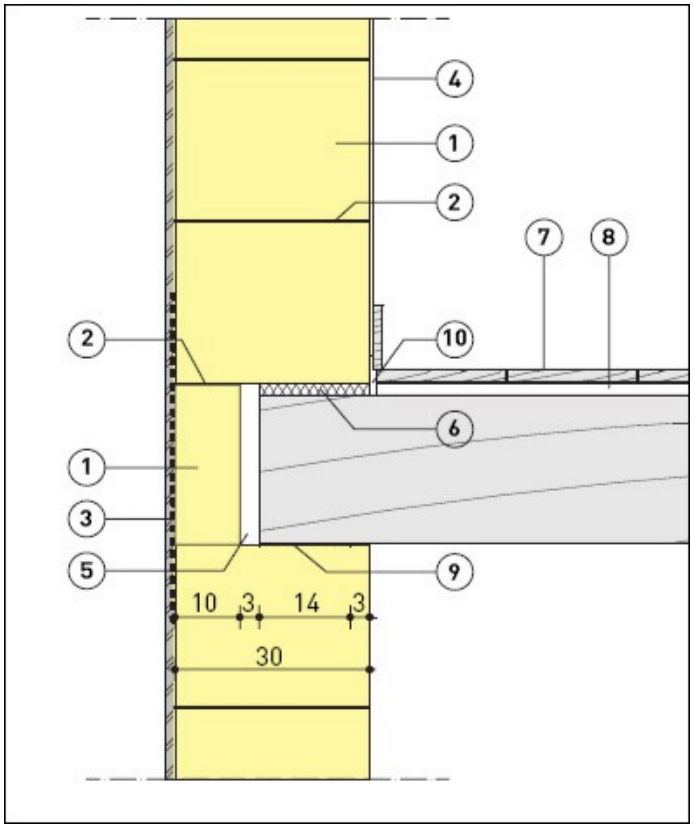
Placement of concrete floor on solid external wall



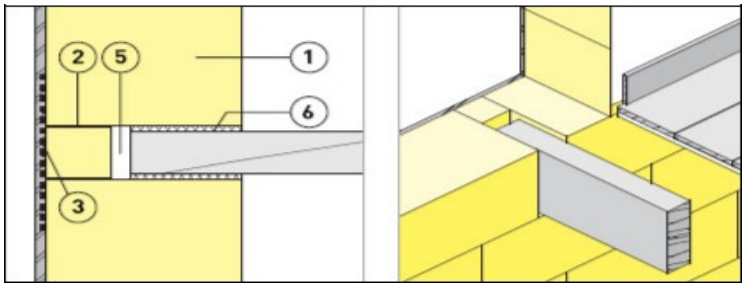
1. AAC block
2. AAC fix - thin joint mortar
3. Reinforcing mesh laid in render
4. Thermal insulation
5. In-situ concrete slab
6. Polyethylene foil
7. Polystyrene strip 40 x 5mm
8. Mortar

Wall/Floor Slab

Placement of timber floor on solid external wall

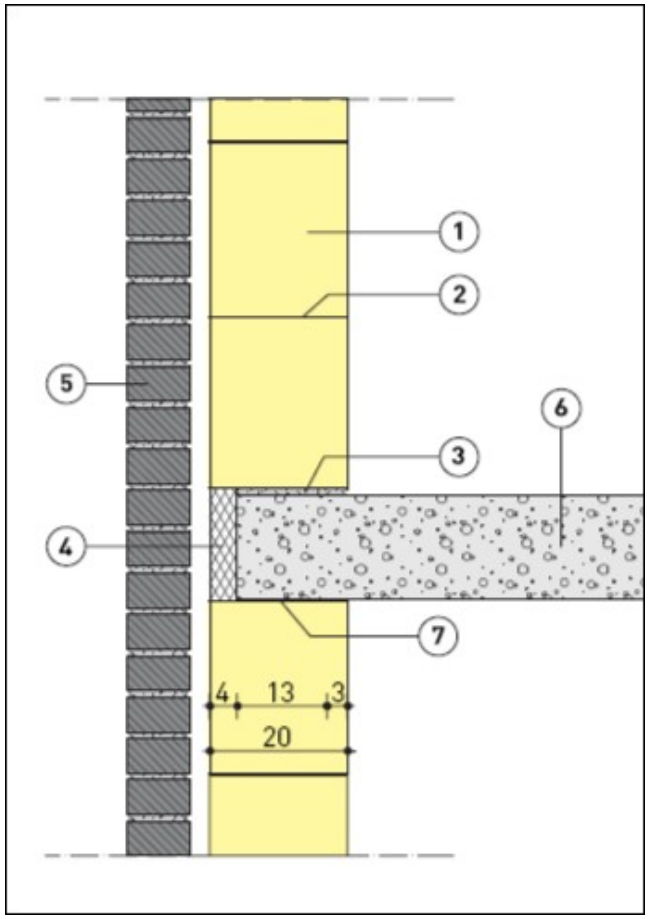


1. AAC block
2. AAC fix - thin joint mortar
3. Reinforcing mesh laid in plaster
4. Plaster
5. Cavity or insulation
6. Insulation – polyurethane foam
7. Timber floor
8. Subfloor
9. Bituminous felt or neoprene
   min. thickness 4 mm
10. Necessary expansion space for timber floor



Wall/Floor Slab

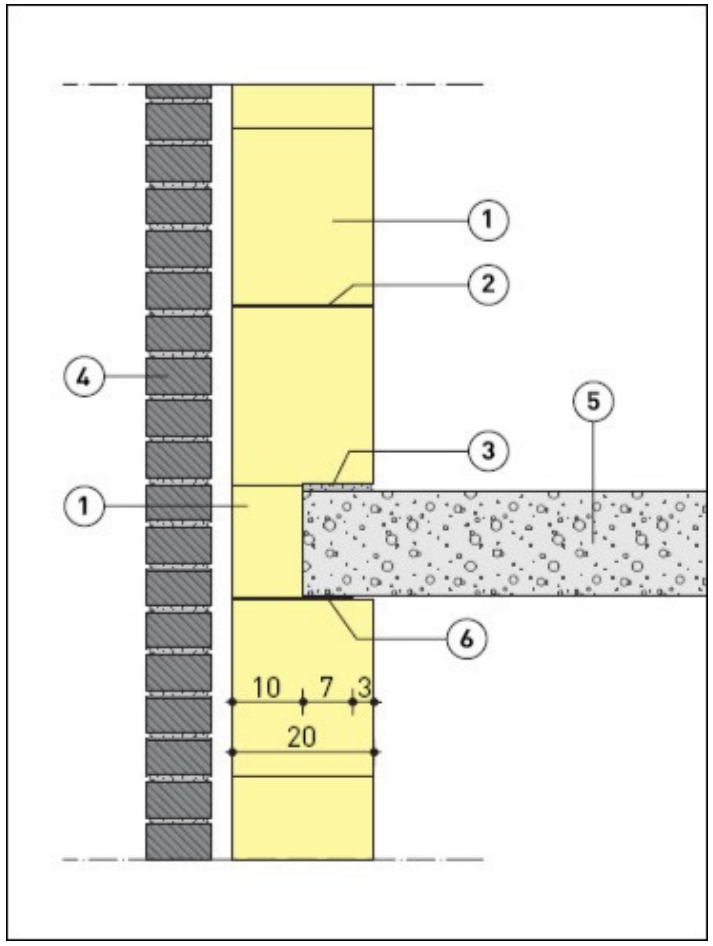
Placement of concrete floor on cavity wall



1. AAC block
2. AAC fix - thin joint mortar
3. Mortar
4. Thermal insulation
5. Bricks
6. Concrete floor
7. Bituminous felt or neoprene
   min. thickness 4 mm

Wall/Floor Slab

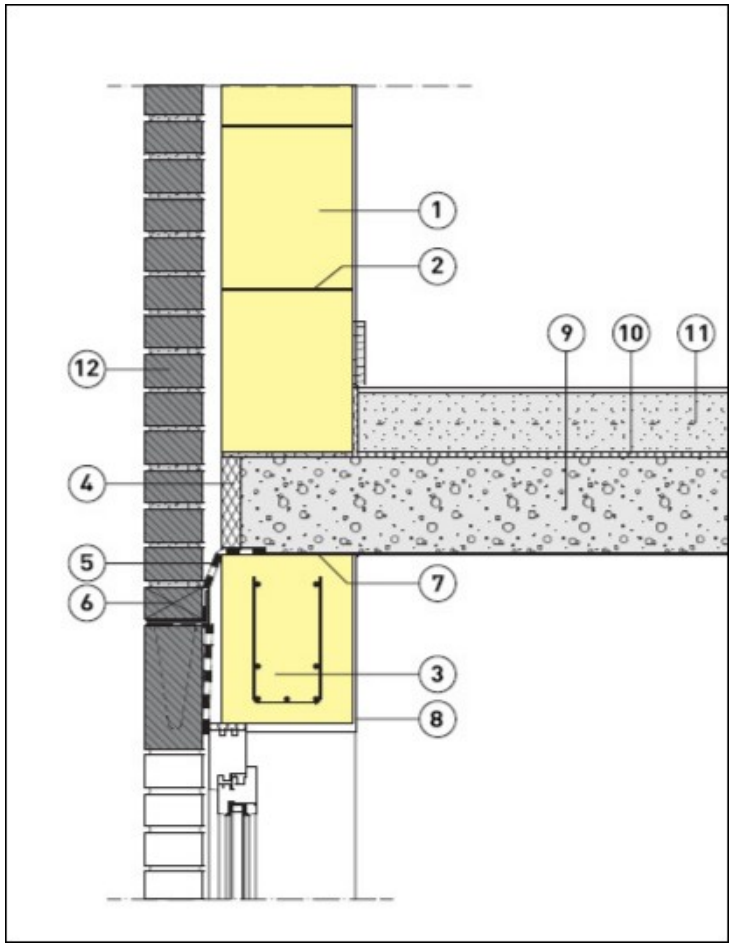
Placement of concrete floor on cavity wall



1. AAC block
2. AAC fix - thin joint mortar
3. Mortar
4. Bricks
5. Concrete floor
6. Bituminous felt or neoprene min. thickness 4 mm

Wall/Floor Slab

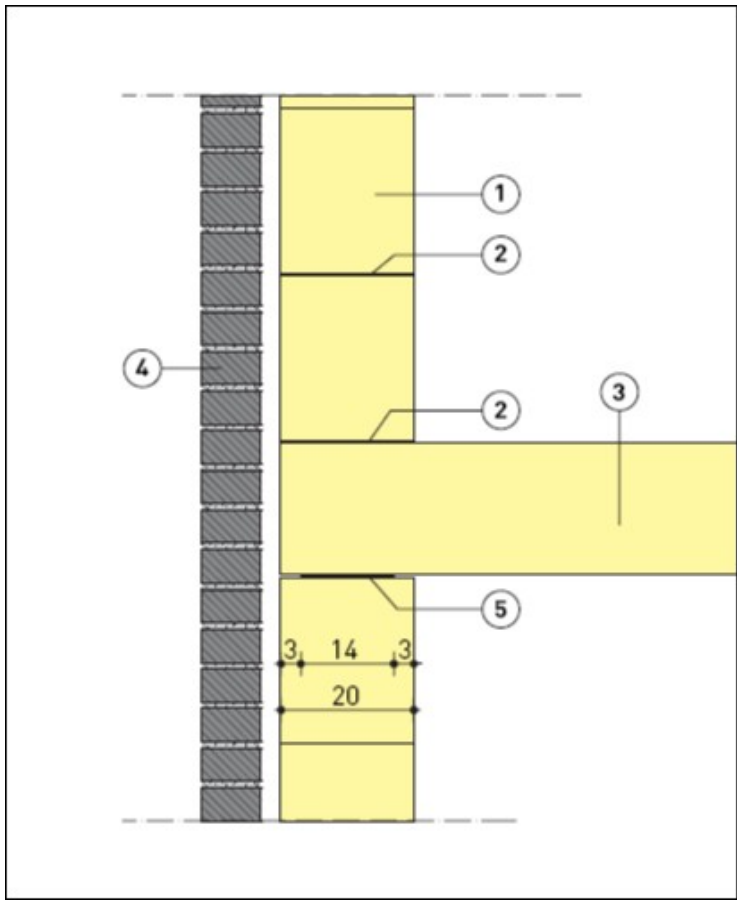
Placement of concrete floor on AAC lintel



1. AAC block
2. AAC fix - thin joint mortar
3. AAC lintel
4. Thermal insulation
5. DPC
6. Open perpend
7. Bituminous felt or neoprene min. thickness 4 mm
8. Plaster
9. Concrete floor
10. Sound insulation
11. Cement screed
12. Bricks

Wall/Floor Slab

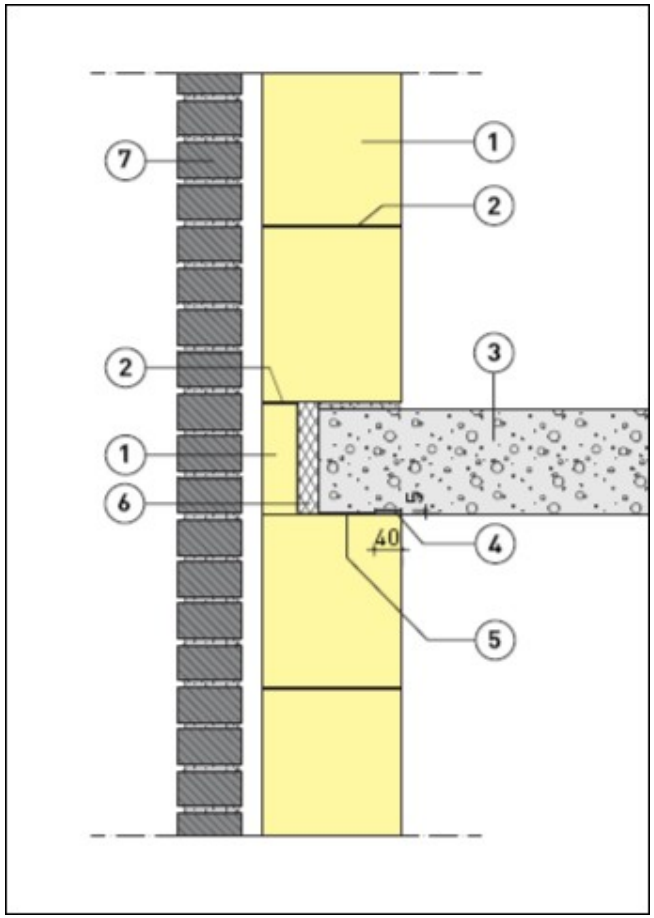
Placement of AAC floor on cavity wall



1. AAC block
2. AAC fix - thin joint mortar
3. AAC floor panels
4. Bricks
5. Bituminous felt or neoprene min. thickness 4 mm

Wall/Floor Slab

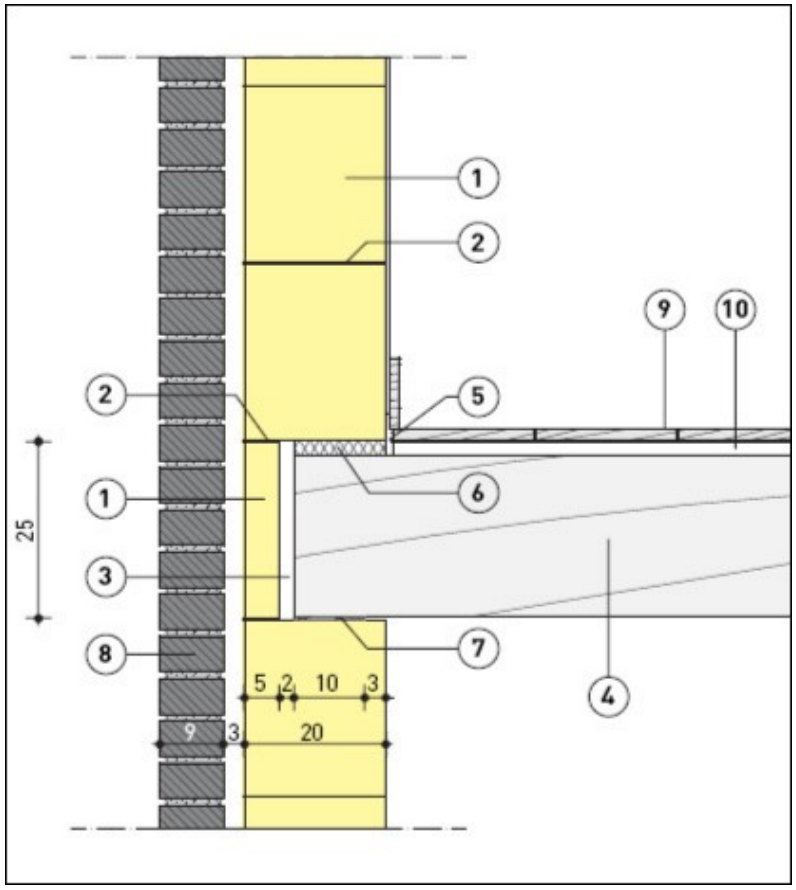
Placement of concrete floor on cavity wall



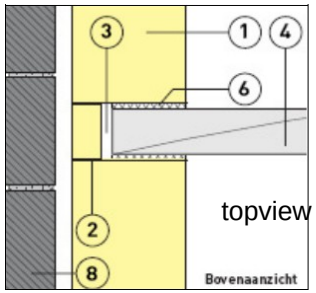
1. AAC block
2. AAC fix - thin joint mortar
3. Concrete floor
4. Polystyrene strip 40 x 5 mm
5. Polyethylene foil
6. Thermal isolation
7. Bricks

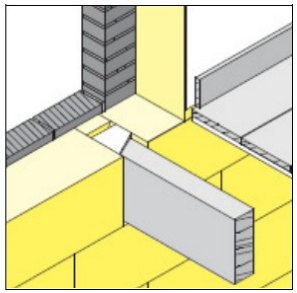
Wall/Floor Slab

Placement of timber floor on cavity wall



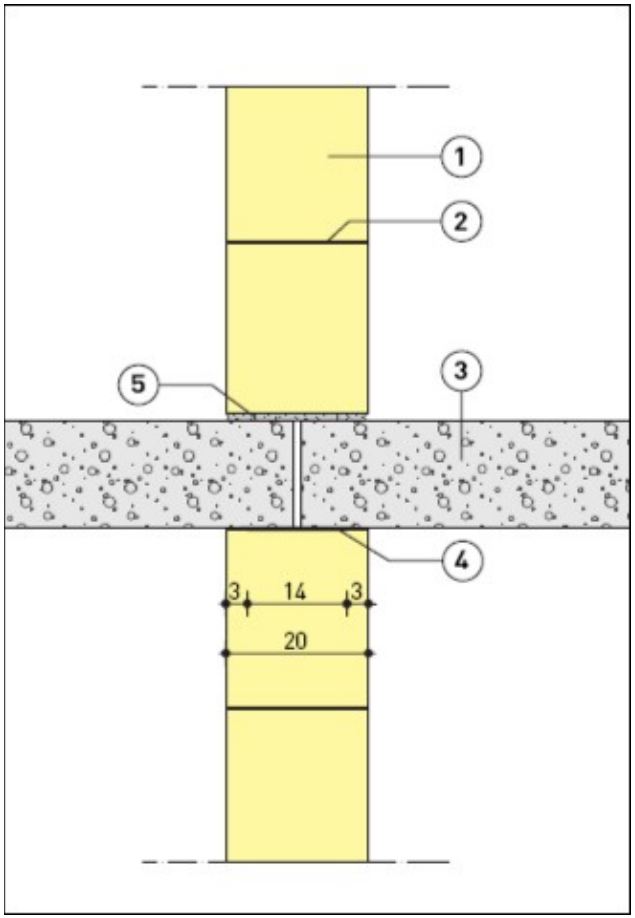
1. AAC block
2. AAC fix - thin joint mortar
3. Cavity or insulation
4. Timber floor
5. Necessary expansion space for timber floor
6. Insulation – polyurethane foam
7. Bituminous felt or neoprene min. thickness 4 mm bricks
8. Brick
9. Timber floor
10. Subfloor





Wall/Floor Slab

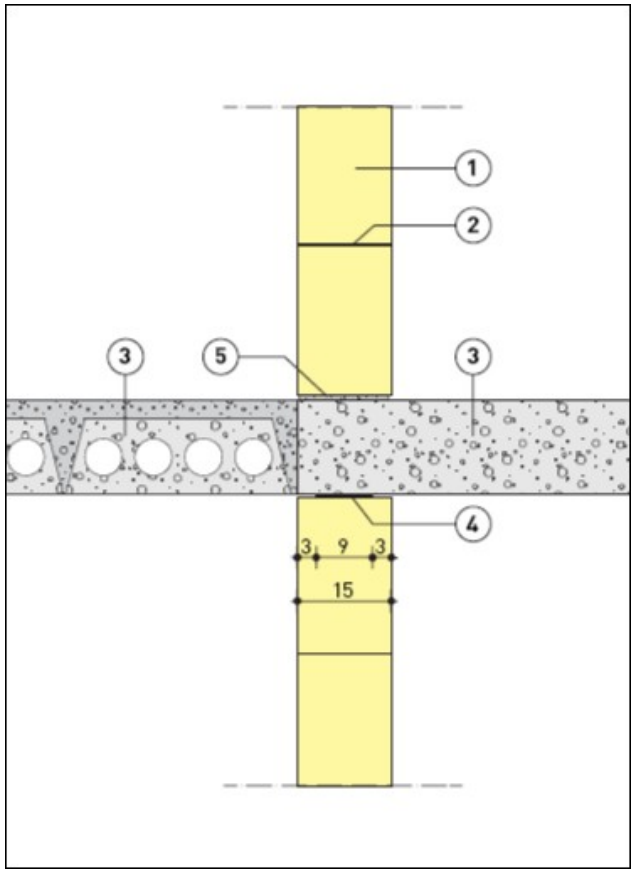
Placement of concrete floor on internal wall



1. AAC block
2. AAC fix - thin joint mortar
3. Concrete floor
4. Bituminous felt or neoprene
   min. thickness 4 mm bricks
5. Mortar

Wall/Floor Slab

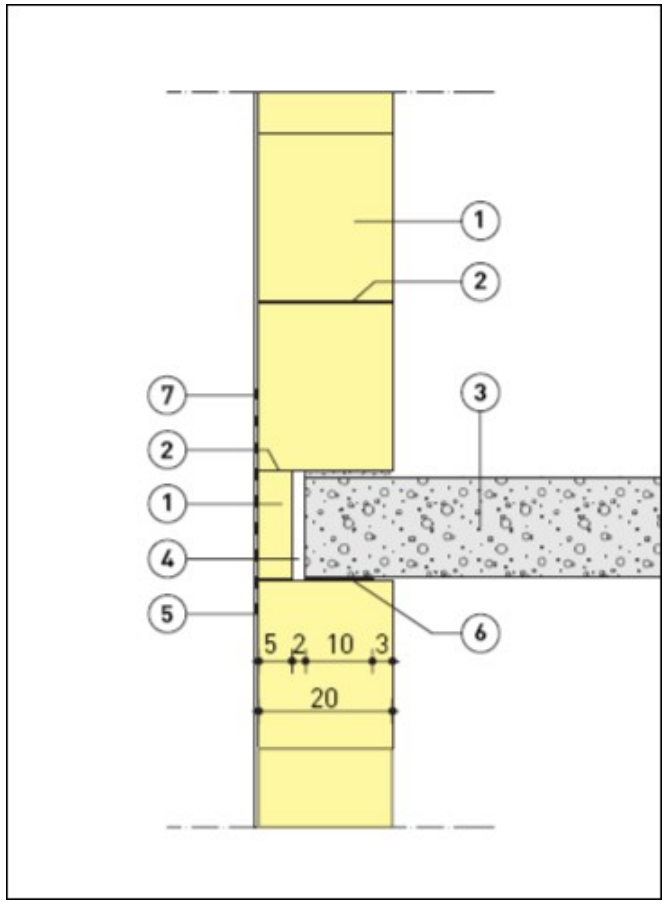
Placement of concrete floor on internal wall



1. AAC block
2. AAC fix - thin joint mortar
3. Concrete floor
4. Bituminous felt or neoprene
   min. thickness 4 mm bricks
5. Mortar

Wall/Floor Slab

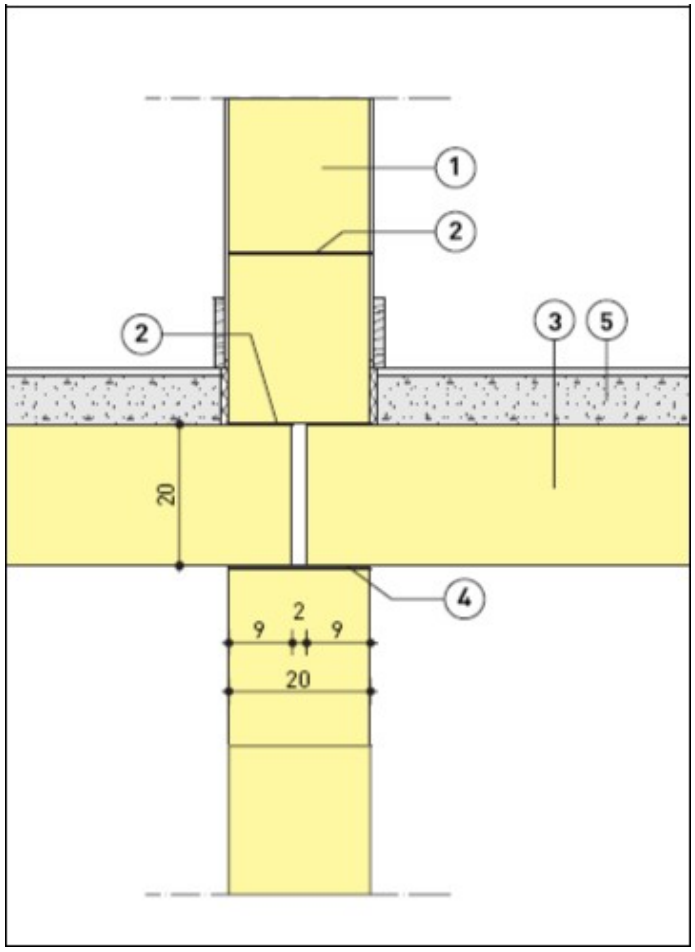
Placement of concrete floor on internal wall



1. AAC block
2. AAC fix - thin joint mortar
3. Concrete floor
4. Cavity 20mm
5. Render
6. Bituminous felt or neoprene min. thickness 4 mm bricks
7. Reinforcing mesh laid in render

Wall/Floor Slab

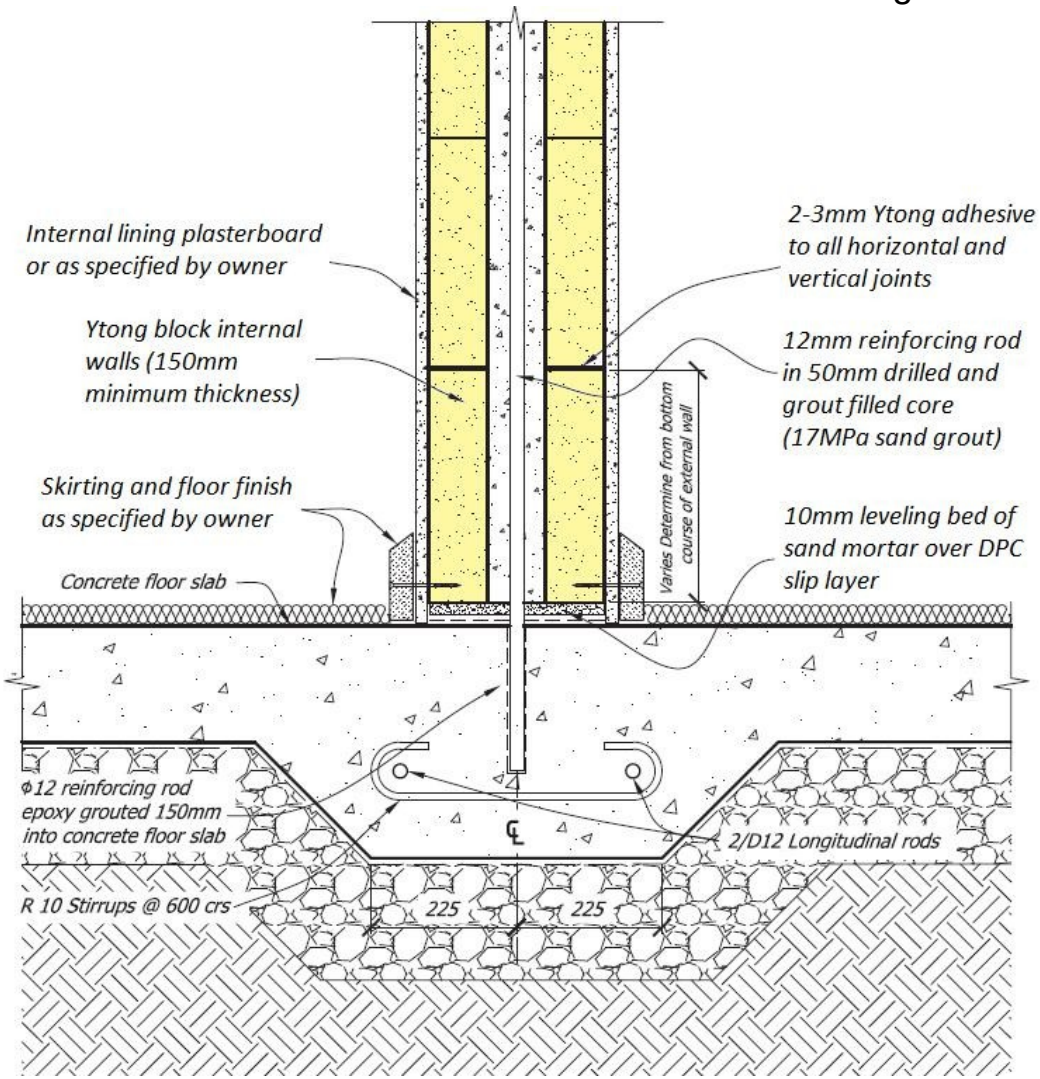
Placement of AAC floor on internal wall



1. AAC block
2. AAC fix - thin joint mortar
3. AAC floor panels (bearing = 90mm)
4. Bituminous felt or neoprene min. thickness 4 mm bricks
5. Cement screed

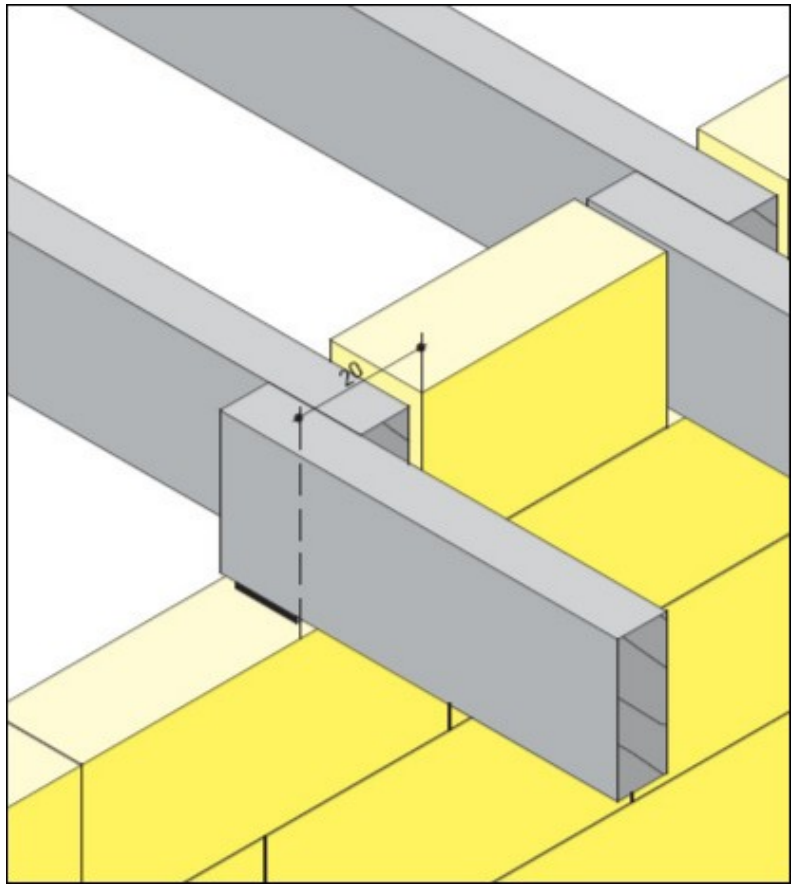
Wall/Floor Slab

Internal wall slab thickening

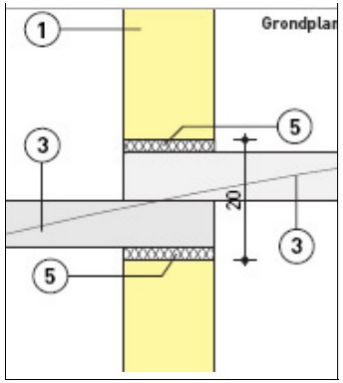


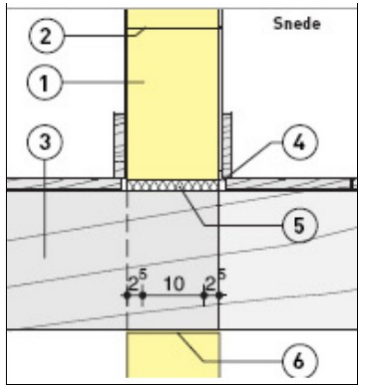
Wall/Floor Slab

Placement of timber floor on internal wall



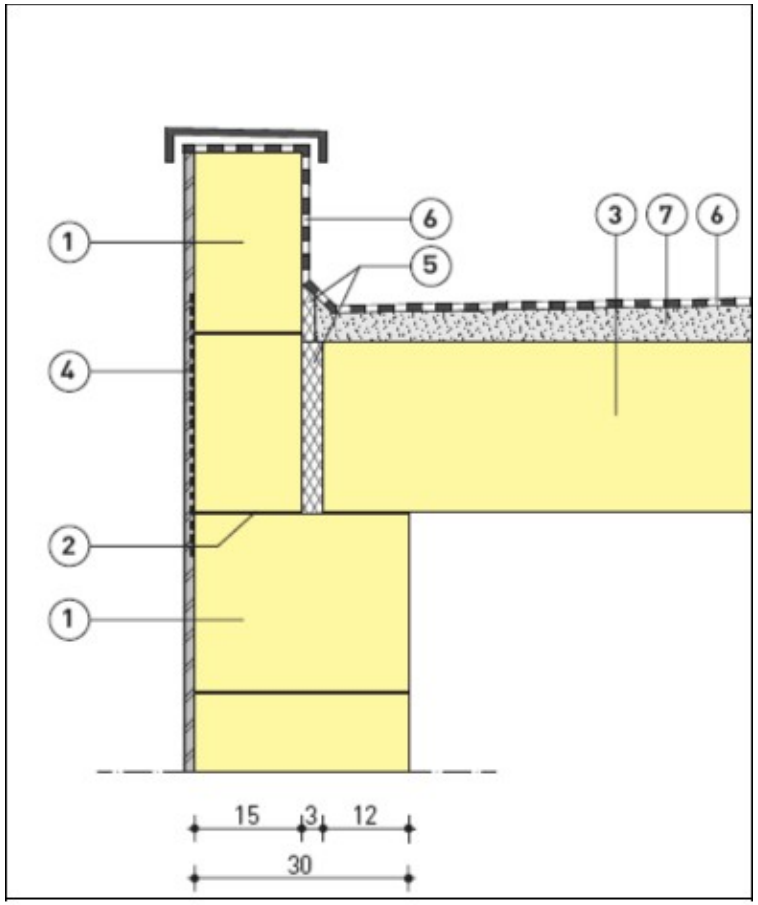
1. AAC block
2. AAC fix - thin joint mortar
3. Timber beam
4. Necessary expansion space for floor
5. Polyurethane foam, thickness 15 cm
6. Bituminous felt or neoprene min. thickness 4 mm bricks





Wall/Roof

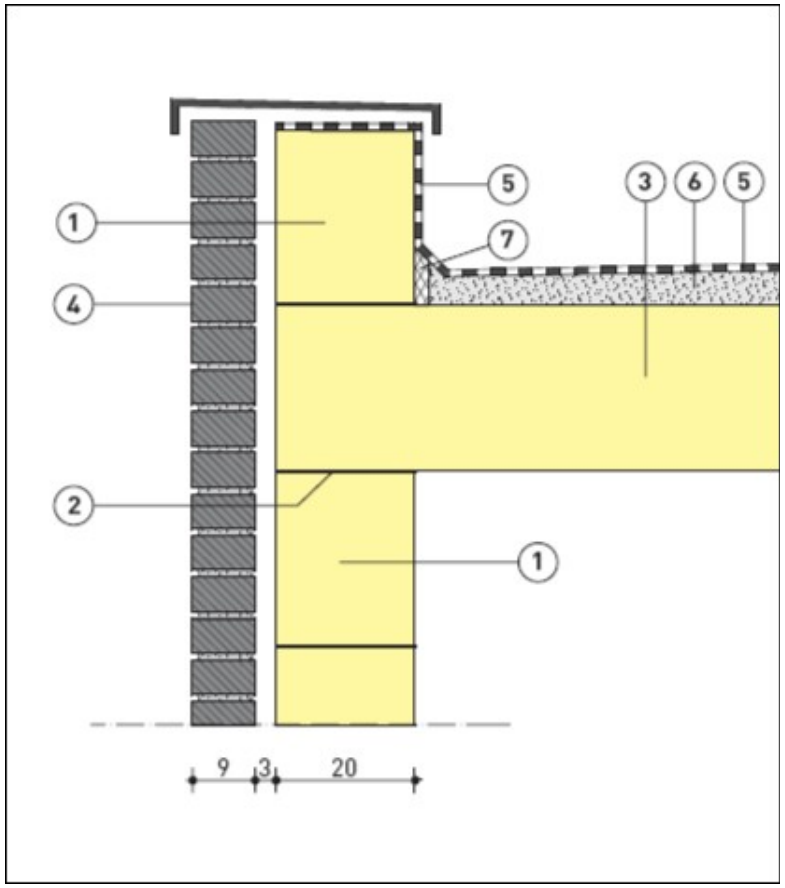
AAC flat roof on solid wall



1. AAC block
2. AAC fix - thin joint mortar
3. AAC roof panels
4. Reinforcing mesh
5. Thermal insulation
6. DPC
7. Insulated screed

Wall/Roof

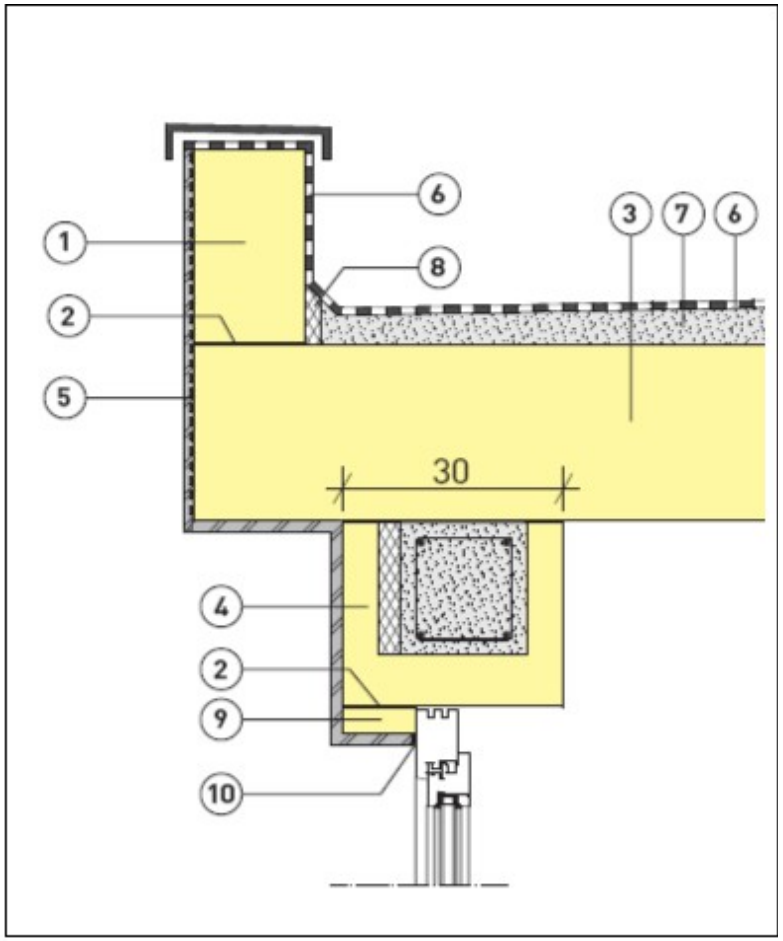
AAC flat roof on cavity wall



1. AAC block
2. AAC fix - thin joint mortar
3. AAC roof panels
4. Bricks
5. DPC
6. Insulated screed
7. Thermal insulation

Wall/Roof

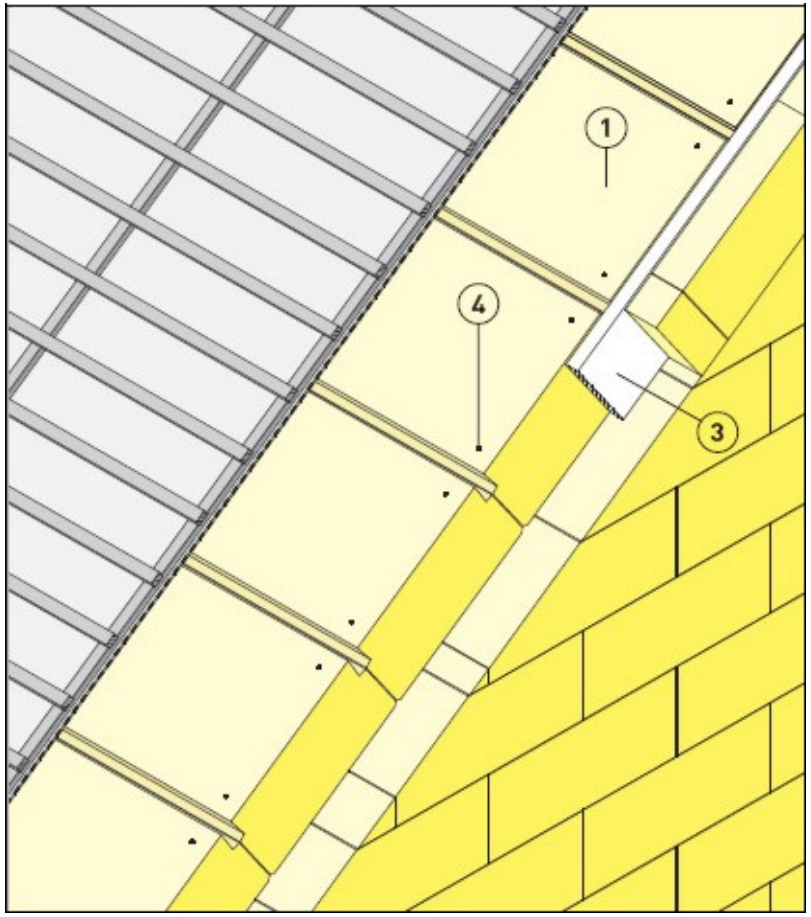
Cantilever AAC flat roof



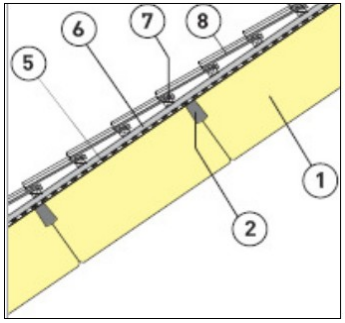
1. AAC block
2. AAC fix - thin joint mortar
3. AAC roof panels
4. AAC U-lintel
5. Reinforcing mesh
6. DPC
7. Insulated screed
8. Thermal insulation
9. AAC block – to be cut on site and glued to lintel
10. Flexible joint

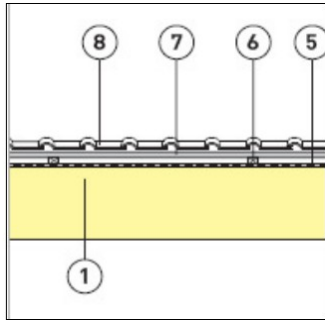
Wall/Roof

SLOPING ROOF – AAC roof panels



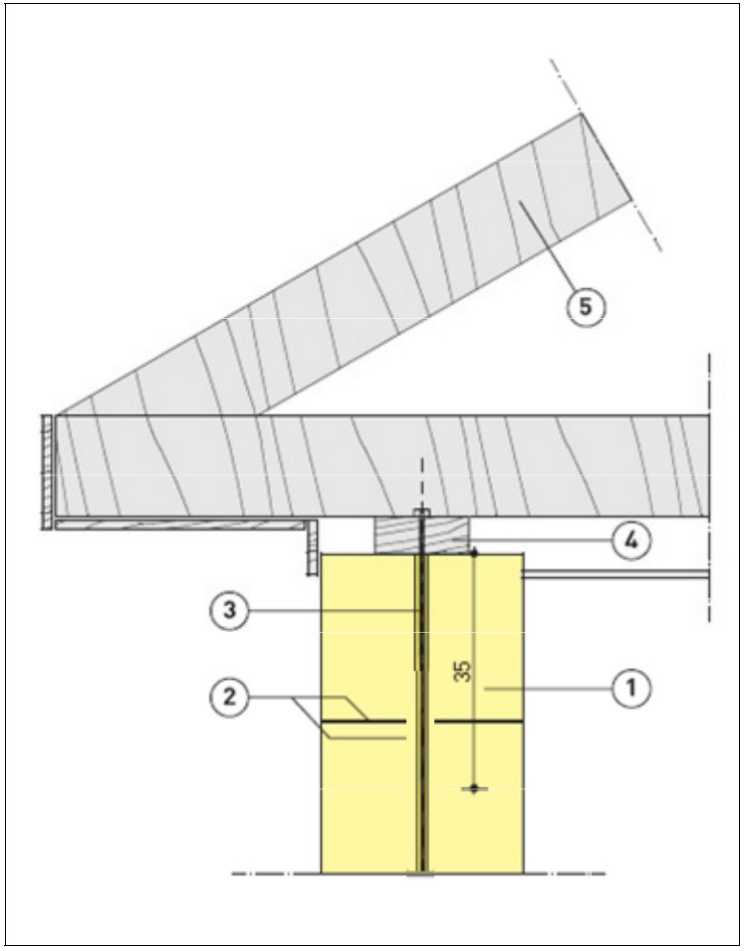
1. AAC roof panel
2. Mortar
3. Thermal insulation
4. Continuity rod
5. Roofing sheet
6. Batten
7. Counter batten
8. Roof cladding





Wall/Roof

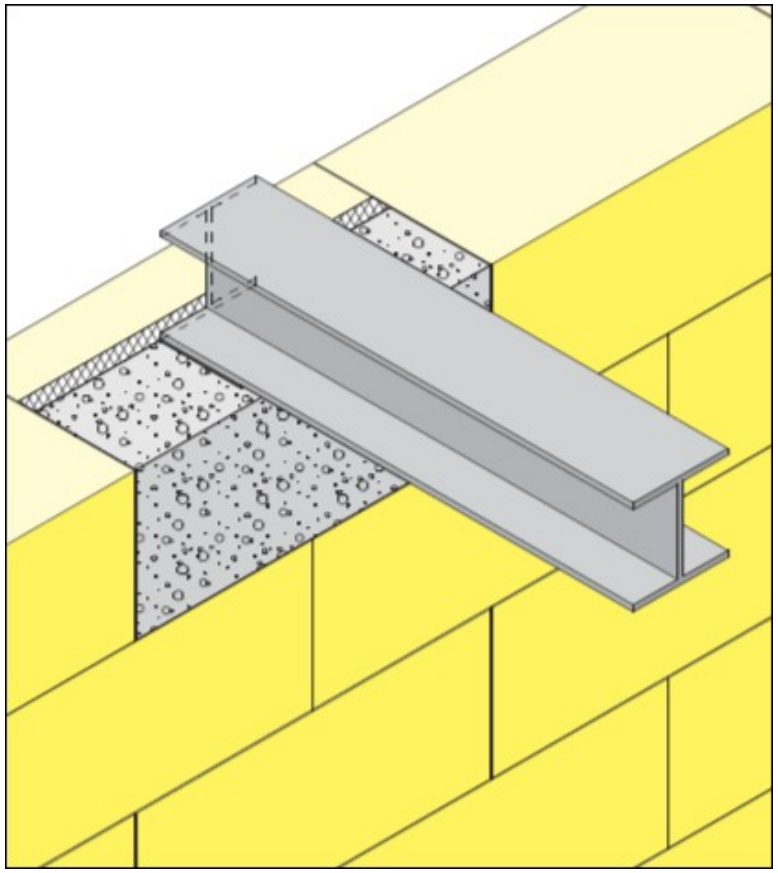
Sloping roof – timber frames



1. AAC wall
2. AAC fix - thin joint mortar
3. Holding down rod D12 to foundation
4. Wall plate
5. Timber frame

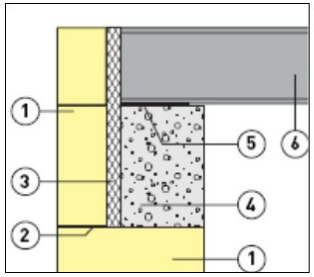
Point Loads

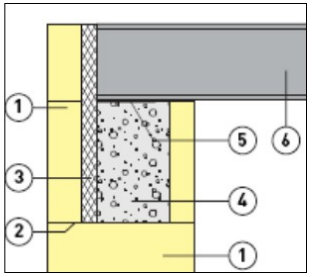
Different possibility



1. AAC block
2. AAC fix - thin joint mortar
3. Thermal insulation
4. Pad stone
5. Bituminous felt or neoprene min. thickness 4 mm bricks
6. Steel profile

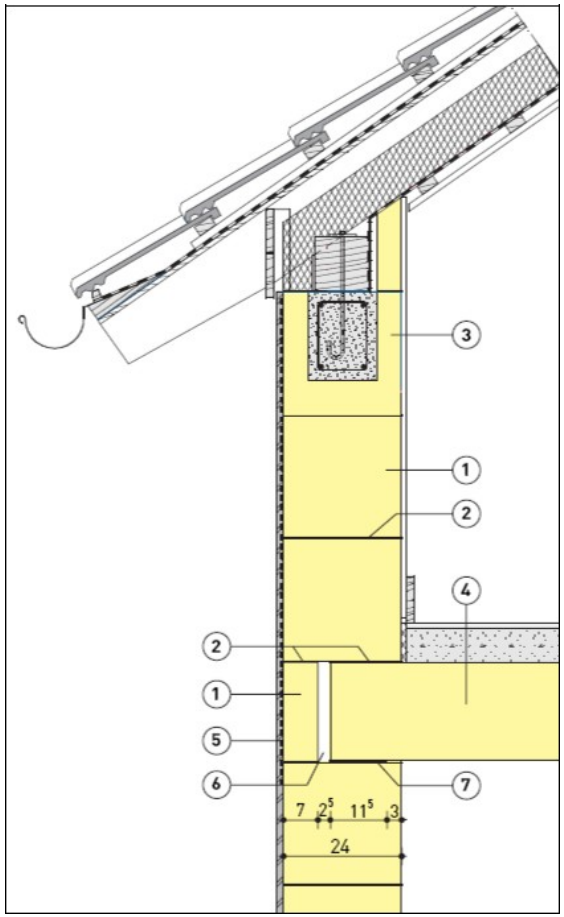
Possibility 1 Possibility 2





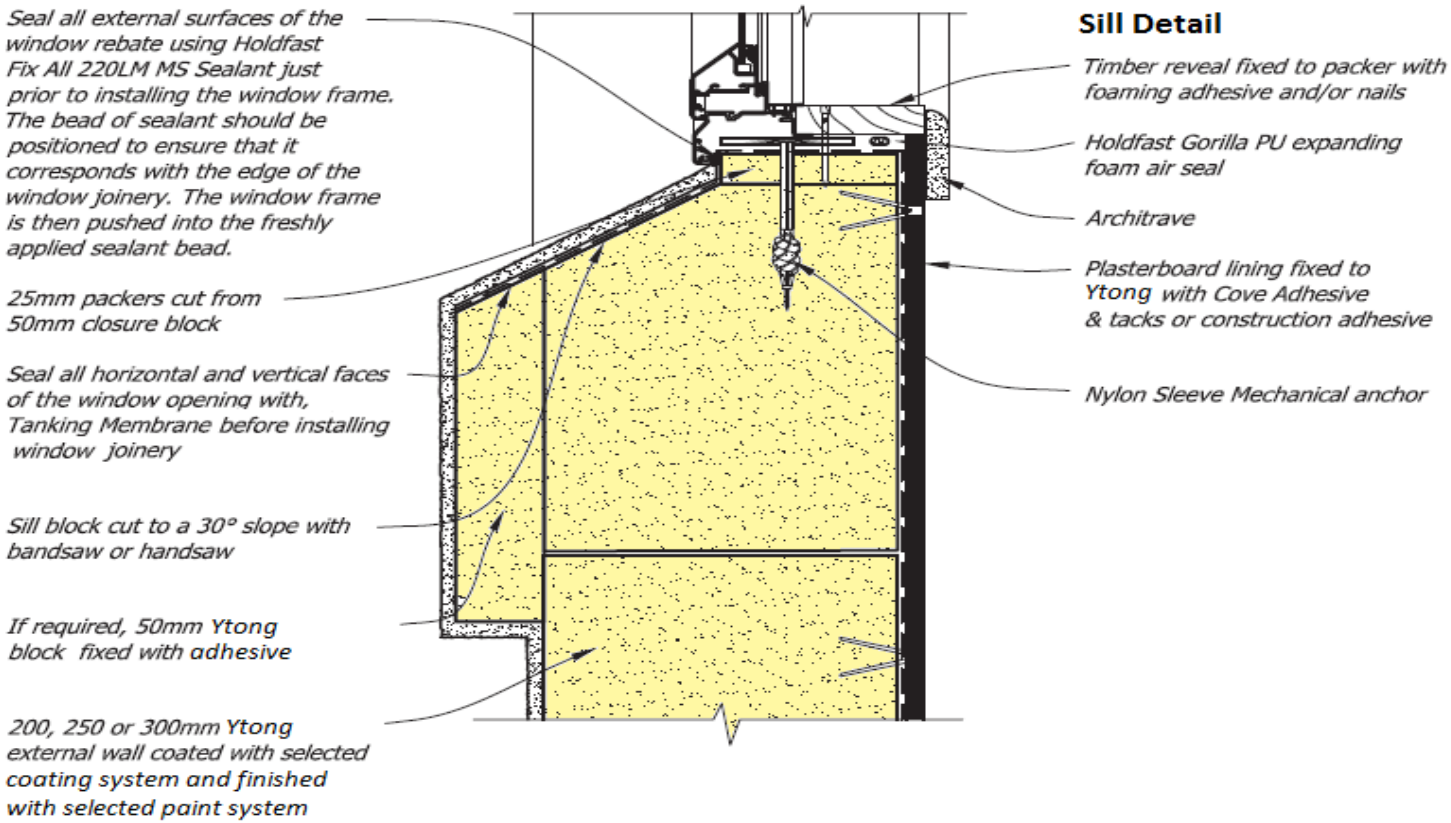
Ring Beam

on solid AAC wall – using U-lintels

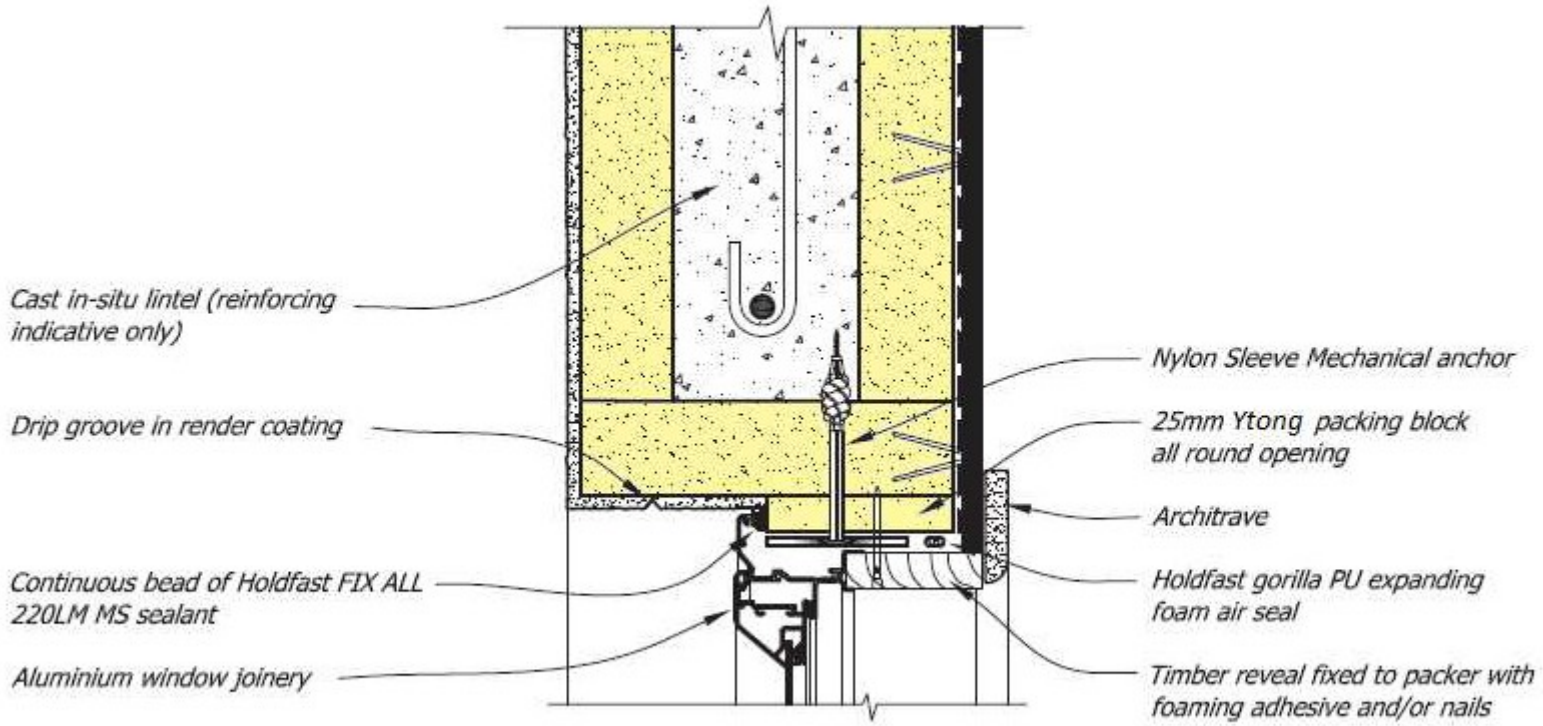


1. AAC block
2. AAC fix - thin joint mortar
3. AAC U-lintel
4. AAC floor panels
5. Reinforcement mesh
6. Cavity or insulation
7. Bituminous felt or neoprene
   min. thickness 4 mm bricks

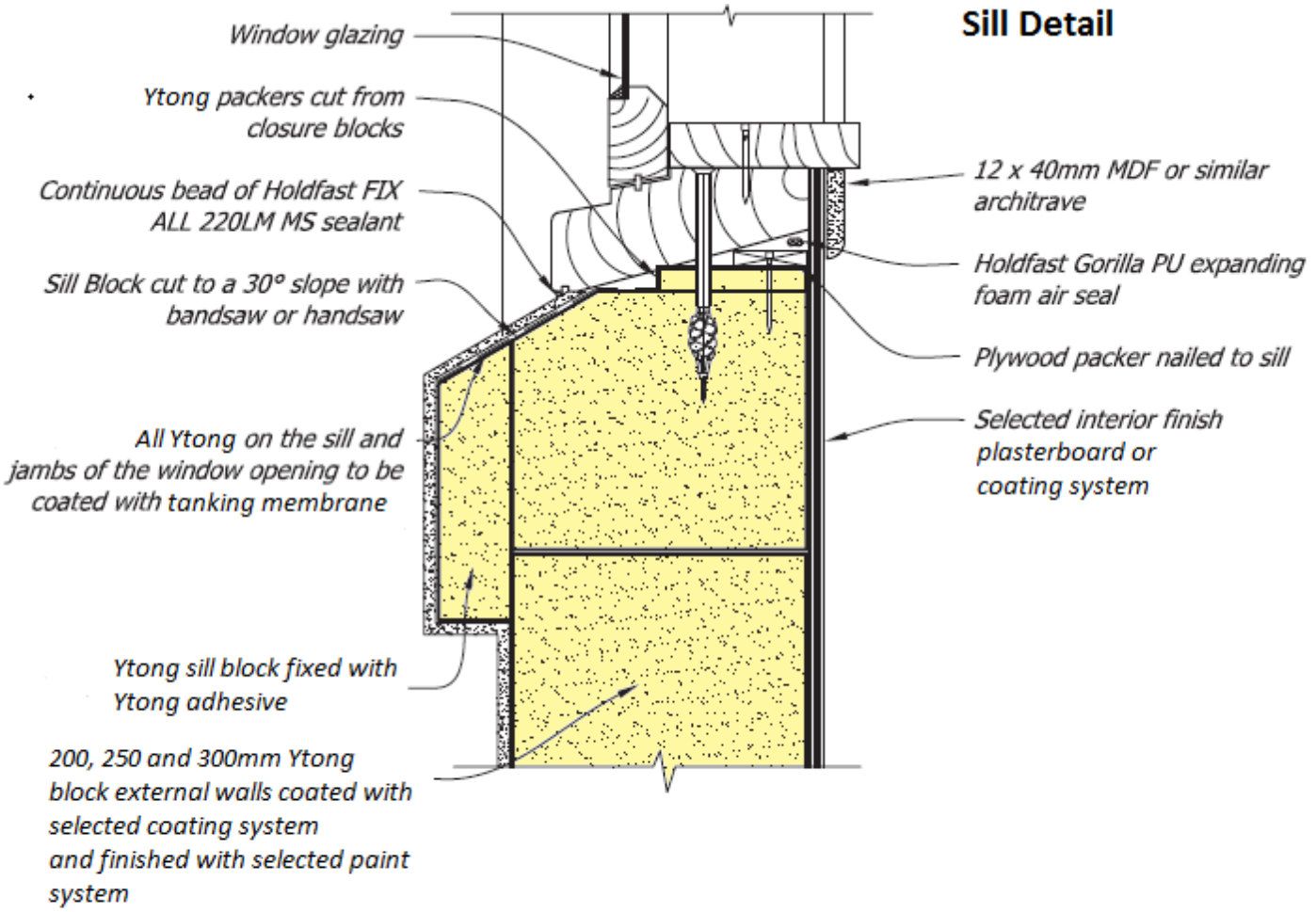
Windows
Aluminium Sill



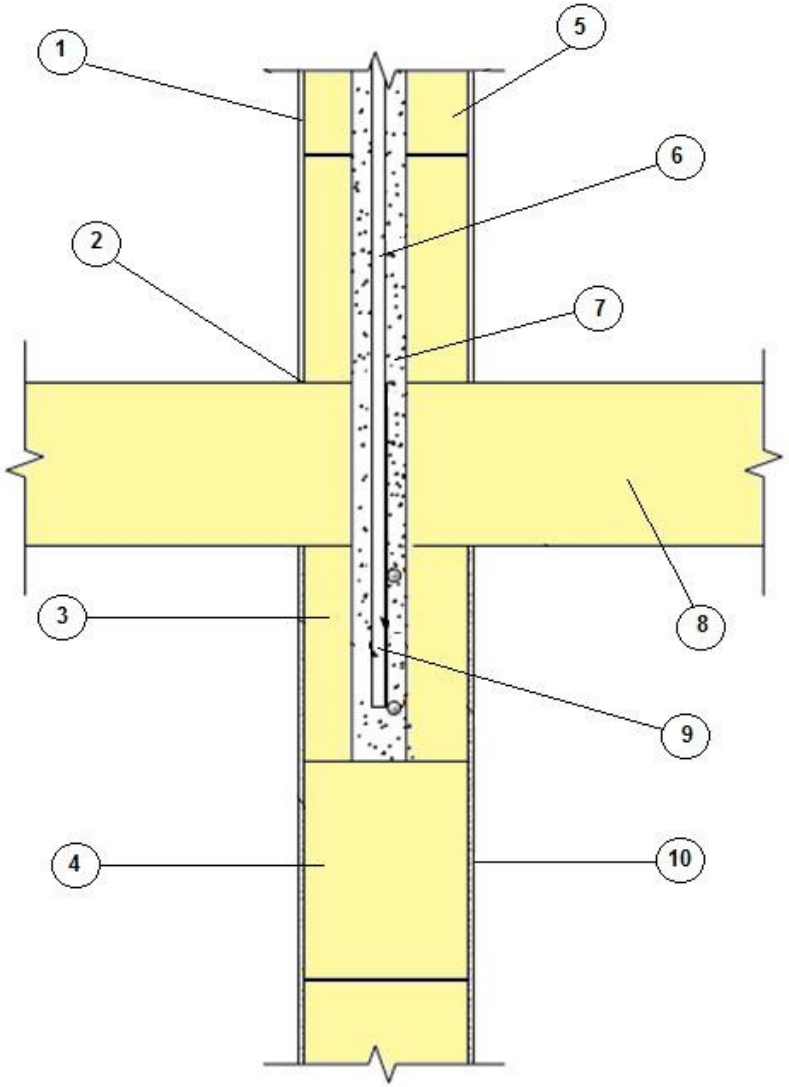
Windows
Aluminium Head



Windows
Timber Sill



Interfloor Construction



1. Interior lining system rendered in plaster or plasterboard lining.
2. Apply AAC adhesive between blocks and floor panels.
3. Bond beam with 50mm AAC facing blocks filled with 17 MPa concrete.
4. 150 or 200mm AAC internal block wall to support upper wall (can also use steel beam as alternative.
5. 150 or 200mm AAC internal block in line with lower storey wall. Must not be thicker than lower wall.
6. D12 vertical rods at 1200mm maximum centres in 50mm grout filled holes, drilled through the AAC floor panels and then 150mm down into the bond beam.
7. Drill 50mm holes through floor panels to allow access to epoxy grout holes in bond beam. Fill with grout after rod epoxied in place.
8. 150, 200 and 250mm AAC floor panel.
9. Epoxied grout rods fixed 150mm down into bond beam. After the hole is drilled it is then plugged to stop debris.
10. Interior lining system rendered plaster or plasterboard lining.