SOLID EARTH

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SPECIFICATION
INTERIOR ADOBE BRICK VENEER

1. GENERAL

1.1 DOCUMENTS REFERRED TO
Documents referred to in this section are: NZS 4298:2024 Materials and Construction of Earth Buildings, and NZS 4299:2024 Earth Buildings Nor Requiring Specific Engineering Design. Documents listed above and cited in the clauses that follow are part of this specification.

1.2 QUALIFICATIONS
Carry out all adobe bricklaying work with people competent and experienced in this type of work or labourers who are working under supervision of such experienced people.

1.3 INSPECTION
Call for inspection of the work at critical stages defined by the project manager. These may include: Upstand DPM, correct installation of brick ties, and structure on completion. All to good trade practice.

1.4 TESTS
When using adobe bricks bought from a commercial supplier, bricks have to be tested in accordance with NZS 4298:2024, table 2.1, prior to delivery. Commercial suppliers have to produce a relevant set of test results for strength (modulus of rupture) from an independent testing laboratory. Copies of test results are to be supplied to the project manager for approval.

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2. PRODUCTS

2.1 ADOBE (MUD) BRICKS

Composition: Clay (origin: Upper Moutere), Barley straw, Untreated Sawdust

Size: 280mm x 150mm x 130mm
Providing a module size of 300 long by 150 deep with 20mm mortar joint

Weight: max. 8kg, </= 220kg/m2 wall area

Colour: Creamy yellow

Application: Interior Lining, Feature Walls, Heat Sinks

Mortar: Earth Mortar of the same origin and composition as the bricks, with addition of sand or crusher dust as required.
Shrinkage tested in accordance to NZS4298 to </=2%

Test Results: Compressive strength 1.70Mpa (min. requirement 1.30MPa);Flexual tensile strength 0.9MPa (min. requirement 0.4MPa)
Drop Test: Pass

Finish: A wide range of wall finishes is possible. It is essential to maintain a breathable surface

2.2 BRICK TIES and GEOGRID MESH

Galvanised 85mm screw type brick ties, i.e. Lumberlok. (105mm ties may be used if there is a small cavity between bricks and studs).
Geogrid mesh TRIAX 160 horizontal reinforcing.

2.3 DPM

Mulseal or Flintcote bituminous Emulsion.

2.4 FIRED BRICKS for UPSTAND

Client approved fired bricks To AS/NZS 4455, mortar composed of Portland cement, sand and water with an admixture to the provisions of NZS 4210, clause 2.2

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3. EXECUTION

3.1 FOUNDATIONS

Footings under the adobe veneer shall be supported by slab thickening or reinforced concrete foundation, in accordance with NZS4299:2024, Figure F1. The footings shall be onto firm original ground with an ultimate bearing capacity of no less than 300kPa

3.2 LAY UPSTAND

The height from the concrete slab to the underside of the bottom course of adobe bricks on interior walls shall be a minimum of 50mm. Lay a 160mm wide concrete or fired brick upstand in sand cement mortar. Roughen top to provide key to earth mortar.

3.3 APPLY DPM

The top of the upstand shall be provided with a damp-proof course. The DPC shall be two coats of bituminous paint that complies with AS/NZS2904. The two top coats shall be painted thickly in opposite directions all to manufacturers instructions.

3.4 SET OUT

Set out bricks to minimise cutting and part width bricks.

3.5 LAY ADOBE BRICKS

Lay bricks in a 20mm earth mortar bed to NZS4299:2024 to string lines to within 5mm of plumb every 2.4 of height and each course within 10mm of horizontal.
Wet down bricks in the course below before spreading mortar, dunk each brick for 10 seconds, both to avoid sucking moisture out of mortar and spoiling the bond.
Lay bricks in stretcher bond, keeping vertical mortar joints aligned on alternate courses. Mortar joints need to be completely filled without gaps.

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3.6 BRICK TIES and GEOGRID MESH

Veneer Bricks to be tied back to timber frame at 400-600crs horizontally, 300crs vertically and also within 200mm of openings and in the last course at the top of the wall.
Brick ties shall screw fixed to frame and fixed to bricks with 90/3.15 nail.
120mm wide geogrid mesh is installed as horizontal reinforcing in the same course as brick ties, 300crs vertically. Mortar to be spread below and over mesh and brick ties, so that the mesh is well embedded.

3.7 SECURING TOP OF THE WALL

A scotia board shall be fixed as shown in Figure F1. The scotia board shall be secured to the ceiling framing with at least one 2.8mm nail or one 8 gauge screw at 300mm max spacing.

3.8 FINISH WALLS

For a quality finished job refer to Section 8 of NZS 4298:2024 or consult a professional for options and recipes.
It is recommended to keep the earthen surface completely breathable.

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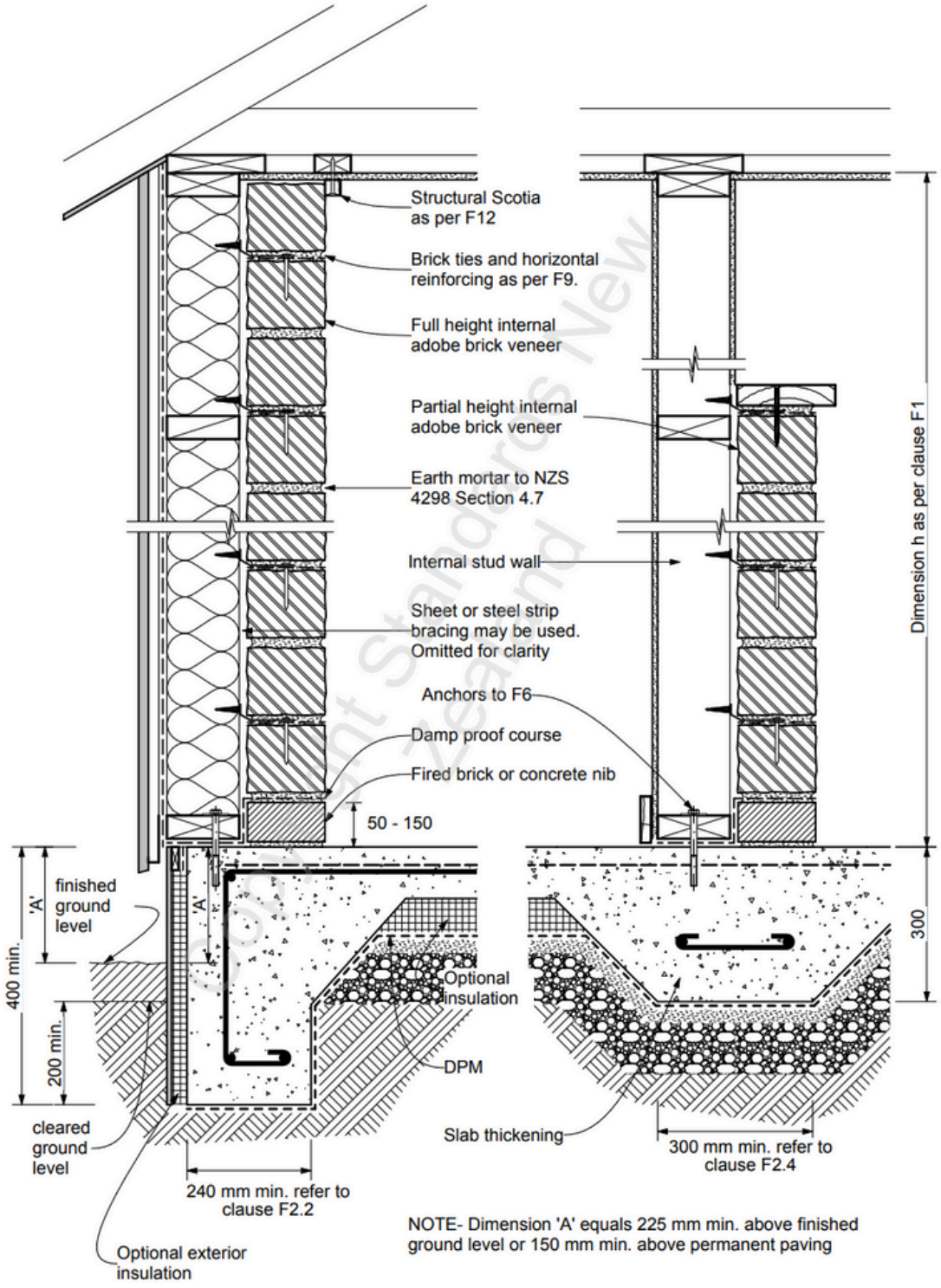

Figure F1 – Internal veneer details