

ACCEPTED METHODS OF INSTALLING SUB-FLOORS for CERAMIC TILE

(Approved by City of St. Thomas Engineering on January 19, 2010)

METHOD #1

- ➤ 16" o/c joist spacing - (maximum spacing)
- ➤ 13/16" plywood or waferboard sub floor sheathing – (T&G or blocking at edges)
- ➤ 1/4" underlay

METHOD #2

- ➤ 16" o/c joist - (maximum spacing)
- ➤ 5/8" plywood sub floor – (T&G or blocking at edges)
- ➤ 5/8" underlay – (joints offset, 4mm gap between panels)

METHOD #3 (Best Building Practice)

- ➤ 16" o/c joist spacing - (maximum spacing)
- ➤ 5/8" plywood sub floor – (T&G or blocking at edges)
- ➤ 7/16" aspenite underlay – (joints offset, 4mm gap between panels)

METHOD #4 (Best Building Practice)

- ➤ 12" o/c joist spacing - (maximum spacing)
- ➤ 5/8" plywood sub floor – (T&G or blocking at edges)
- ➤ 1/4 " underlay – (joints offset, 4mm gap between panels)

NOTE: In all of the methodologies above blocking would not be required as using T&G instead of square edge sub floor sheathing replaces the need for blocking (9.23.14.3)
Fasteners for floor sheathing shall be as per 9.23.3.5

METHOD #5

- ➤ Schluter-Ditra System
- ➤ Shall be installed as per the manufacturers requirements

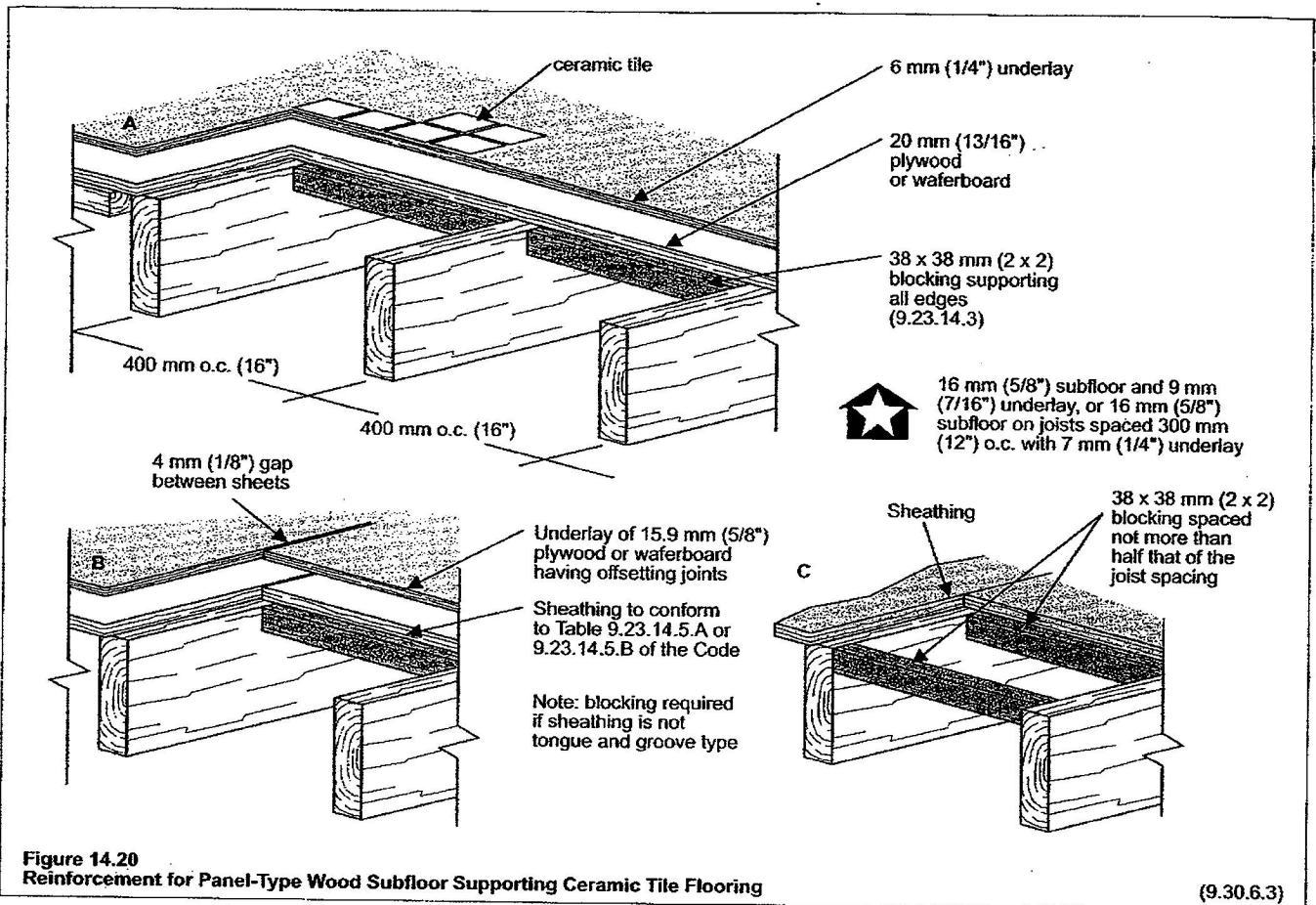


Figure 14.20
Reinforcement for Panel-Type Wood Subfloor Supporting Ceramic Tile Flooring

(9.30.6.3)

CERAMIC TILE FLOORING

Ceramic tile must be either set in a mortar bed, applied to a mortar bed with adhesive, or applied to a sound smooth base with a suitable adhesive.

Where ceramic tile is set in a mortar bed, the bed must be at least 32 mm (1 1/4") thick with a 50 mm by 50 mm (2 x 2) galvanized wire mesh on asphalt sheathing paper, felt, or polyethylene film when wood subflooring is provided. Mortar must be 1 part cement for 4 parts sand and 1 part water by volume. Tile joints must be grouted with cement grout and wiped clean and smooth.

Where ceramic tile is applied to a mortar bed with adhesive, the bed must be at least 12.5 mm (1/2") thick and laid on asphalt sheathing paper, felt, or polyethylene film where a wood subfloor is provided. Not less than one layer of galvanized diamond mesh wire lath shall be imbedded in the mortar bed, with joints overlapped at least 12 mm (1/2"). The wire lath must be fastened to the subfloor with 38 mm (1 1/2") staples or lath nails spaced at 150 mm o.c., must be applied between the mortar bed and the wood subfloor. Mortar must be 1 part cement for 4 parts sand and 1 part water by volume. Tile joints must be grouted with cement grout and wiped clean and smooth. Floor joists

supporting the mortar bed must be spaced 400 mm o.c. or less, and have not less than two rows of 38 mm x 38 mm (2 x 2) cross bridging.

For a ceramic tile floor set on wood panel-type underlay, the floor assembly must be reinforced using one of the three methods described in Figure 14.20, to provide a sound smooth base.

For ceramic tile applied to a mortar bed with an adhesive, see Figure 14.21.

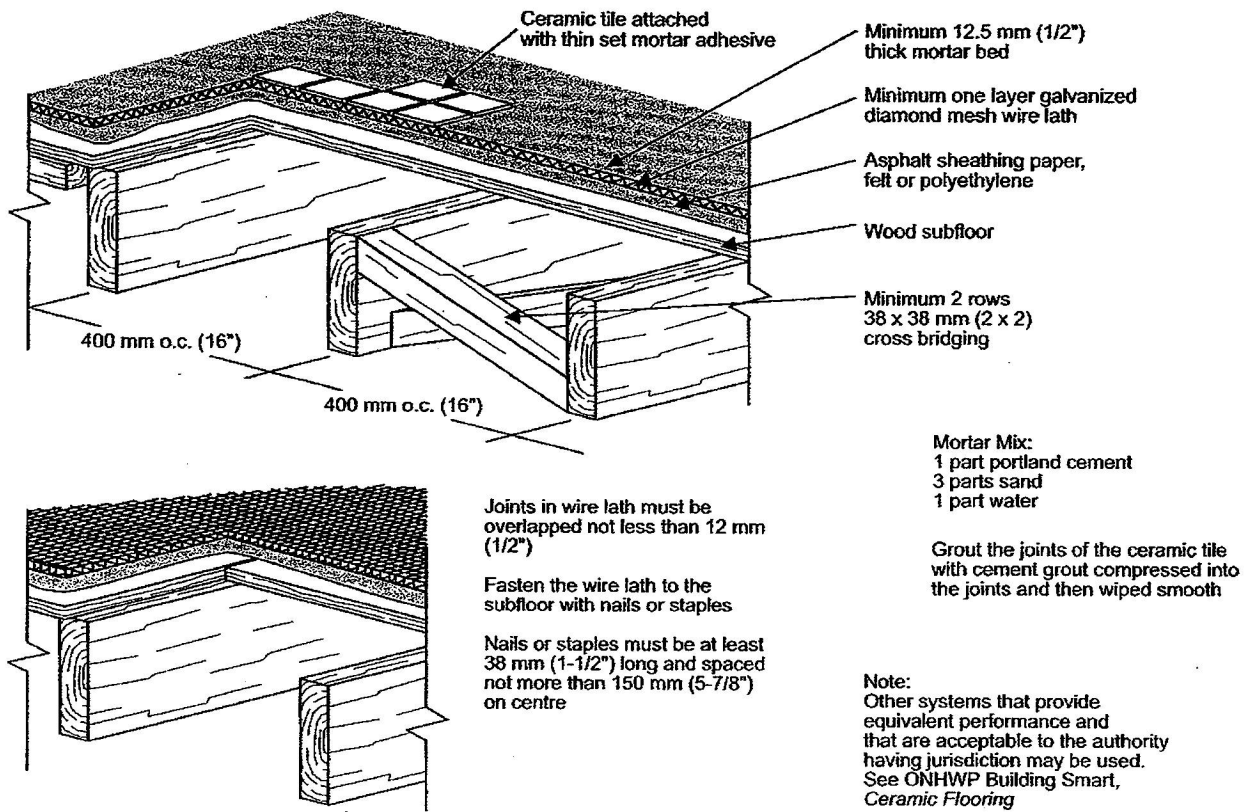


Figure 14.21
Ceramic Tile Applied to Mortar Bed with Adhesive

(9.30.6.4)

9.30.4. Parquet Flooring

9.30.4.1. Adhesive

- (1) Adhesive used to attach parquet block flooring shall be suitable for bonding wood to the applicable subfloor material.

9.30.5. Resilient Flooring

9.30.5.1. Materials

- (1) Resilient flooring used on concrete slabs supported on ground shall consist of asphalt, rubber, vinyl-asbestos, unbacked vinyl or vinyl with an inorganic type backing.
- (2) Flooring described in Sentence (1) shall be attached to the base with a suitable waterproof and alkali-resistant adhesive.

9.30.6. Ceramic Tile

9.30.6.1. Application

- (1) Ceramic tile shall be set in a mortar bed or applied to a sound smooth base with a suitable adhesive.
- (2) Panel-type subfloor to which ceramic tile is to be applied with adhesive shall have its edges supported according to Article 9.23.14.3.

9.30.6.2. Ceramic Tile Set in Mortar Bed

- (1) When ceramic tile is set in mortar bed, the bed shall be not less than 32 mm (1 ¼ in) thick. A 50 mm (2 in) by 50 mm (2 in) galvanized wire mesh shall be placed in the mortar bed, and asphalt sheathing paper, felt or polyethylene film shall be applied under the mortar bed when the mortar is applied over wood subfloors.
- (2) The mortar bed described in Sentence (1) shall consist of by volume,
 - (a) 1 part Portland cement,
 - (b) 4 parts sand, and
 - (c) 1 part water.
- (3) The tile joints for the ceramic tile in Sentence (1) shall be grouted with cement grout which shall be compressed into joints between the tiles and then wiped smooth.

9.30.6.3. Reinforcement for Panel-Type Wood Sheathing

- (1) Except as permitted in Article 9.30.6.4., when ceramic floor tiles are set on panel-type wood sheathing, one of the following assemblies for reinforcing the floor assembly shall be used,
 - (a) 20 mm (13/16 in) thick plywood or waferboard with all edges supported by at least 38 mm (1 ½ in) by 38 mm (1 ½ in) blocking with floor joists spaced not more than 400 mm (15 ¾ in) o.c., with 6 mm (¼ in) underlay,
 - (b) sheathing with a thickness that conforms to Table 9.23.14.5.A. or a rating that complies to Table 9.23.14.5.B. and has an underlay consisting of 15.9 mm (5/8 in) plywood or waferboard with offsetting joints, with a 4 mm (5/32 in) gap between the sheets, or
 - (c) subfloor sheathing reinforced with close spaced 38 mm by 38 mm (2 in by 2 in) blocking at spacings at least half that of the floor joist spacing.

9.30.6.4. Ceramic Tile Applied to Mortar Bed with Adhesive

- (1) When ceramic tile is applied to a mortar bed with adhesive, the bed shall be not less than 12.5 mm (½ in) thick.
- (2) The mortar bed described in Sentence (1) shall consist of by volume,
 - (a) 1 part Portland cement,
 - (b) 3 parts sand, and
 - (c) 1 part water.
- (3) At least one layer of galvanized diamond mesh wire lath shall be imbedded in the mortar bed.
- (4) Joints in the wire lath required by Sentence (3) shall be overlapped not less than 12 mm (½ in).
- (5) The wire lath required in Sentence (3) shall be fastened to the subfloor with,
 - (a) lath nails not less than 38 mm (1½ in) length spaced not more than 150 mm (5⅞ in) o.c., or
 - (b) staples not less than 38 mm (1½ in) in length spaced not more than 150 mm (5⅞ in) o.c.
- (6) Asphalt sheathing paper, felt or polyethylene film shall be applied between the mortar bed and the wood subfloor.
- (7) Floor joists supporting the mortar bed described in Sentence (1) shall,
 - (a) be spaced not more than 400 mm (15¾ in) o.c., and
 - (b) have no fewer than two rows of 38 mm x 38 mm (2 in by 2 in) cross bridging.
- (8) The tile joints for the ceramic tile in Sentence (1) shall be grouted with cement grout which shall be compressed into joints between the tiles and then wiped smooth.

Section 9.31. Plumbing Facilities

9.31.1. Scope

9.31.1.1. Application

- (1) Except as provided in Sentence (2), this Section applies to *plumbing* facilities and *plumbing systems* serving *dwelling units*.
- (2) *Plumbing* facilities, grab bars, floor drains and floor and wall finishes around urinals shall conform to Subsection 3.7.4. and Article 7.1.5.2. in,
 - (a) a *recreational camp*,
 - (b) a *camp for housing of workers*, or
 - (c) all other *buildings* not described in Sentence (1).
- (3) Medical gas piping systems shall conform to Subsection 3.7.5.

9.31.2. General

9.31.2.1. General

- (1) The *construction of plumbing systems* shall conform to Part 7.