



# VILLAGE OF RUIDOSO

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## Shower Pan/Wall Installation and Testing Requirements

### UPC 408.4-408.7.1 & IRC 702.3.8.1 & 702.4.2

#### 2012 UNIFORM PLUMBING CODE

408.4 Waste Outlet. Showers shall have a waste outlet and fixture tailpiece not less than 2 inches (50 mm) in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.1 for drainage piping. Strainers serving shower drains shall have a waterway at least equivalent to the area of the tailpiece.

408.5 Finished Curb or Threshold. Where a shower receptor has a finished dam, curb, or threshold it shall be not less than 1 inch (25.4 mm) lower than the sides and back of such receptor. In no case shall a dam or threshold be less than 2 inches (51 mm) or exceeding 9 inches (229 mm) in depth where measured from the top of the dam or threshold to the top of the drain. Each such receptor shall be provided with an integral nailing flange to be located where the receptor meets the vertical surface of the finished interior of the shower compartment. The flange shall be watertight and extend vertically not less than 1 inch (25.4 mm) above the top of the sides of the receptor. The finished floor of the receptor shall slope uniformly from the sides towards the drain not less than 1/4 inch per foot (20.8 mm/m), nor more than 1/2 inch per foot (41.8 mm/m). Thresholds shall be of sufficient width to accommodate a minimum 22 inch (559 mm) door. Shower doors shall open so as to maintain not less than a 22 inch (559 mm) unobstructed opening for egress

#### Exceptions:

- (1) Showers that are designed to be in accordance with the accessibility standards listed in Table 1401.1.
- (2) A cast-iron shower receptor flange shall be not less than 0.3 of an inch (7.62 mm) in height.
- (3) For flanges not used as a means of securing, the sealing flange shall be not less than 0.3 of an inch (7.62 mm) in height.

408.6 Shower Compartments. Shower compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches (0.6606 m<sup>2</sup>) and shall also be capable of encompassing a 30 inch (762 mm) circle. The minimum required area and dimensions shall be measured at a height equal to the top of the threshold and at a point tangent to its centerline. The area and dimensions shall be maintained to a point of not less than 70 inches (1778 mm) above the shower drain outlet with no protrusions other than the fixture valve or valves, shower head, soap dishes, shelves, and safety grab bars, or rails. Fold-down seats in accessible shower stalls shall be permitted to protrude into the 30 inch (762 mm) circle. Exceptions: (1) Showers that are designed to be in accordance with ICC A117.1. (2) The minimum required area and dimension shall not apply for a shower receptor having overall dimensions of not less than 30 inches (762 mm) in width and 60 inches (1524 mm) in length.

408.7 Lining for Showers and Receptors, Shower receptors built on-site shall be watertight and shall be constructed from approved-type dense, nonabsorbent, and noncorrosive materials. Each such receptor shall be adequately reinforced, shall be provided with an approved flanged floor drain designed to make a watertight joint in the floor, and shall have smooth, impervious, and durable surfaces. Shower receptors shall have the subfloor and rough side of walls to a height of not less than 3 inches (76 mm) above the top of the finished dam or threshold shall be first lined with sheet plastic, lead, or copper, or shall be lined with other durable and watertight materials. Showers that are provided with a built in place, permanent seat or seating area that is located within the shower enclosure, shall be first lined with sheet plastic, lead, copper, or shall be lined with other durable and watertight materials that extend not less than 3 inches (76 mm) above horizontal surfaces of the seat or the seating area. Lining materials shall be pitched 1/4 inch per foot (20.8 mm/m) to weep holes in the subdrain of a smooth and solidly formed subbase. Such lining materials shall extend upward on the rough jambs of the shower opening to a point not less than 3 inches (76 mm) above the horizontal surfaces of the seat or the seating area, the top of the finished dam or

threshold and shall extend outward over the top of the permanent seat, permanent seating area, or rough threshold and be turned over and fastened on the outside face of both the permanent seat, permanent seating area, or rough threshold and the jambs. Nonmetallic shower subpans or linings shall be permitted to be built up on the job site of not less than three layers of standard grade 15 pound (6.8 kg) asphalt-impregnated roofing felt. The bottom layer shall be fitted to the formed subbase and each succeeding layer thoroughly hot-mopped to that below. Corners shall be carefully fitted and shall be made strong and watertight by folding or lapping and each corner shall be reinforced with suitable webbing hot-mopped in place. Folds, laps, and reinforcing webbing shall extend not less than 4 inches (102 mm) in all directions from the corner, and webbing shall be of approved type and mesh, producing a tensile strength of not less than 50 lb./ftsq (244 kg/m<sup>2</sup>) in either direction. Nonmetallic shower subpans or linings shall be permitted to consist of multilayers of other approved equivalent materials suitably reinforced and carefully fitted in place on the job site as elsewhere required in this section. Linings shall be properly recessed and fastened to approved backing so as not to occupy the space required for the wall covering, and shall not be nailed or perforated at a point that is less than 1 inch (25.4 mm) above the finished dam or threshold. An approved-type subdrain shall be installed with a shower subpan or lining. Each such subdrain shall be of the type that sets flush with the subbase and shall be equipped with a clamping ring or other device to make a tight connection between the lining and the drain. The subdrain shall have weep holes into the waste line. The weep holes located in the subdrain clamping ring shall be protected from clogging. Shower lining materials shall comply with approved standards acceptable to the Authority Having Jurisdiction. Lead and copper subpans or linings shall be insulated from conducting substances other than their connecting drain by 15 pound (6.8 kg) asphalt felt or its equivalent, and no lead pan or liner shall be constructed of material weighing less than 4 lb./ftsq. (19 kg/m<sup>2</sup>). Copper pans or liners shall be not less than No. 24 B & S Gauge (0.02 inches) (0.51 mm). Joints in lead pans or liners shall be burned. Joints in copper pans or liners shall be soldered or brazed. Plastic pans shall not be coated with asphalt-based materials.

408.7.1 Tests for Shower Receptors. Shower receptors shall be tested for watertightness by filling with water to the level of the rough threshold. The test plug shall be so placed that both upper and under sides of the subpan shall be subjected to the test at the point where it is clamped to the drain.

2009 IRC 702.3.8.1 Limitations; Water resistant gypsum backing board shall not be used where there will be direct exposure to water, or in areas subject to continuous high humidity.

2009 IRC 702.4.2 Fiber-cement, fiber-mat reinforced cement, glass mat gypsum backers and fiber-reinforced gypsum backers; Fiber-cement, fiber-mat reinforced cement, glass mat gypsum backers or fiber-reinforced gypsum backers in compliance with ASTM C 1288, C1325, C 1178 or C 1278, respectively, and installed in accordance with the manufacturers' recommendations shall be used as backers for wall tile in tub and shower areas and wall panels in shower areas.

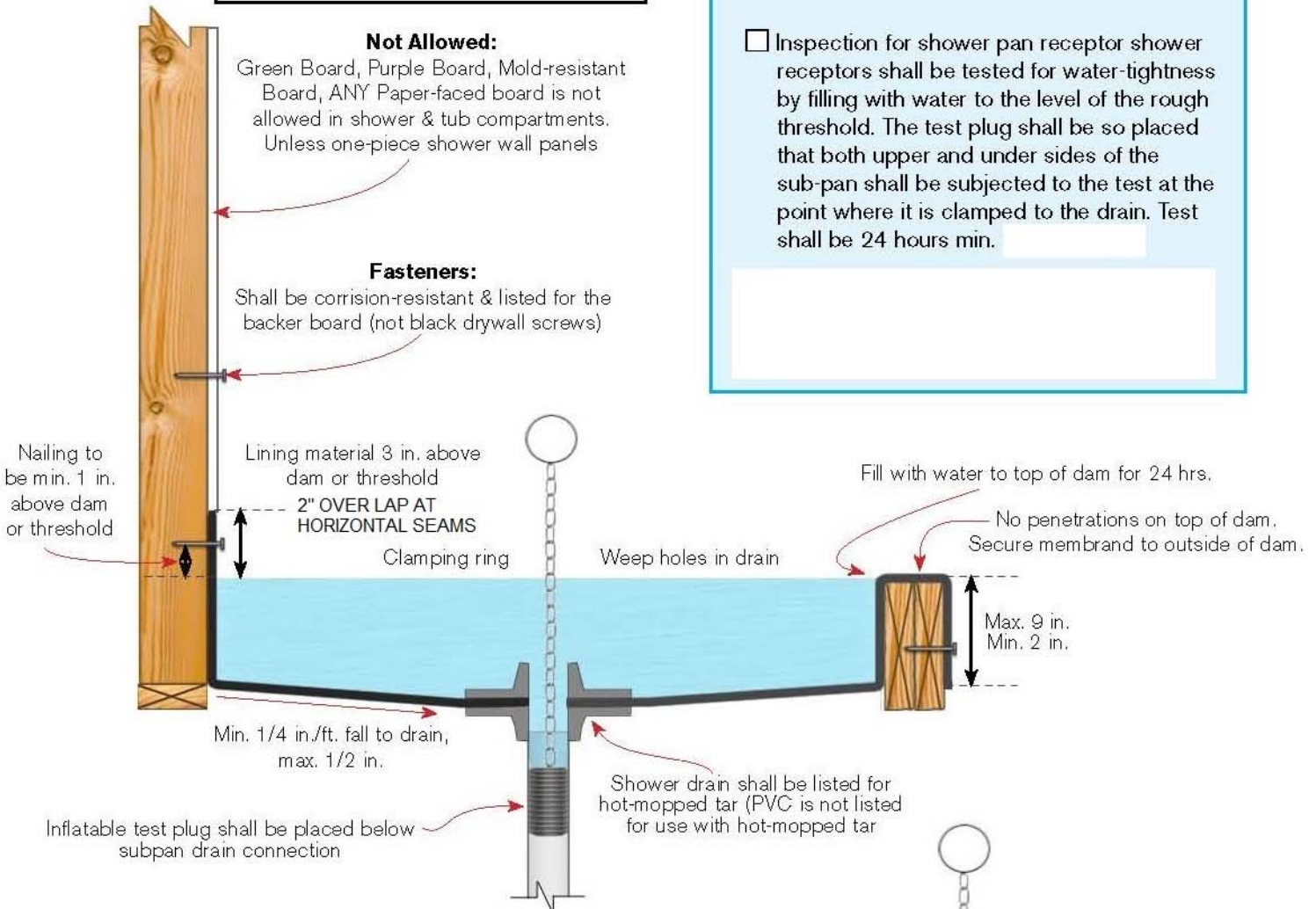
# On-site Built-up Shower Receptors

**Approved Tile Backer Methods for Shower & Tub Compartment**

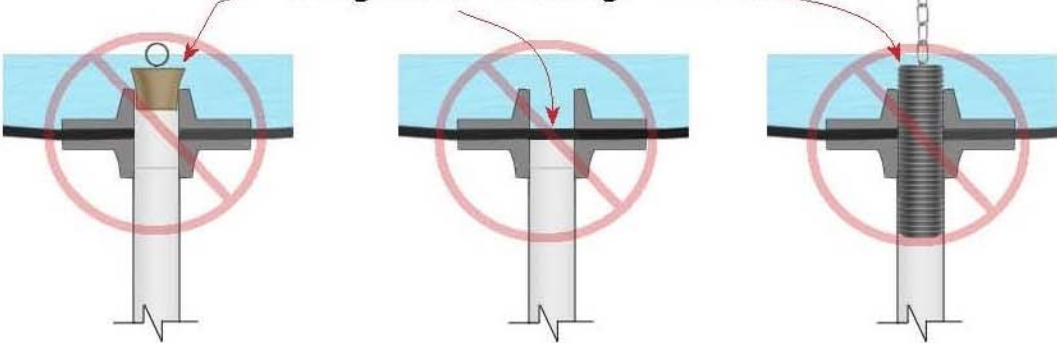
**Top Three Missed/inspection Failures:**

1. Wrong Backer Board
2. Wrong Fasteners
3. Wrong testing plug

Inspection for shower pan receptor shower receptors shall be tested for water-tightness by filling with water to the level of the rough threshold. The test plug shall be so placed that both upper and under sides of the sub-pan shall be subjected to the test at the point where it is clamped to the drain. Test shall be 24 hours min.



**Wrong method of testing!**



### Frequently Missed/Inspection Failure

- Base for tile in shower and tub compartments: Cement, fiber-cement or glass mat gypsum backers shall be used as a base for wall and ceiling panels in shower and bathtub compartments and shall be installed per manufacturer's recommendations.
  - Fasteners: Cement, fiber-cement or glass mat gypsum backers shall be secured with its listed fasteners AND shall be **CORROSION RESISTANT** in shower/tub compartments.
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- Water resistant gypsum board /green board/purple board shall **NOT** be used in the following locations:
    - In showers where used as the tile base or backer.
    - Where there will be direct exposure to water or in areas subject to continuous high humidity.
    - On ceilings where frame spacing exceeds 12" on center for 1/2" wall board and more than 16" on center for 5/8" water-resistant drywall.
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- On-site built-up shower receptors:** All lining, hot-mopped or other approved materials shall be pitched one-quarter (1/4) inch per foot to weep holes in the sub drain of a smooth and solidly formed sub-base. All such lining materials shall extend upward on the rough jambs of the shower opening to a point no less than three (3) inches above the top of the finished dam or threshold and shall extend outward over the top of the rough threshold and be turned over and fastened on the outside face of both the rough threshold and the jambs. no perforations/nails lower than 1" above dam.
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- Factory built shower receptors:** No shower receptor shall be installed unless it conforms to acceptable standards/ listed as referenced in **UPC** table 14-1. The flange shall be watertight and extend vertically a min. of (1") above top of the sides of the receptor.
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- Floor drains shall be considered plumbing fixtures and each such drain shall be provided with an approved type strainer. Floor drains, floor receptors, and shower drains shall be of an approved type, suitably flanged to provide a watertight joint in the floor.
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- Linings shall be fastened to an approved backing and shall not be nailed or perforated at any point which may be less than one (1) inch above the finished dam or threshold.
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- All showers, in all occupancies, shall have a smooth, hard, nonabsorbent surface to a height of not less than 72" inches above the drain inlet. Materials other than structural elements used in such walls shall be of a type that is not adversely affected by moisture. Wood windows installed less than 72" above the drain inlet are not allowed.
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- Thresholds shall be of sufficient width to accommodate a minimum 22" door.