

on the discharge side of the flushometer valve, with the critical level of the vacuum breaker at least six (6) inches (152 mm) above the overflow rim of the bowl (Section 603.4.1 and Figure 4-13).

412.1 Floor Drains—Floor drains (see Figure 4-16) are considered to be plumbing fixtures and must be provided with approved strainers (see Figure 4-4) having a waterway equivalent to the area of the tailpiece. Floor drains, floor receptors and shower drains shall be of an approved type, flanged to provide a watertight joint in the floor.

Floor drains are not to be used as receptors. They have neither the shape nor the capacity to prevent flooding or splashing (reference Section 804.1). Floor drains are intended solely to collect accidental spills, overflows, or water utilized for washing the floor surface. They are not intended as secondary fixtures that receive waste from primary fixtures that require either an airgap or an airbreak.

412.5 Shower Receptors—Shower receptors are plumbing fixtures and must conform to the requirements of Section 401.0. Each such receptor must be constructed of vitrified china or earthenware, ceramic tile, porcelain enameled metal or other material acceptable to the Administrative Authority. No shower receptor shall be installed unless it complies with acceptable standards listed in Chapter 14, or until the Administrative Authority has approved either the specifications for, or a prototype of, a proposed receptor. Standards are contained in Table 14-1, and recommended standards for the installation of tile lined shower receptors are contained in IAPMO Installation Standard IS-4. In

either case, the receptors must meet all the requirements set forth in Chapter 4.

412.6 Manufactured shower receptors shall be of an approved type, constructed with the finished dam, curb or threshold at least one (1) inch (25 mm) lower than the sides and back (see Figure 4-17).

The minimum height of a finished dam or threshold is two (2) inches (51 mm), and the maximum height is limited to nine (9) inches (229 mm), measured from the top of the threshold to the top of drain (see Figure 4-18). 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 a minimum of one (1) inch (25 mm) above the top of the sides of the receptor. The finished floor shall have a uniform slope from the sides of the receptor to the drain. The slope cannot be less than one-quarter (1/4) inch nor more than one-half (1/2) inch per foot (21 – 42 mm/m). (See Figure 4-18.)

Exception: Showers which are designed to comply with the accessibility standards listed in Table 14-1.

It is required that:

412.7 No shower stall or receptor shall have a finished interior dimension which is less than thirty (30) inches (762 mm);

Each shower compartment shall have a finished size capable of completely encompassing a thirty (30) inch (762 mm) circle when the door or curtain is closed

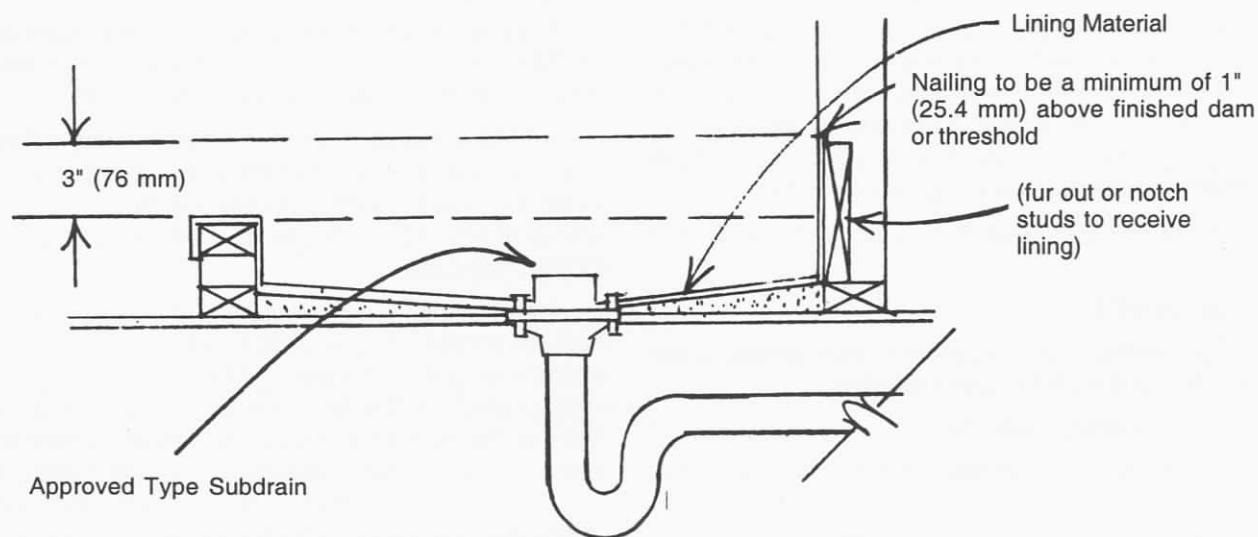


Figure 4-20

Proper Method of Installing Lining Material on a Shower Receptor (Section 412.8 [2])

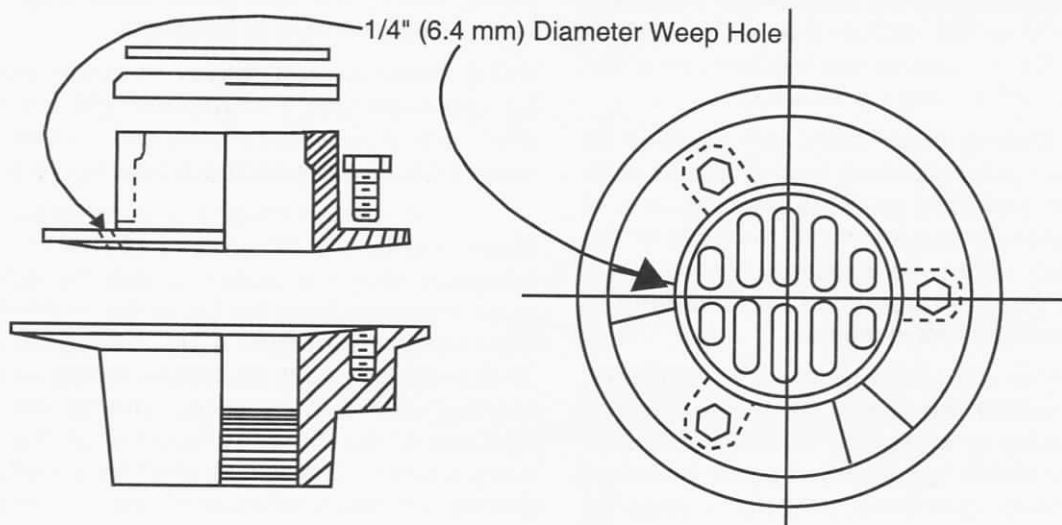


Figure 4-21
Approved Type Subdrain (Section 412.8 (2), paragraph 4 and Section 412.1)

and;

No shower shall have a horizontal cross-sectional area of less than 1024 square inches (0.66 m²). (See Figure 4-19)

412.8 Non-metallic shower subpans or linings may also consist of multi-layers of other approved materials reinforced and fitted on the job as elsewhere required by the Code. The lining must be properly recessed and fastened to approved backing in such a manner that it does not occupy the space required for wall covering. It must not be nailed or perforated at any point less than one (1) inch (25 mm) above the finished dam or threshold. Figure 4-20 illustrates the proper method of installing lining material.

412.8 An approved type subdrain (see Figure 4-21) shall be installed with every shower subpan or lining. Each such subdrain shall be of the type that sets flush with the sub-base and shall be equipped with a clamping ring or other device to make a tight connection between the lining and the drain.

412.8 (1) Shower receptors built directly on the ground shall:

- Be watertight;
 - Be constructed of approved type dense, non-absorbent and noncorrosive materials;
 - Be adequately reinforced;
 - Be provided with an approved flanged floor drain made of cast iron, brass, or other approved material designed to make watertight joint in the floor;
 - Have smooth, impervious and durable surfaces;
- When shower receptors are built above ground:

412.8 (2) The subfloor and rough side of walls shall be first lined with sheet lead or copper or other acceptable durable and watertight material to a height not less than three (3) inches (76 mm) above the top of the finished dam. The lining material must 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 jambs.

Lead and copper subpans or linings shall be insulated from all corrosive material by fifteen (15) pound (6.8 kg) asphalt felt or its equivalent.

Lead pans shall be constructed of material weighing not less than four (4) pounds per square foot (19.5kg/m²). Joints must be burned. (Footnote).

Copper pans must be constructed of at least No. 24 B&S gauge (.02") (0.5 mm) material, and joints must be silver brazed. (See IS 4, Sec. 3.2.3).

All lining materials shall be pitched one-quarter (1/4) inch per foot (21 mm/m) to weep holes in the subdrain (see IAPMO Material and Property Standard PS-16) by means of a smooth and solidly formed sub-base.

Non-metallic shower subpans or linings may be built-up on the job site of not less than 3 layers of standard grade fifteen (15) pound (6.8 kg) impregnated roofing felt. The bottom layer shall be fitted to the formed sub-base and each succeeding layer thoroughly hot mopped to the one below. All 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. All folds, laps and reinforced

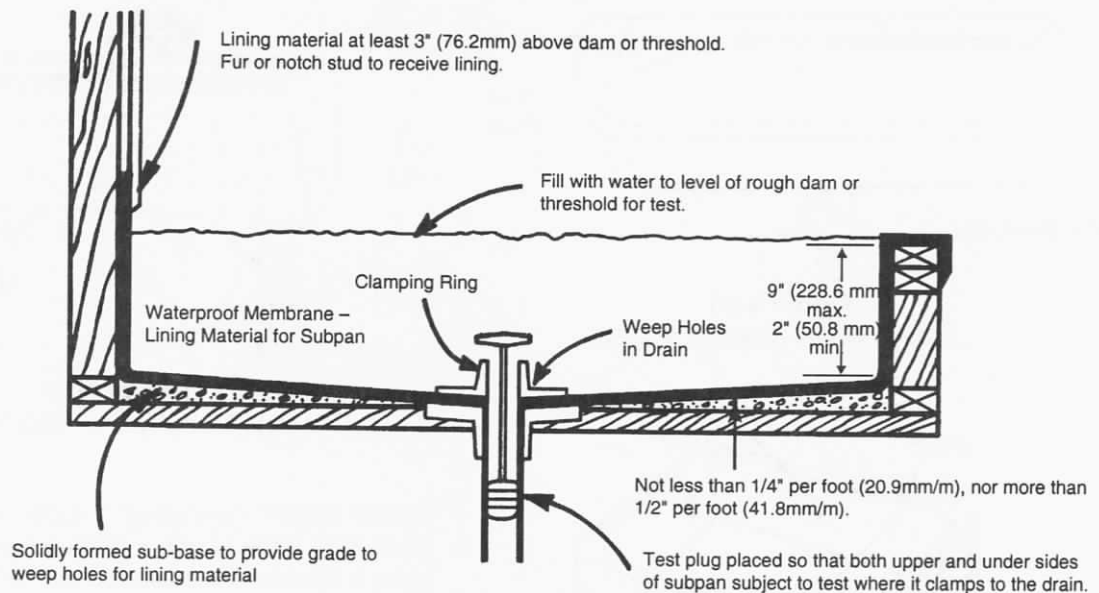


Figure 4-22
Test Procedure for a Site-Constructed Shower Receptor (Section 412.8.2)

webbing must extend at least four (4) inches (102 mm) in all directions from the corner. All webbing must be of an approved type and mesh producing a tensile strength of not less than fifty (50) pounds per square inch (344.5 kPa) in either direction.

412.8.1 The shower receptor must be tested for leaks by filling it with water to the level of the rough threshold. The test plug must be placed so that both the top and the bottom sides of the subpan are subjected to the test at the point where the pan is clamped to the drain Figure 4-22.

412.9 In addition to these requirements, floors of public shower rooms must have a non-skid surface.

They must drain so that waste water from one bather does not pass over the area occupied by other bathers. Gutters in public or gang shower rooms must have rounded corners to facilitate cleaning. The gutters must be sloped at least two percent toward drains. Drains in the gutters must be spaced not more

than eight (8) feet (2438 mm) from the sidewalls, and not more than 16 feet (4877 mm) apart.

Public shower rooms typically have several showerheads that must be spaced with enough separation to prevent unintended splashing from one bather to another. Showerheads may be placed on one or more walls. They may be arranged around a pedestal or column to provide for more shower stations centered on a centrally located water source. In all cases, water must flow away from the feet of each bather in a way that does not flow over

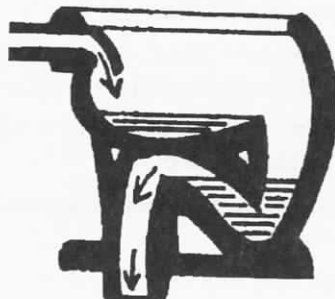


Figure 4-23
Washout Closet (Section 406.1)

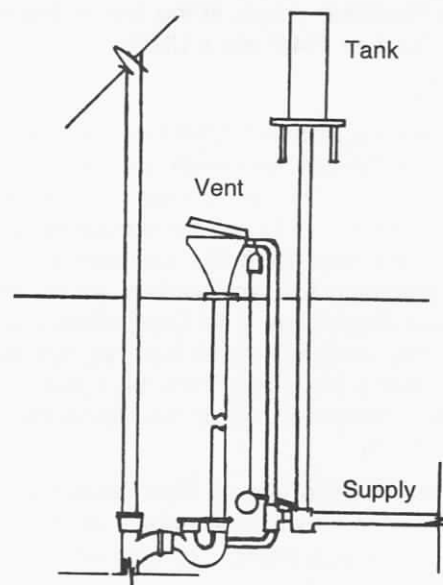


Figure 4-24
Frostproof Closet (Section 406.1 and 313.6)