

CHAPTER 32

TRAPS AND STORM DRAINAGE

SECTION P3201 FIXTURE TRAPS

P3201.1 Design of traps. Traps shall be of standard design, shall have smooth uniform internal waterways, shall be self-cleaning and shall not have interior partitions except where integral with the fixture. Traps shall be constructed of lead, cast iron, cast or drawn brass or approved plastic. Tubular brass traps shall be not less than No. 20 gage (0.8 mm) thickness. Solid connections, slip joints and couplings are permitted to be used on the trap inlet, trap outlet, or within the trap seal. Slip joints shall be accessible.

P3201.2 Trap seals and trap seal protection. Traps shall have a liquid seal not less than 2 inches (51 mm) and not more than 4 inches (102 mm). Traps for floor drains shall be fitted with a trap primer or shall be of the deep seal design.

P3201.3 Trap setting and protection. Traps shall be set level with respect to their water seals and shall be protected from freezing. Trap seals shall be protected from siphonage, aspiration or back pressure by an approved system of venting (see Section P3101).

P3201.4 Building traps. Building traps shall not be installed, except in special cases where sewer gases are extremely corrosive or noxious, as directed by the building official.

P3201.5 Prohibited trap designs. The following types of traps are prohibited:

1. Bell traps.
2. Separate fixture traps with interior partitions, except those lavatory traps made of plastic, stainless steel or other corrosion-resistant material.
3. "S" traps.
4. Drum traps.
5. Trap designs with moving parts.

P3201.6 Number of fixtures per trap. Each plumbing fixture shall be separately trapped by a water seal trap. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm) and the horizontal distance shall not exceed 30 inches (762 mm) measured from the center line of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section P2706.2. Fixtures shall not be double trapped.

Exceptions:

1. Fixtures that have integral traps.
2. A single trap shall be permitted to serve two or three like fixtures limited to kitchen sinks, laundry tubs and lavatories. Such fixtures shall be adjacent to each other and located in the same room with a continuous waste arrangement. The trap shall be installed at the center fixture where three fixtures are installed. Com-

mon trapped fixture outlets shall be not more than 30 inches (762 mm) apart.

3. Connection of a laundry tray waste line into a standpipe for the automatic clothes-washer drain is permitted in accordance with Section P2706.2.1.

P3201.7 Size of fixture traps. Fixture trap size shall be sufficient to drain the fixture rapidly and not less than the size indicated in Table P3201.7. A trap shall not be larger than the drainage pipe into which the trap discharges.

**TABLE P3201.7
SIZE OF TRAPS AND TRAP ARMS FOR PLUMBING FIXTURES**

PLUMBING FIXTURE	TRAP SIZE MINIMUM (inches)
Bathtub (with or without shower head and/or whirlpool attachments)	1½
Bidet	1¼
Clothes washer standpipe	2
Dishwasher (on separate trap)	1½
Floor drain	2
Kitchen sink (one or two traps, with or without dishwasher and garbage grinder)	1½
Laundry tub (one or more compartments)	1½
Lavatory	1¼
Shower (based on the total flow rate through showerheads and bodysprays) Flow rate:	
5.7 gpm and less	1½
More than 5.7 gpm up to 12.3 gpm	2
More than 12.3 gpm up to 25.8 gpm	3
More than 25.8 gpm up to 55.6 gpm	4
Water closet	Note a

For SI: 1 inch = 25.4 mm.

a. Consult fixture standards for trap dimensions of specific bowls.

SECTION P3202 STORM DRAINAGE

P3202.1 Scope. The provisions of this section shall govern the materials, design, construction and installation of storm drainage.

P3202.2 Subsoil drains. Subsoil drains shall be open-jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table P3202.2. Such drains shall not be less than 4 inches (102 mm) in diameter. Where the building is subject to backwater, the subsoil drain shall be protected by an accessibly located backwater valve. Subsoil drains shall not be required to have either a gas-tight cover or vent. The sump and pumping system shall comply with Section P3202.3.

**TABLE P3202.2
SUBSOIL DRAIN PIPE**

MATERIAL	STANDARD
Asbestos-cement pipe	ASTM C 508
Cast-iron pipe	ASTM A 74, ASTM A 888, CISPI 301
Polyethylene (PE) plastic pipe	ASTM F 405, CSA B182.1, CSA B182.6, CSA B182.8
Polyvinyl chloride (PVC) plastic pipe (type sewer pipe, PS25, PS50 or PS100)	ASTM D 2729, ASTM F 891, CSA B182.2, CSA B182.4
Stainless steel drainage systems, Type 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C 4, ASTM C 700

P3202.3 Pumping system. The sump pump, pit and discharge piping shall conform to Section P3202.3.1 through P3202.3.4.

P3202.3.1 Pump capacity and head. The sump pump shall be of a capacity and head appropriate to anticipated use requirements.

P3202.3.2 Sump pit. The sump pit shall not be less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, steel, plastic, cast-iron, concrete or other approved material, with a removable cover adequate to support anticipated loads in the area of use. The pit floor shall be solid and provide permanent support for the pump.

P3202.3.3 Electrical. Electrical outlets shall meet the requirements of Chapters 33 through 42.

P3202.3.4 Piping. Discharge piping shall meet the requirements of Sections P3002.1, P3002.2, P3002.3 and P3003. Discharge piping shall include an accessible full flow check valve. Pipe and fittings shall be the same size, or larger than, pump discharge tapping.