

SECTION 15150 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

SUMMARY

This Section includes soil and waste, sanitary drainage and vent piping inside the building.

QUALITY ASSURANCE

Piping materials shall bear label, stamp, or other markings of specified testing agency.

Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping; "NSF-drain" for plastic drain piping; "NSF-tubular" for plastic continuous waste piping; and "NSF-sewer" for plastic sewer piping.

PART 2 - PRODUCTS

PIPING MATERIALS

Hubless Cast-Iron Pipe and Fittings: ASTM A 888 or CISPI 301.

Couplings: ASTM C 1277 assembly of metal housing, corrosion-resistant fasteners, and ASTM C 564 rubber sleeve with integral, center pipe stop.

Compact, Stainless-Steel Couplings: CISPI 310 with ASTM A 167, Type 301, or ASTM A 666, Type 301, stainless-steel corrugated shield; stainless-steel bands; and sleeve.

NPS 1-1/2 to NPS 4 (DN 40 to DN 100): 2-1/8-inch- (54-mm-) wide shield with 2 bands.

NPS 5 and NPS 6 (DN 125 and DN 150): 3-inch- (76-mm-) wide shield with 4 bands.

Steel Pipe: ASTM A 53, Type E or S, Grade A or B, Schedule 40, galvanized. Include ends matching joining method.

ABS Pipe: ASTM D 2661, Schedule 40, solid wall.

ABS Socket Fittings: ASTM D 2661, made to ASTM D 3311, drain, waste, and vent patterns.

ABS Special Fittings: ASTM F 409, drainage-pattern tube and tubular fittings with ends as required for application.

PVC Pipe: ASTM D 2665, solid-wall drain, waste, and vent.

PVC Socket Fittings: ASTM D 2665, socket type, made to ASTM D 3311, drain, waste, and vent patterns.

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PVC Special Fittings: ASTM F 409, drainage-pattern tube and tubular fittings with ends as required for application.

PART 3 - EXECUTION

PIPING APPLICATIONS

Transition and special fittings with pressure ratings at least equal to piping pressure ratings may be used in applications below, unless otherwise indicated.

Flanges may be used on aboveground pressure piping, unless otherwise indicated.

Aboveground, Soil, Waste, and Vent Piping: Use the following piping materials for each size range:

**NPS 1-1/4 and NPS 1-1/2 (DN 32 and DN 40):** Use **NPS 1-1/2 (DN 40)** hubless, cast-iron soil piping and one of the following:

Couplings: Compact, stainless steel.

**NPS 1-1/4 and NPS 1-1/2 (DN 32 and DN 40):** ABS pipe, ABS socket fittings, and solvent-cemented joints.

**NPS 1-1/4 and NPS 1-1/2 (DN 32 and DN 40):** PVC pipe, PVC socket fittings, and solvent-cemented joints.

**NPS 2 to NPS 4 (DN 50 to DN 100):** Hubless, cast-iron soil piping and one of the following:

Couplings: Compact, stainless steel.

**NPS 2 to NPS 4 (DN 50 to DN 100):** ABS pipe, ABS socket fittings, and solvent-cemented joints.

**NPS 2 to NPS 4 (DN 50 to DN 100):** PVC pipe, PVC socket fittings, and solvent-cemented joints.

Couplings: Compact, stainless steel.

Underground, Soil, Waste, and Vent Piping: Use the following piping materials for each size range:

**NPS 1-1/2 (DN 40):** Hubless, cast-iron soil piping and one of the following:

Couplings: Compact, stainless steel.

**NPS 1-1/2 (DN 40):** ABS pipe, ABS socket fittings, and solvent-cemented joints.

**NPS 1-1/2 (DN 40):** PVC pipe, PVC socket fittings, and solvent-cemented joints.

**NPS 2 to NPS 4 (DN 50 to DN 100):** Hubless, cast-iron soil piping and one of the following:

Couplings: Compact, stainless steel.

**NPS 2 to NPS 4 (DN 50 to DN 100):** ABS pipe, ABS socket fittings, and solvent-cemented joints.

**NPS 2 to NPS 4 (DN 50 to DN 100):** PVC pipe, PVC socket fittings, and solvent-cemented joints.

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**NPS 2 to NPS 4 (DN 50 to DN 100):** Use **NPS 3 and NPS 4 (DN 80 and DN 100)** cellular-core, Sewer and Drain Series, PVC pipe; PVC socket fittings; and solvent-cemented joints.

PIPING INSTALLATION

Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if 2 fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:

Install ABS soil and waste drainage and vent piping according to ASTM D 2661.

Install PVC soil and waste drainage and vent piping according to ASTM D 2665.

Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

JOINT CONSTRUCTION

Cast-Iron, Soil-Piping Joints: Make joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."

Hubless Joints: Make with rubber gasket and sleeve or clamp.

Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

PVC Nonpressure Piping Joints: Join piping according to ASTM D 2665.

CONNECTIONS

Connect drainage and vent piping to the following:

Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.

Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.

FIELD QUALITY CONTROL

During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.

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Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction.

Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.

Prepare reports for tests and required corrective action.

CLEANING

Clean interior of piping. Remove dirt and debris as work progresses.

Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

Place plugs in ends of uncompleted piping at end of day and when work stops.

PROTECTION

Exposed ABS and PVC Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.

END OF SECTION 15150