

AN AMERICAN NATIONAL STANDARD
IAPMO/ANSI UPC 1-2003

UNIFORM PLUMBING CODE™



Approved American National Standard



**Comprehensive
Consensus
Codes™**



mm/m) or two (2) percent, any such pipe or piping four (4) inches (100 mm) or larger in diameter may have a slope of not less than one-eighth (1/8) of an inch per foot (10.5 mm/m) or one (1) percent, when first approved by the Authority Having Jurisdiction.

709.0 Gravity Drainage Required.

Wherever practicable, all plumbing fixtures shall be drained to the public sewer or private sewage disposal system by gravity.

710.0 Drainage of Fixtures Located Below the Next Upstream Manhole or Below the Main Sewer Level.

710.1 Drainage piping serving fixtures which have flood-level rims located below the elevation of the next upstream manhole cover of the public or private sewer serving such drainage piping shall be protected from backflow of sewage by installing an approved type of backwater valve. Fixtures above such elevation shall not discharge through the backwater valve.

710.2 Drainage piping serving fixtures that are located below the crown level of the main sewer shall discharge into an approved watertight sump or receiving tank, so located as to receive the sewage or wastes by gravity. From such sump or receiving tank, the sewage or other liquid wastes shall be lifted and discharged into the building drain or building sewer by approved ejectors, pumps, or other equally efficient approved mechanical device.

710.3 A sewage ejector or sewage pump receiving the discharge of water closets or urinals:

710.3.1 Shall have a minimum discharge capacity of twenty (20) gallons (75.7 liters) per minute.

710.3.2 In single dwelling units, the ejector or pump shall be capable of passing a one and one-half (1-1/2) inch (38 mm) diameter solid ball, and the discharge piping of each ejector or pump shall have a backwater valve and gate valve, and be a minimum of two (2) inches (51 mm) in diameter.

710.3.3 In other than single-dwelling units, the ejector or pump shall be capable of passing a two (2) inch (51 mm) diameter solid ball, and the discharge piping of each ejector or pump shall have a backwater valve and gate valve, and be a minimum of three (3) inches (80 mm) in diameter.

710.4 The discharge line from such ejector, pump, or other mechanical device shall be provided with an accessible backwater or swing check valve and gate or ball valve. If the gravity drainage line to which such discharge line connects is horizontal, the method of connection shall be from the top through

a wye branch fitting. The gate or ball valve shall be located on the discharge side of the backwater or check valve.

Gate or ball valves, when used on drainage work, shall be fullway type with working parts of corrosion-resistant metal. Sizes four (4) inches (100mm) or more in diameter shall have cast-iron bodies, and sizes less than four (4) inches (100 mm), cast iron or brass bodies.

710.5 Building drains or building sewers receiving discharge from any pump or ejector shall be adequately sized to prevent overloading. Two (2) fixture units shall be allowed for each gallon per minute (0.06 L/s) of flow.

710.6 Backwater valves, gate valves, fullway ball valves, unions, motors, compressors, air tanks, and other mechanical devices required by this section shall be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover.

Backwater valves shall have bodies of cast iron, plastic, brass, or other approved materials; noncorrosive bearings, seats, and self-aligning discs; and shall be constructed so as to insure a positive mechanical seal. Such backwater valves shall remain sufficiently open during periods of low flows to avoid screening of solids and shall not restrict capacities or cause excessive turbulence during peak loads. Unless otherwise listed, valve access covers shall be bolted type with gasket, and each valve shall bear the manufacturer's name cast into body and cover.

710.7 The drainage and venting systems in connection with fixtures, sumps, receiving tanks, and mechanical waste-lifting devices, shall be installed under the same requirements as provided for in this code for gravity systems.

710.8 Sumps and receiving tanks shall be watertight and shall be constructed of concrete, metal, or other approved materials. If constructed of poured concrete, the walls and bottom shall be adequately reinforced and designed to recognized acceptable standards. Metal sumps or tanks shall be of such thickness as to serve their intended purpose and shall be treated internally and externally to resist corrosion.

710.9 All such sumps and receiving tanks shall be automatically discharged and, when in any "public use" occupancy, shall be provided with dual pumps or ejectors arranged to function alternately in normal use and independently in case of overload or mechanical failure. The pumps shall have an audio and visual alarm, readily accessible, that signals pump failure or an overload condition. The lowest