20:54:02:01. Conformance with uniform code -- Exceptions. All plumbing materials and plumbing systems or parts of plumbing systems installed must meet or exceed the minimum provisions of the **Uniform Plumbing Code**, ~~2015~~ 2024 edition, including Appendices A, B, C, D, E, ~~and~~ I, K, L, M, N, O, Q, R and the ~~Green Plumbing and Mechanical Code Supplement~~ Water Efficiency and Sanitation Standard for the Built Environment, 2023 edition, with the following exceptions:

(1) Sections 103.0 to 107.2, inclusive, Table 104.5 of Chapter 1, ~~306.2, 307.1, 307.2,~~ 312.12.3, ~~312.13, 312.14,~~ 313.7, ~~314.2, 314.3~~, 317.1(5), 319.1, ~~408.8,~~ 422.5, ~~609.5 to 609.7(2), inclusive~~, 609.11.1, 609.11.2, 609.12 to 609.12.2, inclusive, ~~710.1, 713.3, 713.5, 714.4, 714.5, 716.1, 721.2~~, 722.2 to 723.1, inclusive, 802.1, 811.5, ~~814.2, 814.2.1~~, 904.2, 1101.5 to 1101.11, inclusive, 1101.15, to 1101.15.3, inclusive, Chapter 5, Chapter 12, Chapter 13, Chapter 14, ~~Chapter 15, Chapter 16~~, Table C 401.1 of Appendix C, E401.1 to E415.4 of Appendix E, inclusive, Appendix F, Appendix G, Appendix H, Appendix J, ~~Appendix K, and Appendix L,~~ Appendix P, and Appendix S. The ~~Green Plumbing and Mechanical Code Supplement~~ Water Efficiency and Sanitation Standard for the Built Environment, 2023 edition, is deemed to be a non-mandatory referenced standard and is applicable only when plumbing systems or installation methods are not referenced in the ~~2015~~ 2024 edition of the Uniform Plumbing Code;

(2) The words ~~"or repair" and~~ "or repairs" are removed from section 102.4;

(3) The words "Cap close to main and abandon the rest." are added to section 309.6;

~~(3)~~(4) The words "Voids around piping passing through concrete floors on the ground shall be ~~appropriately~~ sealed." are removed from section 312.1;

~~(4)~~(5) The word "water," is removed from the first sentence of section 312.6; and the words "No water piping shall be installed in an exterior wall or unheated attic. An exterior wall

includes any wall between a heated space and an unheated space. Water service piping must be installed with a minimum earth cover of 72 inches. Building sewers must be installed with a minimum earth cover of 42 inches. Building sewers on septic systems may be installed at any depth that will accommodate the burial depth of the septic tank. If the building sewer is installed at a depth less than 30 inches, the pipe shall be protected from freezing with a minimum of 3 inches of foam insulation above and below the pipe." is added to section 312.6;

~~(5)~~(6) The words "~~1~~ and Chapter 14, "Firestop Protection"" are removed from section 312.7;

~~(6)~~(7) The words "Fuel gas piping shall be protected in accordance with Section 1210.4.3" are removed from section 312.9;

~~(7)~~(8) The words "or wrapped" are added after the word "bored" in section 312.10;

~~(8)~~(9) The words "metal" and "securely fastened to the adjoining structure" are removed from section 312.12.2;

~~(9)~~(10) The words "and in gas piping as permitted by section 1212.~~5~~ 6" are removed from section 315.1;

(11) The words "closet bends or stubs shall be cut off so as to present a smooth surface even with the top of the closet ring before rough inspection is called" are changed to "The top of the closet flange shall be installed above the finished floor not to exceed three-~~eights~~ eighths of an inch thick" in section 402.6.1;

(12) The words "except for guest rooms in hotels, motels, dormitories, boarding houses, and similar occupancies, which may be round." is added at the end of the second sentence in section 411.1;

(13) The words "except closed front seats shall be permitted in hotels, motels, guest rooms, dormitories, boarding houses, and similar occupancies" are added to the end of the second sentence in section 411.3;

~~(12)~~(14) The words "(5) In all mechanical rooms. The floor shall slope toward the floor drain." are added to section 418.3;

(15) The words "(6) In the lowest level." are added to section 418.3;

~~(10)~~(16) The word "shall" is changed to "may" in section 407.4 and footnote 6 of Table 422.1;

(17) The words "Unless separate facilities are required by state law," are added to the beginning of section 422.2(4).;

~~(13)~~(18) The words "A dual check backflow preventer ~~which~~ that conforms to ASSE 1024 shall be installed on the building side immediately downstream of the water meter where the water service enters the building." are added to section 602.3;

~~(14)~~(19) The words "Copies of testable backflow preventer test reports for the initial installation shall be sent to the water supplier. Copies of annual testable backflow preventer test reports shall be sent to the water supplier. A testable ~~device is a device with atmospheric vents, test ports, or both~~ assembly is an assembly with properly located, resiliently seated test cocks and tightly closing resiliently seated shut off valves at each end of the assembly." are added to section 603.4.2;

~~(15)~~(20) The words "Water-to-water heat exchangers that return the water back to the public system of waterworks may not be allowed on a public water system unless approved by the Authority Having Jurisdiction" are added to section 603.5.4 and "Section 505.4.1" is changed to "C302.0 to C302.3, inclusive" in section 603.5.4;

~~(16)~~(21) The words "~~U~~unless they are installed above the known groundwater table, they are installed at least ~~10~~ ten feet away from any sewer line or any other source of contamination, and they are installed only on seasonal-use facilities" are added to the end of section 603.5.17;

~~(17)~~(22) The words "or underground outside of structures" are removed from section 604.3;

~~(18)~~(23) The~~ words~~ sentence "This does not apply to electric water heaters." ~~Are~~ is added to the end of section 604.13;

~~(19)~~(24) The words "primer purple in color" are changed to "primer approved" in section 605.12.2;

(25) The word "discharge" is changed to "inlet" in the first sentence of section 606.2;

~~(20)~~(26) The~~ words~~ sentences "Individual shutoff valves shall be installed on each plumbing fixture and each exterior hose bib. Exception: In single family dwellings, individual valves are not required on tub valves, shower valves, and exterior hose bibs." are added to the end of section 606.5;

~~(21)~~(27) The word "provided" is changed to "approved" in section 608.5;

~~(22)~~(28) The words "or outside of the building with the end of the pipe not exceeding 2 feet (610 ~~MM~~ mm) and not less than 6 inches (152 ~~MM~~ mm) above the ground and pointing downwards" are removed from section 608.5(3);

~~(23)~~(29) The word "prohibited" is changed to "permitted" in section 608.5(7);

~~(24)~~(30) The~~ words~~ sentences "Building supply yard piping shall be not less than 12 inches (305 mm) below the average local frost depth. The cover shall be not less than 12 inches (305 mm) below finish grade." are removed from section 609.1;

~~(25)~~(31) The words "Potable water service piping shall not be located in, under, or above cesspools, septic tanks, septic tank drainage fields, or drainage pits. A separation of ~~25~~ twenty-five feet shall be maintained from such systems, except for livestock confinement facilities which may be ~~3~~ three feet" are added to section 609.2(2);

~~(26)~~(32) The words "shall not" is replaced with "may" in section 609.4;

(33) The word "shall" is replaced with "may" in section 609.5.

(34) The word "shall" is replaced with "may" in section 609.6.

(35) The word "shall" is replaced with "may in section 609.7.

~~(27)~~(36) The ~~words~~ sentence ***"Dwellings units are exempt from this requirement unless an expansion tank is installed."*** ~~are~~ is added to the end of section 609.10;

~~(28)~~(37) The words "The minimum size water service allowed is ~~1~~ one inch except to travel trailer or mobile home sites which shall be not less than ~~3/4~~ three-fourths ~~inch~~ of an inch." are added to section 610.1;

~~(29)~~(38) The words "Plastic pipe and fittings installed underground outside of buildings may be SDR 35 ASTM 3034 or heavier" are added to section 701.2 and the words "and Chapter 14 Firestop Protection" are removed from section 701.2(2);

~~(30)~~(39) The words "tubular PVC or tubular ABS" ~~are~~ are added after "(0.8 mm)" in section 701.4;

~~(31)~~(40) The ~~words~~ sentence "Not to exceed one-third of the total permitted length of a vent shall be permitted to be installed in a horizontal position." ~~are~~ is removed from "Note 6" under Table 703.2;

(41) The words "except commercial dishwashing machines shall be provided with indirect wastes." are added to the end of the first sentence to section 704.3;

~~(32)~~(42) The words "-primer purple in color" are changed to "primer approved" in section ~~705.5.2~~ 705.6.2;

~~(33)~~(43) The~~ words~~ sentence "Exception:~~ 1/4~~ one-quarter bends may be used on individual fixture drains for horizontal to vertical, horizontal to horizontal, and vertical to horizontal changes in direction."~~ are~~ is added to the end of section 706.1;

~~(34)~~(44) The~~ words~~ sentence "(5) Where the piping is concealed, a fixture trap or a fixture with integral trap, readily removable without disturbing concealed roughing work, shall be accepted as a cleanout equivalent."~~ are~~ is added to section 707.4~~(4)~~;

~~(35)~~(45) The words "and gate valve" are removed from section 710.3(2);

~~(36)~~(46) The~~ words~~ sentences "Where the Administrative Authority, due to practical difficulties or hardships, finds that a water or air test cannot be performed, a smoke or peppermint test shall be substituted in lieu thereof. A smoke test shall be made by introducing into the entire system a pungent, thick smoke proceeded by one or more smoke machines. When the smoke appears at stack openings on the roof, they shall be closed and at a pressure equivalent to a one-inch water column shall be developed and maintained for the period of the inspection. A peppermint test shall be conducted by the introduction of two ounces of oil of peppermint into the roof terminal of every line or stack to be tested. The oil of peppermint shall be followed at once by~~ 10~~ ten quarts of hot water whereupon all roof vent terminals shall be sealed. A positive test~~ which~~ that reveals leakage shall be the detection of the odor of peppermint at any trap or other point on the system. Oil of peppermint of persons whose person or clothes have come in contact with oil of peppermint shall be excluded from the test area." are added to the end of section 712.1;

(a) The words "except plastic pipe shall not be tested with air" are removed from section 712.1;

~~(37)~~(47) The words "After the plumbing fixtures have been set and their traps filled with water, they shall be submitted to a final test" are removed from section 712.1;

~~(38)~~(48) "5 feet (1524 mm)" is changed to "~~15~~ Fifteen feet" in section 801.4;

~~(39)~~(49) The words "Drip pans shall be installed under storage-type water heaters to prevent tank leakage from causing property damage. Exceptions:

1. The lowest level of buildings, provided that the floor is concrete or other material that will not be damaged or deteriorated by water leakage from the tank;

2. Crawl spaces;

3. Spaces having floor drainage that will collect leakage from the tank; and

4. Locations where tank leakage will not damage the building or its contents.

~~-~~Drip pans shall be watertight and constructed of corrosive-resistant materials. Metallic pans shall be ~~24~~ twenty-four gauge minimum. Non-metallic pans shall be .0625 inches minimum thickness. Pans shall be not less than ~~1 1/2~~ one and one-half inches deep and shall be of sufficient size to hold the heater without interfering with drain valves, burners, controls, and any required access. High impact plastic pans shall be permitted under gas-fired water heaters where the heater is listed for zero clearance for combustible floors and the application is recommended by the pan manufacturer. Drip pans shall have drain outlets not less than ~~1~~ one inch size, with indirect drain pipes extending to an approved point of discharge" are added to the end of section 801.7;

~~(40)~~(50) The ~~words~~ sentences "No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved

dishwasher airgap fitting on the discharge side of the dishwashing machine. Listed dishwasher air gap fittings shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher." are changed to "The discharge from a residential kitchen sink and dishwasher may discharge through a single ~~1½~~ one and one-half inch trap. The discharge line from the dishwasher shall be not less than ~~½~~ one-half inch nominal size and shall either be looped up and securely fastened to the underside of the counter or be connected to a deck-mounted dishwasher air gap fitting. The discharge shall then be connected to a wye fitting between the sink waste outlet and the trap inlet or to the disposal." in section 807.3;

~~(41)~~(51) The words "ABS and PVC DWV piping installations shall be in accordance with Chapter 14 "Firestop Protection. Except"" are removed from section 903.1(2);

~~(42)~~ (52) The words "Where frost or snow closure is likely to occur in locations having minimum design temperature below 0˚F (-17.8˚C), vent terminals shall be a minimum of ~~two (2) inches (51mm)~~ 3 inches (76 mm) in diameter but in no event smaller than the required vent pipe. The change in diameter shall be made inside the building not less than 1 foot (305mm) below the roof in an insulated space and terminate not less than 10 inches (254mm) above the roof, or in accordance with the Authority Having Jurisdiction" are changed to "Each vent extension through a roof shall be at least ~~3~~ three inches in diameter except kitchen sink vents in single-family dwellings, which shall be at least ~~2~~ two inches in diameter. The change in diameter shall be made inside the building at least ~~1~~ one foot below the roof with an approved fitting" in section 906.7;

(53) The sentence "And all horizontal wet vents shall have a minimum grade of ¼ inch per foot until it is vertical." shall be added to the end of section 908.2.

(54) The word “shall” is changed to “may” and the sentence "If a wet vent is upstream of toilet, then a minimum three-inch pipe shall be used as the wet vent section." is added to the end of section 908.2.2.

(55) The sentence "All wet vents shall have a minimum grade of a quarter inch per foot and shall be permitted to have a greater slope of center line up to vertical." is added at the end of section 908.2.4;

~~(43)~~(56) The words "Alternate island sink installations require a minimum of a ~~3~~ three inch diameter drain undiminished in size ~~which~~ that shall rise up through the sink cabinet and be capped off as high as possible. The vent shall connect no further than ~~15~~ fifteen feet from the vertical section of the drain and shall be a minimum of ~~1½~~ one and one-half inch in diameter. A ~~3x3x1½~~ three by three by one and one-half inch sanitary tee is required for connection to the trap" are added ~~to~~ as an additional paragraph to the end of section 909.1;

~~(44)~~ (57) The ~~words~~ sentences "Exception: In single family dwellings the maximum length for a floor drain connected to a uniformly sized building drain vented on both the upstream and downstream side of the connection to the floor drain is ~~15~~ fifteen feet. The minimum trap seal shall be ~~4~~ four inches." are added to the end of section 418.6 and section 910.1;

~~(45)~~ (58) The words "17 B&S Gauge" is changed to "20 B&S Gauge" and "(0.045 inch) (1.143)" are deleted from section 1003.1;

~~(46)~~ (59) The ~~words~~ sentence "Slip joint extensions with ~~45~~ forty-five degree slip joint offsets are allowed." ~~are~~ is added to the end of section 1003.2;

~~(47)~~ (60) The words "The trap shall be the same size as the trap arm to which it is connected" are removed from section 1003.3;

~~(48)~~ (61) The ~~words~~ sentence "Floor drains in garages serving dwelling units for parking purposes that are connected to a building sanitary sewer shall have a means of collecting sediment and shall be provided with a water trap seal." ~~Are~~ is added to the end of section 1016.3;

~~(49)~~ (62) The ~~words~~ sentence "ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Chapter 17 and Chapter 14 "Firestop Protection." ~~are~~ is removed from section 1101.4;

~~(50) The number "20" is removed from Table C304.2 in Appendix "C".~~

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 14 SDR 29, effective September 3, 1987; 15 SDR 136, effective March 15, 1989; 16 SDR 88, effective November 12, 1989; 17 SDR 75, effective December 3, 1990; 19 SDR 36, effective September 17, 1992; 20 SDR 29, effective September 1, 1993; 21 SDR 40, effective September 4, 1994; 23 SDR 83, effective November 28, 1996; 24 SDR 19, effective August 21, 1997; 26 SDR 33, effective September 12, 1999; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 31 SDR 35, effective September 23, 2004; 35 SDR 67, effective October 1, 2008; 37 SDR 48, effective September 21, 2010; 38 SDR 40, effective September 20, 2011; 41 SDR 219, effective July 2, 2015; 43 SDR 31, effective ~~Septemer~~ September 12, 2016; 45 SDR 91, effective January 9, 2019; 46 SDR 29, effective September 5, 2019.

General Authority: SDCL 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, pages numbered numerically, International Association of Plumbing and Mechanical Officials. Copies may be obtained from

the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

CHAPTER 20:54:19

WATER CONDITIONING DEFINITIONS

20:54:19:01. Definitions. Terms defined in SDCL 36-25-1 and Chapter 2 of the Uniform Plumbing Code, ~~2015~~ 2024 edition, have the same meaning when used in chapters 20:54:19 to 20:54:28, inclusive. The following terms have the meaning indicated when used in these chapters:

(1) "Administrative authority," the individual official, board, department, or agency established and authorized by a state, county, city, or other political subdivision created by law to administer and enforce the provisions of the state plumbing code as adopted or amended and the State Plumbing Commission;

(2) "Acid neutralizer," see neutralizer;

(3) "Absorption," the physical, electrostatic, surface attraction of an absorbent for molecules of a gas, liquid, dissolved or suspended substance;

(4) "Backwash filter," any filter requiring reverse flow for maintenance;

(5) "Brine," a solution of sodium chloride or salt used for regenerating water softeners;

(6) "Bypass," a connection or a valve system that allows raw water to be supplied while the water conditioner is being cleaned or serviced or the media changed;

(7) "Calcium," one of the principal elements making up the earth's crust, the compounds of which when dissolved in water make the water hard. The presence of calcium in water is a factor contributing to the formation of scale and insoluble soap curds ~~which~~ that are means of clearly identifying hard water;

(8) "Calcium carbonate equivalent," a term used for expressing all forms of hardness and other salts in the same terms;

(9) "Capacity," expressed in total gallons of water treated, meeting the manufacturer's specifications and produced in a defined period of time;

(10) "Cartridge," removable preformed or prepackaged component containing the filter media;

(11) "Cartridge filter," a filter using a cartridge or cartridges;

(12) "Cation exchange," in water softening, principally the exchange of calcium and magnesium ions in water for sodium ions on an insoluble ion exchange material;

(13) "Color throw," the imparting of color by any part of a water softener to the effluent during any state of the operating cycle;

~~(13-A) "Commission," the State Plumbing Commission;~~

(14) "Corrosion," the attack by water on any part of a water system, causing the wasting away of metal parts;

(15) "Cubic feet," the volumetric unit used for measuring ion exchange materials, measured on an in-place, back-washed, drained, and settled condition;

(16) "Disinfection," the process of destroying harmful microorganisms, done in accordance with § 609.9 of the Uniform Plumbing Code, ~~2015~~ 2024 edition;

(17) "Distributors," devices to distribute or collect the water;

(18) "Drain line," a line used to carry backwash water, spent regenerant, and rinse water to the waste system;

(19) "Effluent," the water or solution ~~which~~ that emerges from a water conditioner during any phase of the operating cycle;

(20) "Filter," a device installed as part of the water system through which water flows for the removal of turbidity, taste, color, or odor;

(21) "Filter area," the effective cross sectional area applicable to the surface filter media only, usually expressed in square feet;

(22) "Filter medium or filter media," see medium;

(23) "Flow rate," the quantity of water or regenerant flowing, or both, measured in gallons per minute;

(24) "Gpg," grains per gallons;

(25) "Grains per gallon," a common basis of reporting water analysis in the United States and Canada in which one grain per United States gallon equals 17.1 milligrams per liter or 17.1 parts per million and one grain per imperial gallon equals 14.3 milligrams per liter or 14.3 parts per million. One grain is 0.007 or 0.064 grams;

(26) "Gpm," gallons per minute;

(27) "Hardness," dissolved calcium and magnesium salts in water, usually expressed in grains per gallon as calcium carbonate equivalent;

(28) "Hardness leakage," calcium and magnesium present in water after passing through a water softener;

(29) "Hard water," water containing calcium and magnesium salts in concentration of one grain per gallon or more as calcium carbonate equivalent;

(30) "Installation," the piping or valving by which water conditioners are connected into the water supply system, including a drain line;

(31) "Ion exchange," a process whereby ions in solution are interchanged by a reactive material. See ion exchanger;

(32) "Ion exchanger," an insoluble reactive material capable of interchanging ions combined with the material for ions in the solution;

(33) "Iron," an element often present in ground waters in a soluble form, such as ferrous bicarbonate, in quantities usually ranging from zero to ten parts per million;

(34) "Magnesium," one of the elements making up the earth's crust, the compounds of which when dissolved in water make the water hard;

(35) "Manganese greensand," a processed, natural alumino silicate, converted to the oxidized manganese form, which is a granular material, generally used for the removal of iron or sulphides, in oxidizing filters;

(36) "Manganese zeolite," a processed natural or synthetic alumino silicate, converted to the oxidized manganese form. See manganese greensand;

(37) "Media," plural of medium;

(38) "Medium," the active material in a filter;

(39) "Micron," a linear measure of size 0.001 of a millimeter, denoted by the Greek letter symbol μ, used in filtration work to define particle size, referring to the diameter or the largest dimension of the particle; also used to measure the size of pores, openings, or wire mesh;

(40) "Neutralizer" or "neutralizing filter," a type of filter mainly used to neutralize acidity or reduce free carbon dioxide in water;

(41) "Operating pressure," the pressure range within which equipment properly functions;

(42) "Ppm," parts per million;

(43) "Psi," pounds per square inch;

(44) "Parts per million," a common basis of reporting water analysis in the United States and Canada in which one part per million or ppm equals one pound per million pounds of water; 17.1 ppm equals one grain per United States gallon; 14.3 ppm equals one grain per imperial gallon. The metric equivalent is milligrams per liter;

(45) "pH value," a number denoting alkalinity or acidity. Numbers below seven indicate acidity, which increases as the number becomes smaller. Numbers above seven indicate alkalinity, which increases as the number becomes larger. The pH scale runs from zero to fourteen. Seven is the neutral point;

(46) "Precoat," the application of a loose filter medium to a supporting membrane;

(47) "Pressure drop or pressure loss," a differential in pressure during flow due to frictional resistance in the system. It may be expressed in pounds per square inch or psi of feet of head of water;

(48) "Rated service flow," the manufacturer's specified maximum flow at which the conditioner will deliver water for a minimum period of ~~10~~ ten minutes at a pressure drop not to exceed ~~15~~ fifteen psi;

(49) "Rated softening capacity," softener capacity rating based on grains of hardness removed, as calcium carbonate, while producing soft water between successive regenerations, related to pounds of salt required for each regeneration;

(50) "Raw water," water at the inlet of the water treating unit;

(51) "Regeneration," in general, the backwash, brine, and fresh water rinse steps necessary to prepare the exchanger bed for service after exhaustion. Specifically, the "brine" step in which a sodium chloride solution is passed through the exchanger bed and the sodium ions displace the hardness ions from the exchanger to permit the hardness to be rinsed to drain. Also includes maintenance steps;

(52) "Resin," the term used to designate a synthetic organic ion exchange material such as high capacity cation exchange resin widely used in water softeners;

(53) "Rinse," that part of the cycle of a water conditioner operation where water is introduced to remove spent backwash water or regenerant, or both, prior to placing the conditioner into service;

(54) "Salt," high purity sodium chloride in a granular, rock, or briquetted form used for regenerating a water softener;

(55) "Service run," that part of the operating cycle of a water conditioner in which the raw water supply is passed through a conditioner, thereby producing quality water;

(56) "Shielded" or "insulated," the separation of metallic parts by a nonconductor;

(57) "Soft water," water containing less than one grain per gallon dissolved calcium and magnesium salts, as calcium carbonate equivalent;

(58) "Suspended matter," all undissolved material in water;

(59) "Turbidity," the term used to define any undissolved materials in water, such as finely divided particles of sand or clay;

(60) "U," see micron;

(61) "Upflow," a term applied to designate the upward direction in which water flows through the ion exchange during any phase of the operating cycle;

(62) "Water softener," a device installed as part of a water system ~~which~~ that produces soft water by cation exchange removing calcium and magnesium or hardness from flowing water, replacing it with sodium, thereby requiring periodic regeneration with sodium chloride or salt;

(63) "Zeolite," a processed natural or synthetic alumino silicate. See also manganese greensand, manganese zeolite.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Cross-Reference: Definitions, ~~§ 20:53:04:01~~ 20:53:01:01.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:20:11. Minimum standards. All water conditioning treatment equipment shall meet the Mandatory Referenced Standards, Table 1701.1 of the Uniform Plumbing Code, ~~2015~~ 2024 edition.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:21:01. Materials used in installation. Materials used in installation of water conditioning and treatment equipment must conform to Section 604.0, Materials, of the Uniform Plumbing Code, ~~2015~~ 2024 edition.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, the ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:21:03. Approved materials. Water conditioning and treatment equipment contractors will be bound by any changes made by the administrative authority pertaining to materials used to install water conditioning and treatment equipment. All materials used in installing water conditioning and treatment equipment must conform to Section 604.0, Materials, of the Uniform Plumbing Code, ~~2015~~ 2024 edition.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, California 91761. ~~Cost $143.~~

20:54:22:02. Types of joints. Types of joints shall conform to the following standards of the 2024 Uniform Plumbing Code:

(1) Threaded joints or screwed joints must conform to section 605.1.5 ~~of the Uniform Plumbing Code, 2015 edition~~;

(2) Soldered or sweat joints for tubing must conform to section 605.1.4 ~~of the Uniform Plumbing Code, 2015 edition~~;

(3) Flared joints for soft-copper water tubing must conform to section 605.1.2 ~~of the Uniform Plumbing Code, 2015 edition~~;

(4) ABS and PVC pipe shall be joined by either threaded or solvent weld type fittings or a flexible neoprene compression gasket approved by the administrative authority. No threaded joint may be made on schedule 40 pipe. Polyethylene pipe shall be joined either by serrated insert and clamp type fittings with all clamping bands and tightening screws made of stainless steel or flared with compression fitting.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association

of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:22:03. Use of joints. Joints in copper tubing above ground shall be made either by ~~the use of~~ using brass or wrought copper water fittings sweated or soldered together or by means of compression fittings as provided in section 605.0 of the Uniform Plumbing Code, ~~2015~~ 2024 edition. Joints in copper tubing under ground shall be made with approved compression fittings as provided in section 605.7.1.1 of the Uniform Plumbing Code, ~~2015~~ 2024 edition.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:25:02. Approval of devices. Before any device for the prevention of backflow or backsiphonage is installed, it must have first been certified as meeting the requirements of section 603.2, Approval of Devices or Assemblies, of the Uniform Plumbing Code, ~~2015~~ 2024 edition. Devices installed in a potable water supply for protection against backflow must be maintained in good working condition by the person or persons in control of the devices. The administrative authority having jurisdiction may inspect such devices and, if they are found to be ineffective or inoperative, shall require their replacement.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:25:03. Backflow. The water-distributing system must be protected against backflow. Each water outlet must be protected from backflow, preferably by having the outlet end from which the water flows spaced a distance above the flood-level rim of the receptacle into which the water flows that is sufficient to provide a minimum air gap as required in Table 603.3.1 of the Uniform Plumbing Code, ~~2015~~ 2024 edition. If it is not possible to provide a minimum air gap, the water outlet must be equipped with an accessible backflow preventer complying with section 603.2 of the Uniform Plumbing Code, ~~2015~~ 2024 edition, installed on the discharge side of the manual control valve.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~

20:54:26:04. Procedure for sizing water conditioning and treatment equipment for domestic or commercial application. All pipe and fittings used for installation of water conditioning and treatment equipment for domestic and commercial applications must conform to section 604.0 of the Uniform Plumbing Code, ~~2015~~ 2024 edition. Water conditioning and treatment equipment must be provided with full flow control/bypass valves to ensure minimum pressure loss.

Source: SL 1975, ch 16, § 1; 12 SDR 91, effective December 2, 1985; 12 SDR 151, 12 SDR 155, effective July 1, 1986; 14 SDR 29, effective September 3, 1987; 23 SDR 83, effective November 28, 1996; 29 SDR 52, effective October 20, 2002; 30 SDR 99, effective December 22, 2003; 38 SDR 40, effective September 20, 2011; 43 SDR 31, effective September 12, 2016.

General Authority: SDCL 36-25-14, 36-25-15.

Law Implemented: SDCL 36-25-15.

Reference: Uniform Plumbing Code, ~~2015~~ 2024 edition, International Association of Plumbing and Mechanical Officials. Copies may be obtained from the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761. ~~Cost $143.~~