

2021 Code Changes

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NSPC & ICC

CODE

CHANGE Update

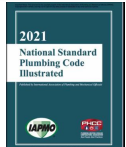


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NSPC & ICC CODE CHANGE Update

2021 and 2017 Codes

NSPC, ICC and ICC ANSI A117.1



2021 National Standard Plumbing Code - NJ Edition)

<https://epubs.iapmo.org/NSPC/NJ2021/>

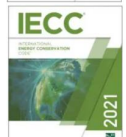
NSPC Erratas https://www.iapmo.org/media/23665/2021_nspc_errata_1st_print.pdf

https://www.iapmo.org/media/30588/2021_nspc_errata_newjersey_1st_print.pdf



2021 International Residential Code (2021 IRC - NJ Edition)

<https://codes.iccsafe.org/content/NJRC2021P1> **ICC Erratas** <https://www.iccsafe.org/errata-central/>



2021 International Energy Conservation Code (2021 IECC – Non-NJ EDITION)

[2021 International Energy Conservation Code \(IECC\) | ICC Digital Codes \(iccsafe.org\)](#)



2017 ICC ANSI A117.1 (Barrier Free SubCode; Non-NJ Edition)

[2017 ICC A117.1 Accessible and Usable Buildings and Facilities | ICC Digital Codes \(iccsafe.org\)](#)



2021 International Fuel Gas Code (2021 IFGC - Non-NJ Edition)

[2021 International Fuel Gas Code \(IFGC\) | ICC Digital Codes \(iccsafe.org\)](#)



2021 International Mechanical Code (2021 IMC - Non-NJ Edition)

[2021 International Mechanical Code \(IMC\) | ICC Digital Codes \(iccsafe.org\)](#)



2021 International Swimming Pool and Spa Code (2021 IFGC - Non-NJ Edition)

[2021 International Swimming Pool and Spa Code \(ISPSC\) | ICC Digital Codes \(iccsafe.org\)](#)

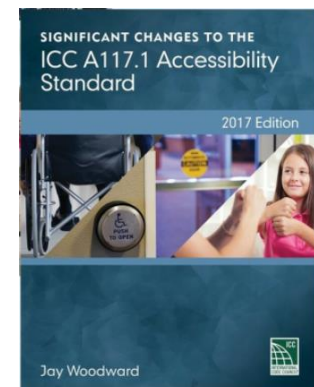
2021 Significant Changes to the I-Codes and 2017 ICC A117.1

[Significant Changes Building Codes - ICC Digital Codes \(iccsafe.org\)](#)



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NJDCA UCC Code Adoptions with administrative changes **HAVE BEEN APPROVED!!!**

- https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html (Rule Proposals and Notice of Adoption)
- [Microsoft Word - \(F\) PRN 2022-052 \(DCA 5 23-3.14\) \(nj.gov\)](#) (Initial Proposal w/ Summary of Changes)
- [PRN 2022_051 NSPC 2021.pdf \(nj.gov\)](#) (2021 NSPC initial proposal w/ changes identified)

Posted in NJ Register	Subject	Submit Comments by:	Adoption Date*
4/18/2022	Uniform Construction Code - Building, Electrical, Fire Protection, Energy, Mechanical, One- and Two-Family Dwelling and Fuel Gas Subcodes Proposed Amendments: N.J.A.C. 5:23-3.14, 3.16, 3.17, 3.18, 3.20, 3.21, and 3.22	17-Jun-22	Sep 06, 2022 NSC
4/18/2022	Uniform Construction Code - Plumbing Subcode (New 2021 Admin Changes to 2018 Version) Proposed Amendment: N.J.A.C. 5:23-3.15	17-Jun-22	19-Sep-22

*** By clicking the adoption dates, it takes you to the “Summary of Public Comments and Agency Responses” and includes additional changes/clarifications from the initial proposals. Refer to the above web links for the initial proposals made to the subcodes. The link in the “Subject” section takes you to the initial proposal documents.

https://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_adoptions/2021_Icode_2020_NEC_adopt.pdf **(I-Codes)**

https://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_adoptions/nspc_adopt.pdf **(NSPC – Comments only – Approved as proposed)**

All “double lines” in the column of the code books reflect NJ UCC Administrative changes.

Single lines in the column of the code books reflect changes from the previous edition.

Arrows, greater than symbol, etc. also have significant meaning as explained in the initial code pages of the code book, I-Codes and NSPC.

The ICC – NJ Edition (electronic Version from the web site) includes “**BLUE text**” to signify code changes from the previous edition and “**RED text**” to signify NJUCC Administrative changes to the 2021 I-Code.

https://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_proposals/PRN_2022_051_NSPC_2021.pdf

This web link reflects 2021 NSPC UCC Administrative changes to those adopted and incorporated into the 2018 NSPC – NJ Edition

One significant change is the deletion of 2021 NSPC section **12.10 WET VENTING** and administratively adopting/inserting the **2015 WET VENTING** version (entire text included) [that begins on the next slide](#)

Miscellaneous “NEW” NJUCC Administrative changes to the 2021 NSPC:

- In Note 1 to Table 7.21.1, Minimum Number of Required Plumbing Fixtures, delete the second [and third] sentence[s].
- Section 7.23, Safety Features for Spas and Hot Tubs, shall be deleted and Section 7.23, Safety Features for Spas and Hot Tubs, shall be inserted as follows: "7.23 Safety Features for Swimming Pools, Spas, and Hot Tubs. 7.23.1, Suction Entrapment Avoidance. Suction outlets shall be designed and installed in accordance with [ANSI/APSP/ICC-7] **ANSI/PHTA/ICC-7.**"
- **Appendix G, entitled “We-Stand Excerpts,” shall not be adopted as part of the plumbing subcode. Appendix G may be used as a reference standard for special design plumbing systems in accordance with Appendix E.**
- **Appendix L, entitled “Tiny Houses,” shall be adopted as part of this subcode.**

12.10 WET VENTING (Amended version added/inserted into the 2021 NSPC – NJ Edition)

Section 12.10, Wet Venting, shall be deleted and the text of the 2015 National Plumbing Code shall be inserted:

12.10.1 Single Bathroom Groups

- a. An individually vented lavatory in a single bathroom group shall be permitted to serve as a wet vent for the water closet, the bathtub, or shower stall, the water closet and bathtub/shower if all of the following conditions are met.
 1. The wet vent is 1-1/2" minimum pipe size if the water closet bend is 3" size, or it shall be 2" minimum pipe size if the water closet bend is 4" pipe size.
 2. A horizontal branch drain serving both the lavatory and the bathtub or shower stall is 2" minimum pipe size.
 3. The length of the trap arm for the bathtub or shower stall is within the limits of Table 12.8.1. If not, the bathtub or shower stall shall be individually vented.
 4. The distance from the outlet of the water closet to the connection of the wet vent is within the limits established by Section 12.8.4. Otherwise, the water closet shall be individually vented.
 5. A horizontal branch serving the lavatory and the bathtub or shower stall shall connect to the stack at the same level as the water closet, or it may connect to the water closet bend, or the lavatory and bathtub or shower stall may individually connect to the water closet bend.
 6. When the bathroom group is the topmost load on a stack, a horizontal branch serving the lavatory and the bathtub or shower stall may connect to the stack below the water closet bend, or the lavatory and the bathtub, or shower stall may individually connect to the stack below the water closet bend.

REFER TO THE ACTUAL CODE BOOK (2021 NSPC – NJ Edition) for details and specific drawing for "wet vent" installations and applications.

12.10 WET VENTING (Amended version added/inserted into the 2021 NSPC – NJ Edition)

Section 12.10, Wet Venting, shall be deleted and the text of the 2015 National Plumbing Code shall be inserted:

12.10.2 Double Bathtubs and Lavatories

Two lavatories and two bathtubs or showers back-to-back may be installed on the same horizontal branch with a common vent for the lavatories and with no back vent for the bathtubs or shower stalls provided the wet vent is 2" in size and the lengths of the tub/shower drains conform to Table 12.8.1.

12.10.3 Multi-Story Bathroom Groups

- a. On the lower floors of a stack, the waste pipe from one or two lavatories may be used as a wet vent for one or two bathtubs or showers as provided in Section 12.10.2.
- b. Each water closet below the top floor shall be individually back vented.

EXCEPTION: The water closets in bathroom groups shall not be required to be back vented if the following conditions are met:

- (1) The 2" waste serving the tubs/showers and lavatories connect directly into the water closet bend with a 45° wye tap in the direction of flow; or
- (2) A special stack fitting is used that consists of a 3" or 4" closet opening and two side inlets each 2" in size and the inverts of which are above the center, and below the top of the water closet opening; and one of the 2" inlets is connected to the tub/shower drains, and the other is connected to the waste pipe from a maximum of two lavatories that are vented to a vent stack or stack vent; or
- (3) In lieu of the special stack fitting of Section 12.10.3b(2) above, 4" closet bends with two 2" wye taps may be used.

REFER TO THE ACTUAL CODE BOOK (2021 NSPC – NJ Edition) for details and specific drawing for "wet vent" installations and applications.

12.10 WET VENTING (Amended version added/inserted into the 2021 NSPC – NJ Edition)

Section 12.10, Wet Venting, shall be deleted and the text of the 2015 National Plumbing Code shall be inserted:

12.10.4 Bathtubs and Water Closets

- a. An individually vented bathtub in a single bathroom group shall be permitted to serve as a wet vent for the water closet if all of the following conditions are met:
 1. The wet vent is 2" minimum size. 11
 2. The distance from the outlet of the water closet to the connection of the wet vent is within the limits established by Section 12.8.4. Otherwise, the water closet shall be individually vented.

12.10.5 Reserved

12.10.6 Floor Drains and Floor Sinks

- a. A lavatory or sink shall be permitted to serve as a wet vent for a floor drain or floor sink if all of the following conditions are met:
 1. The wet vent shall be not less than 1-1/2" size for a 1 DFU lavatory or 2" for 2 DFU sink.
 2. The wet vent shall be larger than 1/2 the size of the drain for the floor drain or floor sink.
 3. The distance from the outlet of the floor drain or floor sink to the connection of the wet vent shall be within the limits established by Table 12.8.1.

REFER TO THE ACTUAL CODE BOOK (2021 NSPC – NJ Edition) for details and specific drawing for "wet vent" installations and applications.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

ADMINISTRATION – (DELETED)

CHAPTER 1 - DEFINITIONS (Refer to double lines in the column for various definitions, including tie-in with UCC sections, as applicable. AHJ definition added along with definition references in some cases. Hot Water definition added to incorporate the 120F to 140F range as has occurred in previous NJ Editions. Modifications and additional text added to “Approved”, “Authority Having Jurisdiction”, “Building Classification”, “Tempered Water”. Deleted definitions are “Adopting Agency, and “Nuisance”

Chapter 2 – General Regulations

2.5 HEALTH AND SAFETY (DELETED)

2.9.3 From Weakened Structure

Any structural member weakened or impaired by cutting, notching, or otherwise, shall be reinforced, repaired, or replaced, so as to be left in a safe structural condition in accordance with the requirements of the applicable *building subcode*.

2.11 MATERIALS EXPOSED WITHIN PLENUMS

All piping materials exposed within air plenums shall comply with the requirements of the applicable construction *subcodes* for air plenums.

2.12 SLEEVES FOR PIPING

e. All penetrations of construction required to have a fire resistance rating shall be protected in accordance with the applicable building *subcode*.

2.16 FREEZING OR OVERHEATING *(Text and depth of coverage added for exterior piping, combination domestic/fire water service piping, etc.)*

2.19.1 Availability of Public Water and Sewer *(Text added “reasonable” and deleted line and the words “feet of any property line of the premises”.)*

2.19.2 Private Systems *(Text added to reference NJDEP)*

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

2.19.3 Common Systems (new section added)

- a. Common water services shall be permitted to serve attached single-family dwellings in groups of three or more where the common water service is located within property subject to an association easement or on common property and there is a homeowners' association or other owner entity responsible for maintenance and upkeep.
- b. Common building sewers shall be permitted to serve attached single-family dwellings in groups of three or more where the common sewer is located within property subject to an association easement or on common property and there is a homeowners' association or other owner entity responsible for maintenance and upkeep.

2.24 TOILET FACILITIES FOR CONSTRUCTION WORKERS (DELETED)

2.26 REQUIREMENTS FOR ELEVATORS

2.26.1 General

b. DELETED

d. Where elevators have *firefighter emergency operation*, drainage shall be provided for their elevator pit.

2.26.2 Where Elevator Pit Drainage is Provided

b. *The* location shall be approved by the Authority Having Jurisdiction and be marked "ELEVATOR PIT DISCHARGE". *(text deleted before "The")*

c. DELETED

d. The controls for sump pumps serving elevators shall include automatic oil sensing with pump cutoff. *(text deleted to this code statement.)*

g. Where elevators have *firefighter emergency operation* override, the design flow capacity of the required drains or pumps shall be not less than 3000 gph (50 gpm) per elevator..

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

3.1 MATERIALS

3.1.1 Standards (*References to NJAC 5:23-3.7 added*)

3.1.2 General Requirements (*References to NJAC 5:23-3.7 added*)

3.1.3 Standards Applicable to Plumbing Materials (*References to NJAC 5:23-3.7 added*)

3.3.11 Septic Tanks (DELETED)

3.4.2.1 Combination Domestic/Fire Water Service (new Section added)

Water service piping for combination domestic/fire water services shall be of materials listed in Table 3.4 and shall be water pressure rated not less than 200 psig at 73° F. Joint restraints shall comply with Section 6.3, entitled “Joint Restraint for Fire Mains” per NFPA 13.

EXCEPTION: Limited area sprinkler systems installed in accordance with Section 903.3.8 of the building subcode, shall be water pressure rated not less than 160 psig at 73° F.

3.12 ALTERNATE MATERIALS AND METHODS (DELETED)

Table 3.1.3 - Part XI INSTALLATION PROCEDURES AND PRACTICES

11. Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins [ANSI/APSN/ICC-7-2018](#)

5.3.2 Trap Seals

(2) Special conditions such as accessible fixtures, a deeper seal may be required by the Authority Having Jurisdiction *in accordance with N.J.A.C. 5:23-3.3*. See **Figure 5.3.2**

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

5.3.4 Building Traps *(Reference made to NJAC 5:23 – 3.3)*

5.4.6 Building Drain and Building Sewer Junctions and the Property Line

b. Cleanouts shall be placed in the building sanitary sewer and the building storm sewer at the property line and brought to the surface. See Figures 5.4.6-A and 5.4.6-B *(“in accordance w/ the AHJ” deleted from original code section.)*

5.4.10 Manholes for Large Pipes

d. DELETED

CHAPTER 6 - LIQUID WASTE TREATMENT EQUIPMENT 3.1 MATERIALS

6.1.1 Where Required

.....*The determination of necessity shall be made by the plumbing subcode official in accordance with N.J.A.C. 5:23-3.3. See Figure 6.1.1*

6.1.4 Approval

6.1.4.1 General

The type, size, capacity, design, arrangement, construction, and installation of liquid waste treatment devices shall be as *required by this Code. (“and the AHJ” deleted from original code section.)*

6.4 SAND INTERCEPTORS

6.4.4 Alternate Design

Alternate designs for construction of, or baffling in, sand interceptors shall comply with the intent of this Code and be submitted to the Authority Having Jurisdiction for approval *in accordance with N.J.A.C. 5:23-3.3.*

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

7.2 FIXTURES FOR ACCESSIBLE USE

- a. *Plumbing fixtures for accessible use and their installation shall conform to the requirements of Chapter 11 of the building subcode (N.J.A.C. 5:23-3.14).*

7.5 URINALS

7.5.3 Surrounding Surfaces

Urinals shall not be installed where wall and floor surfaces are not waterproof and do not have a smooth, readily cleanable, non-absorbent surface. *Refer to the International Building Code, Section 1209.2.2.*

7.11 SINKS

7.11.4 Service Sinks and Mop Receptors

- b. Service sinks and mop receptors shall not be installed where walls and floors are not waterproof and do not have a smooth, readily cleanable surface. *Refer to the International Building Code, Section 1209.2.2.*

7.18 SPECIAL INSTALLATIONS

7.18.2 Approval

Special installations requiring water supply and/or drainage shall be submitted for approval. (*“to the AHJ” deleted from original code section.*)

7.21 MINIMUM NUMBER OF REQUIRED FIXTURES

7.21.2 Occupant Load

- b. Where the occupant load is not established and is based on the egress requirements of a *building subcode*, the number of occupants for plumbing purposes shall be permitted to be reduced to two-thirds of that for fire or life safety purposes.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

7.21 MINIMUM NUMBER OF REQUIRED FIXTURES

7.21.9 Family and Assisted-Use Toilet Rooms

- a. Accessible family or assisted-use toilet rooms containing one water closet and one lavatory shall be provided *as* required by the *building subcode*.

7.23 SAFETY FEATURES FOR SWIMMING POOLS, SPAS AND HOT TUBS

7.23.1 Suction Entrapment Avoidance

Suction outlets shall be designed and installed in accordance with ANSI/PHTA/ICC-7.

7.23.2 through 7.23.4 (DELETED)

Table 7.21.1 - MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES - Page 4

R-3/R-5: One- and two-family dwellings

1 water closet per unit, 1 lavatory per unit, 1 bath or shower per unit, 1 kitchen sink per unit and provisions for 1 clothes washer per unit

Notes for Table 7.21.1 (where indicated in the Table):

- (1) Plumbing fixtures shall be provided in numbers not less than those shown in this Table for the type of building occupancy (7.21.1). *(2nd sentence to Note 1 deleted from original code section.)*

8.9 SEISMIC SUPPORTS FOR PIPING

Where earthquake loads are applicable in accordance with the adopted building code, plumbing piping supports shall be designed and installed for the seismic forces in accordance with the adopted *building subcode*.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

10.4 PROTECTION OF POTABLE WATER SUPPLY

10.4.2 Interconnections

Interconnections between two or more public water supplies shall be permitted only *in accordance with the rules of the New Jersey Department of Environmental Protection at N.J.A.C. 7:10-10.*

10.4.3 Cross Connection Control

Potable water supplies shall be protected in accordance with the provisions of this code and where applicable the Safe Drinking Water Regulations (N.J.A.C. 7:10). The requirements of this code shall establish requirements for individual outlet protection. The requirements of the Safe Drinking Water Act shall establish the requirements for containment. See Figures 10.4.3-A and 10.4.3-B

10.4.4 Private Supplies

b. Cross connection between a private potable water supply and a public potable water supply shall not be made unless specifically approved by the Authority Having Jurisdiction *in accordance with N.J.A.C. 7:10-10.2(e).*

10.5 BACKFLOW PREVENTION

10.5.6 Testing and Maintenance of Backflow Prevention Assemblies

e. Testing of assemblies shall be performed by certified individuals. *(text deleted from original code section.)*

10.5.9 Protection from Fire Systems

(4) Where fire protection systems supplied from a potable water system include a fire department connection which is located less than 1,700 feet from a non-potable water source, the water supply shall be protected by one of the following:

(i) Reduced pressure backflow preventer assembly; or (ii) Reduced pressure detector assembly.

2021 NSPC – NJ EDITION

The following sections include NUCC Administrative changes to 2021 NSPC Code sections:

10.8 WATER PRESSURE BOOSTER SYSTEMS

10.8.1 Water Pressure Booster Systems Required

a. When the water pressure in the public water main or individual water supply system is insufficient to supply the potable peak demand flow to plumbing fixtures and other water needs freely and continuously with the minimum pressure and quantities specified in Section 10.14, or elsewhere in this Code, the rate of supply shall be supplemented by one of the following methods:

1. An elevated water tank., 2. A hydropneumatic pressure booster system., 3. A water pressure booster pump. (*text stating “in accordance with good practice” deleted from original code section.*)

10.15 HOT WATER

10.15.1 Hot Water Supply System

In residences and buildings intended for human occupancy, hot water shall be supplied to all plumbing fixtures, appliances, and equipment that require hot water for their use. *Outlet temperature of hot water from lavatory faucets in public use facility restrooms or public toilet rooms shall be provided with a means to limit the maximum temperature to 110 degrees F.*

EXCEPTION: In buildings other than dwelling units, tempered water supply systems shall be permitted to supply fixtures that deliver only tempered water.

10.20 DWELLING UNIT FIRE SPRINKLER SYSTEMS

Section P2904, Dwelling Unit Fire Sprinkler systems, of the one- and two-family dwelling subcode shall be considered part of the plumbing subcode.

12.5 FROST CLOSURE (DELETED)

12.8.2 Provision for Venting Future Fixtures (DELETED)

12.10 WET VENTING (Section 12.10, Wet Venting, shall be deleted and *the text of the 2015 National Plumbing Code shall be inserted:*)

REFER TO THE ACTUAL CODE BOOK (2021 NSPC – NJ Edition) for details and specific drawing for “wet vent” installations and applications.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

13.1.5 Foundation Drains

a. *Foundation drains shall be provided in accordance with the building subcode.*

b., c. and d. (DELETED)

13.1.10 Roof Drainage

13.1.10.1 Primary Roof Drainage

Roof areas of buildings shall be drained by roof drains or scuppers unless gutters and downspouts or other non-plumbing drainage is provided. The location and sizing of roof drains and scuppers shall be coordinated with the structural design and slope of the roof. *Rainfall rates shall be applied so that the applicable rainfall rate for Burlington and Ocean counties and all counties south shall be six inches per hour and for Mercer and Monmouth counties and all counties north, the applicable rainfall rate shall be five inches per hour.*

13.1.10.2 Overflow Roof Drainage

a. *Where parapet walls extend or other construction extends above the roof, creating areas where storm water would become trapped if the primary roof drainage system failed to provide sufficient drainage, an overflow roof drainage system consisting of scuppers, standpipes, or roof drains shall be provided. The capacity of the primary system shall not be considered in the sizing of the overflow system.*

b. Where overflow drainage is provided by means of roof drains or standpipe, the *overflow* system shall be permitted to connect to the primary roof drainage system.

c. Where overflow roof drainage is provided, the overflow level(s) into the *overflow* system shall be established by the amount of ponding that is allowed in the structural design of the roof, including roof deflection. An allowance shall be made to account for the required overflow head of water above the overflow inlets. The elevation of the overflow inlet plus the required overflow head shall not exceed the maximum allowable water level on the roof.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

13.1.10.2 Overflow Roof Drainage (CONTUINED)

d. Scuppers shall be sized as rectangular weirs, using hydraulic principles to determine the required length and resulting overflow head. *(Subsection d. shall be amended as follows: Add Table A.5 after Appendix A. and delete the second and third sentences)*

e. Strainers shall not be required on open standpipes when used for overflow inlets.

f. Where overflow roof drainage is provided by roof drains or standpipes, they shall be permitted to discharge horizontally, similar to scuppers, but below the roof level.

13.8 SIZING FOR CONTINUOUS OR INTERMITTENT FLOWS

Continuous or intermittent flows from a sump pump, air conditioning condensate drain, or other approved discharge into a storm drainage system shall be determined in gallons per minute flow. Such flows shall be added to the stormwater load on the storm drainage system, which shall also be determined on the basis of gallons per minute according to *5 in/hr = 0.052 gpm/sf and 6 in/hr = 0.062 gpm/sf.*

15.6.1 Combination Domestic/Fire Water Service Systems

Piping for combination domestic/fire water services systems shall be pressure tested to not less than 200 psig and shall maintain that pressure without loss for 2 hours.

15.6.1.1 Leakage

The following provisions shall apply to buried pipe in all combination domestic/fire water service systems, except for limited sprinkler systems:

(1) The amount of leakage at the joints shall be no greater than 2 qt/hr (1.89 L/hr) per 100 joints or gaskets, regardless of pipe diameter.

(2) The amount of leakage in accordance with (1) above shall be permitted to be increased in increments of 1 fluid ounce (30 ml) per inch valve diameter per hour for each metal seated valve that isolates the test section.

(3) The amount of leakage in buried piping shall be measured at the test pressure specified by pumping from a calibrated container.

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

15.9 FLUSHING OF PIPING

Lead-in connections to system risers and fire service mains from the water supply to the system riser (excluding limited systems) shall be flushed completely before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient amount of time to ensure that the system is thoroughly cleaned. The minimum rate of flow shall be not less than one of the following:

- (1) The hydraulically calculated water demand rate of the system, including any hose requirements.*
- (2) The flow that is necessary to provide a velocity of 10 ft/ sec (3.1 m/sec).*
- (3) The maximum flow rate available to the system under fire conditions.*

CHAPTER 16 - REGULATIONS GOVERNING INDIVIDUAL SEWAGE DISPOSAL SYSTEMS FOR HOMES AND OTHER ESTABLISHMENTS WHERE PUBLIC SEWAGE SYSTEMS ARE NOT AVAILABLE

16.1 GENERAL

On-site sewage disposal systems are under the jurisdiction of the Department of Environmental Protection and the county or local boards of health, as applicable.

16.1.1 THROUGH 16.1.6 (DELETED)

16.1.7 ABANDONED DISPOSAL SYSTEMS

When an existing building is being demolished and the existing sewage disposal system is abandoned or an existing sewage disposal system is being abandoned and a connection is being made to the public sewer systems, the plumbing subcode official shall ensure that the existing abandoned tank is disconnected from the building, pumped out, and filled with gravel, stones, or soil material. Sewage disposal systems that are abandoned without an associated hookup to a public sewer system are to be inspected by the health department having jurisdiction.

16.1.8 (DELETED) and 16.2 THROUGH 16.12 (DELETED)

2021 NSPC – NJ EDITION

The following sections include NJUCC Administrative changes to 2021 NSPC Code sections:

CHAPTER 17 PRIVATE POTABLE WATER SUPPLY SYSTEMS

17.1 GENERAL

On-site water supply systems are under the jurisdiction of the Department of Environmental Protection and county or local boards of health, as applicable.

17.2 THROUGH 17.15 (DELETED)

N.J.A.C. 5:23-3.15 (c) - AUTOMATIC RAIN SENSOR DEVICE

NJAC 5:23-3.15(c) Automatic Rain Sensor Device (c) A newly installed automatic lawn sprinkler system, where such systems are not prohibited by local ordinance, shall be equipped with an automatic rain sensor device or switch that will override the irrigation cycle of the automatic lawn sprinkler system when rainfall of more than one-half inch has occurred.

APPENDIX A - SIZING STORM DRAIN SYSTEMS (DELETED)

APPENDIX E - SPECIAL DESIGN PLUMBING SYSTEMS

E.9.3 Rainfall Rates

Rainfall rates shall be applied so that the applicable rainfall rates for Burlington and Ocean counties and all counties south, shall be six (6) inches per hour; for Mercer and Monmouth counties and all counties north, the applicable rainfall rate shall be five (5) inches per hour.

E.9.4 Secondary Roof Drainage (DELETED)

APPENDIX G – WE STAND EXCERPTS - Water Efficiency and Sanitation Standard for the Built Environment (as amended for the National Standard Plumbing Code) Appendix G, entitled “We-Stand Excerpts,” shall not be adopted as part of the plumbing subcode. Appendix G may be used as a reference standard for special design plumbing systems in accordance with Appendix E.

APPENDIX L - TINY HOUSES - Appendix L, entitled “Tiny Houses,” shall be adopted as part of this subcode.

The NJDCA Web Site has all of the latest information regarding these adoptions, including a very specific Fall 2022 Construction Code Communicator articles that include specific explanation and guidance. Always reference this web site to ensure that you are up to date.

<https://www.nj.gov/dca/divisions/codes/codreg/>

Previously Adopted UCC Model Codes:


<https://www.nj.gov/dca/divisions/codes/codreg/previous.html>

CODE (as adopted by NJAC 5:23)	Adoption Date
BUILDING SUBCODE (NJAC 5:23-3.14) International Building Code/2021 (IBC w/ NJ edits from 3.14 coming soon) * Corrected sections (ICC errata) Other referenced I-Codes (IFC/2021; ISPS/2021; etc.) Other referenced ICC Standards (ICC/ANSI A117.1-2017; ICC 300-2017; etc.)	Sept 06, 2022
PLUMBING SUBCODE (NJAC 5:23-3.15) National Standard Plumbing Code/2021 (NSPC w/ NJ edits from 3.15 coming soon)	Sept 19, 2022
ELECTRICAL SUBCODE (NJAC 5:23-3.16) National Electrical Code (NFPA 70)/2020 (link also provides access to all NFPA standards) *TIA 1 through 9	Sept 06, 2022
ENERGY SUBCODE (NJAC 5:23-3.18) International Energy Conservation Code/2021 (Low-Rise Residential) ASHRAE 90.1-2019 (Commercial & all other Residential)	Sept 06, 2022
MECHANICAL SUBCODE (NJAC 5:23-3.20) International Mechanical Code/2021	Sept 06, 2022
ONE- AND TWO-FAMILY DWELLING SUBCODE (NJAC 5:23-3.21) International Residential Code/2021 (IRC w/ NJ edits from 3.21 coming soon) * Corrected sections (ICC errata) Other referenced I-Codes (ISPS/2021; etc.)	Sept 06, 2022

The NJDCA Fall 2022 Construction Code Communicator articles sums it all up.

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.pdf (Page 1 and 2)

Construction Code Communicator



State of New Jersey
Philip D. Murphy, Governor

Department of Community Affairs
Lt. Governor Sheila Y. Oliver, Commissioner

Volume 34, Number 3 **Fall 2022**

2021/2020 Code Adoption Web Links

Well, the day is here! The 2021 I-Codes and 2020 NFPA 70 (National Electrical Code - NEC) were adopted September 6, 2022, and the 2021 National Standard Plumbing Code (NSPC) was adopted September 19, 2022. One can find the amendments to these codes by visiting the Uniform Construction Code (UCC) webpage at <https://www.nj.gov/dca/divisions/codes/codreg/ucc.html> for the subcodes within N.J.A.C. 5:23.

New Jersey (NJ) editions of the International Building Code (IBC), International Residential Code (IRC) and NSPC are currently being processed for publishing (looking like the end of 2022). Note that these editions are purely the base code modified by their applicable subcode in the UCC. For example, the NJ edition of the 2021 IBC is the base code modified by the building subcode at N.J.A.C. 5:23-3.14.

For all codes and until the NJ editions are published, please utilize the links provided for by their organizations.

NJAC 5:23-3.14, Building Subcode

- IBC/2021 – <https://codes.iccsafe.org/content/IBC2021P2>
- IFC/2021 (throughout) - <https://codes.iccsafe.org/content/IFC2021P1>
- A117.1-2017 (Ch 11) – <https://codes.iccsafe.org/content/ICCA11712017P2>
- ASME A17.1-2019 (Ch 30) - <https://www.asme.org/codes-standards> (no code book link)
- ISPSC/2021 (Ch 31) - <https://codes.iccsafe.org/content/ISPSC2021P2>

(Continued on next page)

(2021/2020 Code Adoption Web Links)

NJAC 5:23-3.15, Plumbing Subcode

- NSPC/2021 – <https://epubs.iapmo.org/NSPC/2021/>

NJAC 5:23-3.16, Electrical Subcode

- NEC/2020 (NFPA 70) – <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/Codes-and-Standards>
 - (Scroll to NFPA 70 – you will need to set up a Login/Password)

NJAC 5:23-3.18, Energy Subcode

- IECC/2021 – <https://codes.iccsafe.org/content/IECC2021P2>
- ASHRAE 90.1-2019 - <https://www.ashrae.org/technical-resources/standards-and-guidelines/read-only-versions-of-ashrae-standards>
 - (Scroll to "Standard 90.1-2019")

NJAC 5:23-3.20, Mechanical Subcode

- IMC/2021 - <https://codes.iccsafe.org/content/IMC2021P2>

NJAC 5:23-3.21 – One- and Two-Family Dwelling Subcode

- IRC/2021 - <https://codes.iccsafe.org/content/IRC2021P2>
- ISPSC/2021 - <https://codes.iccsafe.org/content/ISPSC2021P2>

NJAC 5:23, Fuel Gas Subcode

- IFGC/2021 - <https://codes.iccsafe.org/content/IFGC2021P2>

Source: Rob Austin
Code Assistance/Development Unit
(609) 984-7609

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The NJDCA Fall 2022 Construction Code Communicator articles sums it all up.....including "GRACE PERIOD" explanation for this latest code adoption cycle.

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.pdf (Page 2 and 3)

Construction Code Communicator

State of New Jersey
Phillip D. Murphy, Governor
Volume 34, Number 3

Department of Community Affairs
Lt. Governor Sheila Y. Oliver, Commissioner
Fall 2022



Grace Period for 2021/2020 Model Codes

As you were made aware above, the 2021 I-Codes, along with the 2021 National Standard Plumbing Code (NSPC) and 2020 National Electrical Code (NEC), were adopted in September 2022. With these adoptions come a six-month grace period for the previous model codes. This means starting the specified adoption date, applicants may submit a complete permit application, including all prior approvals, to be reviewed under the code in force immediately preceding the subcode revision. Provided that the application is complete, the construction official and applicable subcode officials should perform the plan review and issue construction permit(s) based on the code in force immediately prior to the operative date of the subcode revision. That being said, the 2021 I-Codes and the 2020 NEC were adopted September 6 and the 2021 NSPC was adopted September 19 placing the last day for application submission, separately, on March 5, 2023, for the I-Codes/NEC and March 18, 2023, for the NSPC.

Therefore, if a complete permit application was submitted on or between the dates of September 6, 2022, and March 5, 2023, the project would be permitted to be reviewed under the old codes (2018/2017). However, during the time period of March 6, 2023, to March 18, 2023, if a permit applicant would desire the 2018 NSPC, they may do so but would have to apply under the 2021 I-Codes and 2020 NEC. This essentially makes March 5, 2023, the last day for a complete permit application submission but wanted to acknowledge this slight nuance. In either case, the application should explicitly state which codes were used for the design. In the event the code edition is not explicitly stated, officials should ask what edition was used for the design of the project.

For completeness, the application would include items mentioned at N.J.A.C. 5:23-2.15, Construction permits—application, <https://www.nj.gov/dca/divisions/codes/codereg/ucc.html>. Section 2.15(a) is an absolute. However, Section 2.15(b) states, "In addition [to (a) above], the following information shall be required on any application for a construction permit when such information is available, but not later than the commencement of work." Therefore, items listed in 2.15(b), such as the name of a sprinkler contractor to be used, would not be required at this time. Note:

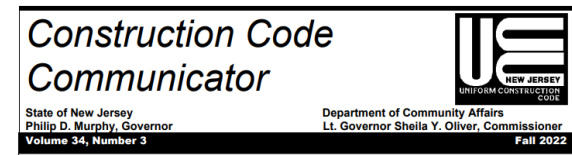
Prototype plan releases based on the 2018 I-Codes, etc. remain valid until the end of the grace period. Therefore, March 5, 2023, would be the last day to apply for a permit with the released prototype.

Source: Rob Austin
Code Assistance/Development Unit
(609) 984-7609

The NJDCA Fall 2022 Construction Code Communicator also contains an article titled **“UCC On-line Only”** so no more UCC Blue Book or Supplements will be mailed. Make sure that you frequently review the **“Rule Proposals and Notice of Adoption”** web link to get the latest information.

https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.



UCC Availability Update

The Department of Community Affairs has decided that the Uniform Construction Code, N.J.A.C. 5:23, will be an online publication only. Effective immediately, hard copy Uniform Construction Code books and subscription services for printed updates to the construction code are no longer available for purchase. We believe that this change in delivery of the construction code to a full online publication will serve all code users more effectively and efficiently.

On its website, the Division of Codes and Standards provides an online copy of the Uniform Construction Code by subchapter. The online text is updated regularly to ensure that all newly adopted rules are incorporated. In addition, an online version of the Uniform Construction Code (UCC) Act is available, and the Division posts rulemaking activity to provide code users with comprehensive information on proposals and notices of adoption that impact the construction code. All documents can be searched and printed.

To access the online copy of the UCC, UCC Act, rule proposals and notices of adoption from the Division of Codes and Standards' website, go to:

<https://www.nj.gov/dca/divisions/codes/codreg/ucc.html>

https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html

The Supplements of the past will be Updates for the future, posted like the Construction Code Communicator, seasonally. They can be found at:

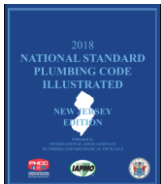
<https://www.nj.gov/dca/divisions/codes/publications/updates.html>

In addition, the New Jersey Office of Administrative Law and LexisNexis provide free online public access to the New Jersey Administrative Code. The public access site for the Administrative Code is updated semi-monthly. The Code can be browsed, searched, and printed.

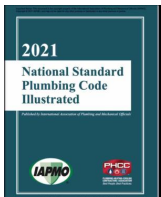
To access the Uniform Construction Code from the free public site, go to <https://www.state.nj.us/oal/rules/accessp/> and select Title 5 (Community Affairs), Chapter 23 (Uniform Construction Code). Source: Code Assistance/Development Unit (609) 984-7609

2021 PROPOSED CHANGES to the 2018 NATIONAL STANDARD PLUMBING CODE

[2021-nspc-matrix-and-proposed-changes-7112019.pdf \(iapmo.org\)](#) Matrix of all changes proposed – 2021 NSPC proposed Changes to the 2018 NSPC



2018 NSPC - NJ Edition [2018 NSPC New Jersey Edition \(iapmo.org\)](#)



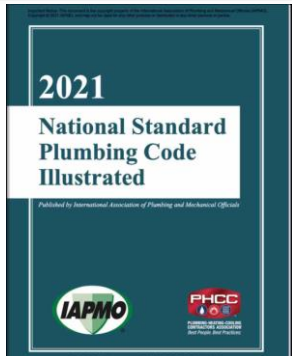
2021 NSPC -NJ Edition <https://epubs.iapmo.org/NSPC/NJ2021/>

IAMPO Web Site (International Association of Plumbing and Mechanical Officials)

<https://www.iapmo.org/>

PHCC Web Site (Plumbing-Heating-Cooling Contractors Association)

<https://www.phccweb.org/>



CHAPTER 1 DEFINATIONS

1.2 DEFINITION OF TERMS

~~**Wash Sink:** A long rectangular sink that is equivalent to a lavatory except it serves more than one person.~~

Group wash fixture. A type of lavatory that allows more than one person to utilize the fixture at the same time. The fixture has one or more drains and one or more faucets.

Basis/Reason for Change: (Julius Ballanco, P.E)

The term wash sink is not used within the profession. The fixture that has multiple faucets is identified as a group wash fixture. This term is also used in the other model plumbing codes. The new definition of group wash fixture clarifies that the fixture can have one or more drains and one or more faucets.

1.2 DEFINITION OF TERMS

Pre-fabricated Shower Enclosure: A factory-assembled watertight structure with enclosing walls, a floor drain, and door or open access way. The enclosure may contain panes, panels, plumbing fixtures, and control devices.

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

Sanitary Drainage: Drainage that contains soil and/or waste.

Basis/Reason for Change: (NSPC Committee)

To define the term that applies to what is referred to as soil and waste piping.

Tailpiece: The pipe or tubing that connects the outlet of a plumbing fixture to a trap.

Basis/Reason for Change: (John Heine, NJ)

To clarify what fixture tailpieces are.

CHAPTER 2 GENERAL REGULATIONS

2.6 TRENCHING, BEDDING, TUNNELING AND BACKFILLING

2.6.6 Underground Plastic Piping

a. Underground plastic pipe shall be installed in accordance with Section 2.6.

EXCEPTIONS:

(1) The maximum particle size in the side-fill and initial backfill shall be not more than 1/2-inch for pipe 6" size and smaller, and 3/4-inch for pipe 8" and larger.

(2) For underground installation of water service piping, refer to ASTM D2774 ~~Standard Practice for Underground Installation of Thermoplastic Pressure Pipe.~~

(3) For underground installation of gravity-flow drainage pipe, refer to ASTM D2321 ~~Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.~~

Basis/Reason for Change: (NSPC Committee)

The titles of referenced standards should not be included in the text of the Code.

CHAPTER 3 MATERIALS

Many Table changes to the Standards!!!

Example of some changes:

Table 3.1.3 - Part I FERROUS PIPE AND FITTINGS		
1	Cast iron threaded drainage fittings	ASME B16.12
2	Cement-mortar lining for ductile iron pipe and fittings	AWWA C104/ ANSI A21.4
3	Ductile iron compact water service fittings ¹	AWWA C153/ ANSI A21.53
4	Ductile iron culvert pipe	ASTM A716
5	Ductile iron gravity sewer pipe	ASTM A746
6	Ductile iron pressure pipe	ASTM A377 AWWA C151/A21.51
7	Ductile iron and gray iron fittings	AWWA C110/A21.10
8	Ferrous Pipe flanges and flanged fittings	ASME B16.5
9	Gray iron threaded fittings, class 125 & 250	ASME B16.4
10	Hub & spigot Cast iron soil pipe and fittings	ASTM A74
11	Hubless cast iron soil pipe and fittings	CISPI 301, ASTM A888
12	Malleable iron threaded fittings, class 150 & 300	ASME B16.3
13	Pipe fittings for use with gasketed mechanical couplings	ASTM F1548
14	Stainless steel Systems for Sanitary DWV, Storm and Vacuum Applications, Above and Below Ground pipe and fittings, 304 & 316L	ASME A112.3.1
15	Seamless, Welded, And Heavily Cold Worked Austenitic Stainless steel pipe and fittings, water distribution	Section 3.4.1.2 ASTM A312/A312M
16	Steel Pipe, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless pipe, galvanized, welded, seamless	ASTM A53/ A53M
17	Threaded Ferrous pipe plugs, bushings, and locknuts with Pipe Threads	ASME B16.14
Table 3.1.3 - Part II NON-FERROUS PIPE AND FITTINGS		
1	Cast bronze copper alloy threaded fittings, class 125 & 250	ASME B16.15
2	Cast copper alloy fittings for flared copper tube	ASME B16.26
3	Cast copper alloy pipe flanges and flanged fittings	ASME B16.24
4	Cast copper alloy solder joint drainage fittings, <u>DWV</u>	ASME B16.23
5	Cast copper alloy solder joint pressure fittings	ASME B16.18
6	Copper drainage tube (DWV)	ASTM B306
7	Copper pipe, threadless	ASTM B302
8	<u>Seamless</u> Copper water tube (K, L, M)	ASTM B88
9	Pipe fittings for use with gasketed mechanical couplings	ASTM F1548
10	Press-connect pressure fittings, copper and copper alloy <u>Copper And Copper Alloy Press-Connect Pressure Fittings</u>	ASME B16.51
11	Push-fit fittings for copper water tube <u>Performance Requirements For Push-Fit Fittings</u>	ASSE 1061
12	Red brass pipe, seamless	ASTM B43
13	Wrought copper braze joint pressure fittings	ASME B16.50
14	Wrought copper solder joint drainage fittings	ASME B16.29
15	Wrought copper solder joint pressure fittings	ASME B16.22

Basis/Reason for Change: (NSPC Committee)

To update, and make current, all of the information in the Chapter 3 Tables for the 2021 NSPC

CHAPTER 3 MATERIALS

3.4.1.2 Stainless Steel Piping

- a. Stainless steel piping systems for potable water shall comply with the applicable requirements of Section 3.4.
- b. Stainless steel pipe and fittings shall be manufactured in accordance with the applicable requirements of ASTM A269, ~~or~~, ASTM A312, ASTM A554, or ASTM A778. Pipe shall be IPS schedule 10S or copper tube size (CTS) with wall thicknesses not less than schedule 5S. The manufacturer's water pressure drop data shall be used for CTS schedule 5S pipe.
- c. Fittings shall be compression, flanged, grooved, threaded, welded or be the press-connect type with EPDM O-ring seals. Pipe joints shall be made in accordance with the manufacturer's instructions.
- d. Pipe and fittings shall be Type 304 or Type 316 stainless steel. The types of stainless steel shall not be mixed within the same piping system.

Basis/Reason for Change: (Mark Fasel, Viega LLC)

This proposed revision includes ASTM A269 Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service, ASTM A554 Standard Specification for Welded Stainless Steel Mechanical Tubing, and ASTM A778 Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products in addition to the existing ASTM A312 standard. These standards are recognized by other product performance standards and national plumbing codes and meet the requirements for consensus standards. This proposed revision also incorporates the other joining method types for stainless steel pipe and tubing which were inadvertently left out of the previous publication.

CHAPTER 3 MATERIALS

3.4.6 LIMIT ON LEAD CONTENT

3.4.6 Limit on Lead Content

- a. Materials used in potable water supply systems, including piping, faucets, and valves, shall be “leadfree” as defined by current Federal Law.
- b. Drinking water system components shall comply with the ~~lead-leachate~~ requirements of NSF 61 and NSF 372. Refer to Section 3.1.5 for components that are within the scope of NSF 61. ~~and NSF 372.~~

Basis/Reason for Change: (NSPC Committee)

NSF 61 and NSF 372 do not have lead leachate requirements. Section 3.1.5 does not include components that are within the scope of NSF 372.

CHAPTER 3 MATERIALS

3.9 AIR CONDITIONING CONDENSATE DRAIN PIPING

Indirect waste piping from air conditioning unit drains to ~~the~~ its point of ~~disposal~~ discharge shall be of a material suitable for potable water, sanitary drainage, or storm drainage.

Drainage fittings shall be used for piping 1-1/4" and larger.

EXCEPTION: Flexible plastic tubing shall be permitted to be used for the discharge from ~~small fractional horsepower~~ condensate pumping units that have tubular discharge connections.

The flexible tubing shall be supported to its point of discharge.

Basis/Reason for Change: (NSPC Committee)

1. To require drainage fittings for AC condensate drainage where applicable.
2. To use "tubular discharge connections" to permit flexible plastic tubing for condensate pumps instead of "small fractional horsepower units".

CHAPTER 4 JOINTS AND CONNECTIONS

4.2 TYPES OF JOINTS FOR PIPING MATERIALS

4.2.6 Press-Connect Fittings

b. The fittings shall be ~~in full compliance with~~ listed to ASME B16.51, ASTM F3226 or IAPMO PS 117.

Standard added = IAPMO PS 117 (Copper and Copper Alloy Press Connect Pressure Fittings)

Table 18.1 REFERENCED STANDARDS

Standard Number	Standard Title	2021 NSPC
<u>IAPMO PS 117-2017</u>	<u>Press and Nail Connections</u>	<u>Table 313 – Part I,</u> <u>Table 313 – Part II</u>

Basis/Reason for Change: (Mark Fasel, Viega LLC)

The proposed addition of ASTM F3226 and IAPMO PS 117 align with prior proposal to add these consensus standards to Table 3.4 MATERIALS FOR POTABLE WATER PIPING. The proposed standards are applicable to both copper and stainless steel press-connect fittings.

CHAPTER 4 MATERIALS

4.2.14 Plastic Joints For Plastic Piping

4.2.14.2 Solvent Cement Joints in PVC Piping

Primers and solvent cements shall be suitable for joints in PVC piping. Primers shall comply with ASTM F656. Solvent cements shall comply with ASTM D2564. Primers shall be purple in color and solvent cements shall not be purple in color.

4.2.14.3 Solvent Cement Joints in CPVC Piping

Primers (where used) and solvent cements shall be suitable for joints in CPVC piping. CPVC piping includes copper tube size (CTS) piping and iron pipe size (IPS) piping. Primers shall comply with ASTM F656. Solvent cements shall comply with ASTM F493. Primers shall be purple in color and solvent cements for use with primers shall be orange in color. One-step solvent cement ~~used for use~~ without a primer on copper tube size SDR 11 piping 1/2 inch through 2 inch size (CTS) piping up to 2- inch size shall be yellow in color. ~~One-step solvent cement used for joining CPVC fire sprinkler pipe 3/4 inch through 3 inch size shall be listed for fire protection use.~~

4.2.14.4 Solvent Cement Joints in ABS Piping

Solvent cements shall be suitable for joints in ABS piping and comply with ASTM D2235. Solvent cements shall be black, yellow, or clear.

4.2.14.7 Heat Fusion Joints in Polypropylene (PP) Water Piping

Heat fusion joints in PP water piping complying with ASTM F2389 shall be made in accordance with the applicable requirements of ASTM D2657.

Basis/Reason for Change: (NSPC Committee)

1. To add the ASTM standards for solvent cement joints in PVC, CPVC, and ABS piping.
2. To add solvent cement joints for ABS piping
3. To add heat fusion joints for PP piping.

CHAPTER 4 MATERIALS

Code Section: ~~4.2.18~~ BENDING COPPER WATER TUBE

~~4.2.18~~ Butt Fusion ASTM F714 high-density polyethylene (HDPE) pipe and ASTM D3261 fittings shall be joined by butt fusion in accordance with ASTM D2657.

~~4.2.19~~ 4.2.18 Bending Copper Water Tube

Table ~~4.2.19~~ 4.2.18: BENDING COPPER WATER TUBE

Basis/Reason for Change: (NSPC Committee)

1. Section 4.2.18 for butt fusion is deleted because butt fusion is included in the scopes of ASTM D2657 and ASTM F2620 for heat fusion. Heat fusion includes socket fusion, butt fusion, and saddle fusion. ASTM D2657 is for polyolefin piping, which does not include polyethylene (PE). ASTM F2620 is for polyethylene (PE) piping.
2. Section 4.2.19 and Table 4.2.19 are changed to 4.2.18 to avoid making 4.2.18 “Reserved”.

Required Changes to Figures

In Figure 4.2.14-F change “~~HEAT FUSED~~” to “SOCKET FUSED” – 2 places

CHAPTER 4 MATERIALS

4.3.9 PLASTIC DWV PIPE TO OTHER MATERIALS

~~c. Solid Wall PVC Schedule 40 DWV Plastic Pipe to Cast-Iron Hub Ends: Joints shall be made by caulking the plastic pipe into the hub end with molten lead and oakum or by use of a compression gasket that is compressed when the plastic pipe is inserted into the hub end. Joints shall be permitted to be made with or without a hub end plastic adapter. Adapters without a caulking bead shall be permitted. See **Figures**~~

~~4.3.9-B through 4.3.9-D~~

~~d. Cellular Core PVC Schedule 40 DWV Plastic Pipe to Cast-Iron Hub Ends: Joints shall be made by caulking a solid plastic adapter into the cast-iron hub end with molten lead and oakum or by use of a compression gasket that is compressed when the plastic pipe is inserted into the hub end. Adapters without a caulking bead shall be permitted. Cellular core plastic pipe shall not be lead-caulked.~~

c. Schedule 40 DWV Plastic Pipe to Cast-Iron Hub Ends: Solid wall and cellular core PVC and ABS plastic DWV drain piping shall be connected to cast-iron hub ends by the installation of a compression gasket in the hub that is compressed when the pipe is inserted. The compression gasket shall be properly sized for the hub end and the pipe. See **Figure 4.3.9-C**

Basis/Reason for Change: (NSPC Committee)

To delete the lead caulking of plastic piping into cast-iron hub ends.

CHAPTER 5 TRAPS, CLEANOUTS, AND BACKWATER VALVES (No changes)

CHAPTER 6 LIQUID WASTE TREATMENT EQUIPMENT

6.2 GREASE INTERCEPTORS

6.2.1 General

6.2.1.1 Hydromechanical Grease Interceptors (HGI)

c. A calibrated, non-adjustable flow control device shall be provided on the inlet side of each HGI interceptor to prevent the waste flow (gpm) from exceeding the rated flow capacity of the interceptor. The flow control device shall be vented in accordance with Section 6.2.4.

Exception: Listed HGI interceptors with integral flow controls or restricting devices shall be installed in an accessible location in accordance with the manufacturer's installation instructions.

****Basis/Reason for Change:** (Ken Loucks, WA)

There are certified and listed grease interceptors that have unvented integral flow controls that are built into inlet fittings inside of the grease interceptors. This exception is necessary to approve HGIs with integral flow controls. Both the Uniform Plumbing Code and the International Plumbing Code allow certified and listed HGIs with unvented integral flow controls.

[2021 NSPC Code Hearing Update \(iwconsultingservice.com\)](http://iwconsultingservice.com)

[Hydromechanical Grease Interceptor 75 GPM | Drain-Net](#)

6.2.3 Fixture Traps

a. Fixtures that discharge into a hydromechanical or GRD grease interceptor shall be trapped and vented between the fixture and the interceptor.

~~**Exception:** A hydromechanical or GRD grease interceptor with the required flow control device shall be permitted to serve as a trap for an individual fixture if the developed length of the drain between the fixture and the interceptor does not exceed four feet horizontally and 30 inches vertically.~~

****Basis/Reason for Change:** (Ken Loucks, WA)

Grease interceptors are not fixture traps. A trap is defined in the code as, “a fitting or device that provides a liquid seal to prevent the emission of sewer gasses without materially affecting the flow of sewage or wastewater through it.” Many modern grease interceptors have open top or vented inlet fittings that do not provide a liquid seal. Section 5.1 c. states that fixtures “shall not be double trapped” unless a relief vent is provided between the two traps. Grease interceptors that are approved as a fixture trap are unlikely to have a trap installed downstream as this would be considered by most to be double trapping. This has and will lead to dangerous exposure to airborne pathogens and noxious odors inside buildings.

6.2.3 Fixture Traps

a. Fixtures that discharge into a hydromechanical or GRD grease interceptor shall be trapped and vented between the fixture and the interceptor.

Exception: A hydromechanical or GRD grease interceptor with the required flow control device shall be permitted to serve as a trap for an individual fixture if the developed length of the drain between the fixture and the interceptor does not exceed four feet horizontally and 30 inches vertically.

**Basis/Reason for Change: (Continued) – (Ken Loucks, WA)

The term “grease trap” was changed to hydromechanical grease interceptor beginning with the 2006 edition of the Uniform Plumbing Code, to eliminate the confusion over whether these devices are traps or interceptors. They are in fact interceptors and not traps. Both terms are defined in the code and their respective applications delineated. An interceptor is defined as, “A device designed and installed so as to separate and detain deleterious, hazardous, or undesirable matter from normal wastes while permitting normal sewage or liquid wastes to discharge into the drainage system by gravity.”

Interceptors are not intended to prevent the emission of sewer gasses. This is why all fixtures connected to a grease interceptor must be separately trapped and vented in accordance with the code and there should be no allowance for an interceptor to serve as a fixture trap for any fixture connected to it. While the UPC did allow a grease trap to serve as a fixture trap in the identical manner permitted in the NSPC, that allowance was removed beginning with the 2000 edition of the code. The threat to human health and safety from sewer gasses entering buildings through an interceptor far outweighs the benefits for approving their use as fixture traps.

Eliminated Figure 6.2-B to conform with the removal of the “Exception” (e.g., grease interceptor is not a trap.)

Figure 6.2 (previously Figure 6.2-A) remains in the 2021 NSPC

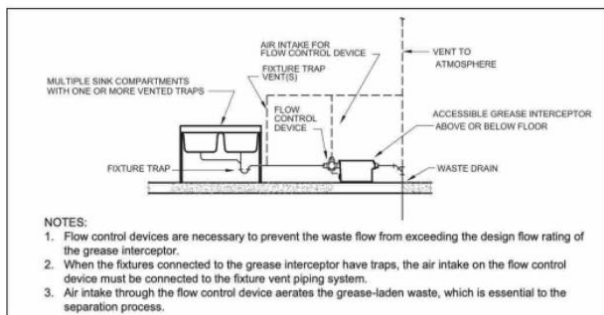


Figure 6.2
A GREASE INTERCEPTOR SERVING A TRAPPED AND VENTED FIXTURE

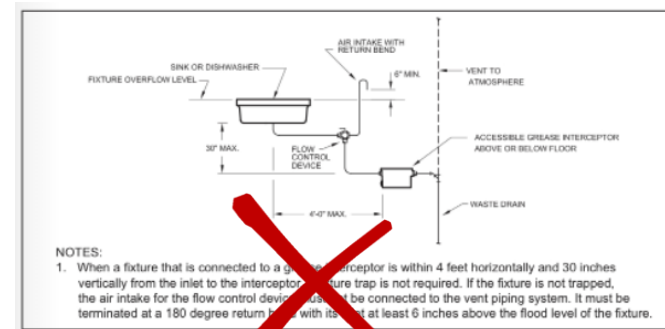
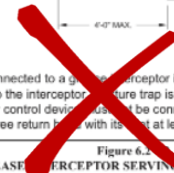


Figure 6.2-B
A GREASE INTERCEPTOR SERVING AS A FIXTURE TRAP



CHAPTER 7 FIXTURES

(Coordinated change to “Group Wash Fixture” definition change)

7.6.5 Wash Fountains and ~~Wash Sinks~~ Group Wash Fixtures

- a. Circular and semi-circular wash fountains and wall-mounted and free-standing ~~wash sinks~~ group wash fixtures shall comply with the requirement of Section ~~7.6~~ 7.6.1. Mixed water temperature control shall comply with Section 10.15.6.
- b. The water supply to public wash fountains shall not exceed 0.75 gpm for each of the rated number of users. The rated number of users for wash fountains shall be ~~as specified by the manufacturer but shall not be more than one person per 18-~~ 20 inches of usable length of the rim having an available water spray.
- c. The faucet for ~~wash sinks~~ group wash fixture shall comply with Section 7.6.2 for lavatories. The rated number of users for ~~wash sinks~~ group wash fixture shall equal the number of faucets.

7.6.7 Lavatory Equivalents

Where ~~group type wash fountains~~ group wash fixtures are used to satisfy the number of lavatories required by Section 7.21.1, each rated user position shall be considered as the equivalent of one lavatory.

Basis/Reason for Change: (Julius Ballanco, P.E)

The current reference in Section 7.6.5 a is circular. It requires compliance with Section 7.6, however, 7.6.5 is a part of 7.6. What is being implied is that the fixtures meet the standard listed in 7.6.1. The change will clarify that reference. The water supply to wash sink is only limited in volume for public use fixtures. Wash sinks are often installed in factory and industrial buildings for employee use. In these facilities a greater volume of water is required for washing hands having dirt and grime from a factory setting. This would be consistent with 7.6.2 regarding water limitation for public lavatories. The industry consensus is that defined value per user for a wash sink is 20 inches. The other two model plumbing codes have a similar value. The change converts the value to a fixed number of one person per 20 inches of rim space.

CHAPTER 7 FIXTURES

7.10 SHOWERS

7.10.8 Pre-Fabricated Shower Enclosures Pre-fabricated shower enclosures shall comply with IAPMO IGC 154.

Table 3.1.3 - Part V PLUMBING FIXTURES		
18	Pre-fabricated shower enclosures	IAPMO IGC 154

Table 18.1 REFERENCED STANDARDS		
Standard Number	Standard Title	2021 NSPC
IAPMO IGC 154-2019	Shower and Tub/Shower Enclosures, Bathtubs with Glass Pressure-Sealed Doors, and Shower/Steam Panels	7.10.8



Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed language adds IAPMO IGC 154 (Shower and Tub/Shower Enclosures, Bathtubs with Glass Pressure-Sealed Doors, and Shower/Steam Panels) which includes requirements for evaluation of shower panes, such as the glass doors, or clear plastic walls commonly installed in the field and are not currently addressed in the code. Shower panes covered under IAPMO IGC 154 are required to comply with minimum performance requirements for panes such as “tempered or laminated safety glass” and “architectural glazing material,” guiding the installer and AHJ in ensuring the installation of these shower enclosures meet minimum standards for a safer and more reliable system.

Furthermore, the IAPMO IGC 154 standard does not supersede or replace the existing referenced standards for shower receptors or shower stalls because IAPMO IGC 154 covers full shower enclosures containing panes, panel, plumbing fixtures, and control devices.

This standard allows the opportunity to test the shower controls, joints, fittings, walls, and appurtenances as an assembly in a lab to confirm compliance. Therefore, this standard improves the code, without replacing the existing provisions. In addition to providing appropriate standards for these enclosures, the code will be keeping up with advances in technology allowing AHJ’s to ensure that these new products maintain minimum code standards for health and safety.

CHAPTER 7 FIXTURES

7.2 FIXTURES FOR ACCESSIBLE USE

b. Exposed waste and water supply piping for accessible sinks and lavatories shall be covered with protectors or insulators that comply with ASME A112.18.9, ASTM C1822 or IAPMO PS 94.

Table 3.1.3 - Part VI PLUMBING FIXTURE TRIM AND ACCESSORIES		
15	Protectors/insulators for exposed piping on accessible fixtures	ASME A112.18.9, <u>ASTM C1822</u> IAPMO PS 94

Standard Number	Standard Title	2021 NSPC
<u>ASTM C1822-2015</u>	Insulating Covers on Accessible Lavatory Piping	<u>7.2</u>
<u>IAPMO PS 94-2012e1</u>	Insulated Protectors for P-Traps, Supply Stops, and Risers	<u>7.2</u>

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed change adds other appropriate standards addressing covers for under-sink protection. ASTM C1822 and IAPMO PS 94 cover under lavatory protection for use on exposed drain and water supply piping under accessible lavatories and sinks. These systems are widely used in the industry and provisions are necessary for the application and for guidance to the Authority Having Jurisdiction.

CHAPTER 7 FIXTURES

7.4 WATER CLOSETS

7.4.9 Integral Overflow

Where water closets include an integral overflow drain, such water closets shall comply with IAPMO IGC 252.

Table 3.1.3 - Part V PLUMBING FIXTURES		
3	Ceramic plumbing fixtures	ASME A112.19.2, CSA B45.1 <u>IAPMO IGC 252-2018</u>

Table 18.1 REFERENCED STANDARDS		
Standard Number	Standard Title	2021 NSPC
IAPMO IGC 252-2018	<u>Water Closet with an Overflow</u>	<u>7.4.6</u>

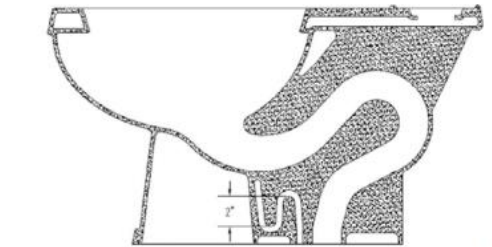


Figure 1. Side Cut-Away View Showing Integral Overflow

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed language adds IAPMO IGC 252 for water closets that contain overflows internal to the bowl (not to be confused with overflows in the tank). Typical water closet overflows are located inside the flush tank and drain into the bowl. However, there are water closets that contain integral overflows on the “bowl” similar to integral overflows on bathtubs and lavatories. If the main water closet trap is clogged, the water will overflow above the flood level rim of the bowl and onto the floor. These integral bowl overflows allow the rising bowl water to enter through a secondary internal bowl overflow and directs the water through the water closet flange to the drain. See Figure 1 below.

This standard will assist the end user to enforce the code where water closets with these internal bowl overflows are installed.

CHAPTER 7 FIXTURES

7.6 LAVATORIES

7.6.1 Compliance

a. Lavatories shall comply with the following standards:

- 6. Terrazzo, concrete, composite stone, and natural stone; CSA B45.8/IAMPO Z403
- 7. Glass; CSA B45.11/IAMPO Z401.
- 8. Aluminum and copper; CSA B45.12/IAMPO IGC127.

b. Lavatory assemblies with automatic soap dispensers, faucets, or hand dryers shall comply with IAPMO IGC 127.

Table 3.1.3 - Part VI PLUMBING FIXTURES		
4	Combined Hand-Washing Systems	IAPMO IGC 127

Table 18.1 REFERENCED STANDARDS		
Standard Number	Standard Title	2021 NSPC
IAPMO IGC 127-2018	Combined Hand-Washing Systems	7.6.1

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed language adds IAPMO IGC 127 standard for lavatory assemblies which contain multiple components such as automatic soap dispensers, faucets, and hand dryers as one fixture. This type of new technology is becoming common and these types of units are being used throughout the industry (such as airports). This standard will assist the consumer and end user in verifying that such fixture assemblies are compliant with an industry standard. In addition to providing appropriate standards for these assemblies, the code will be keeping up with advances in technology allowing AHJ's to ensure that these new products maintain minimum code standards for health and safety.

CHAPTER 7 FIXTURES

7.8.2 Waste and Overflow

Bathtubs and combination bath/showers shall have a waste outlet ~~and overflow pipes~~ not less than 1- 1/2" nominal size. When an overflow is provided by the manufacturer, the overflow shall be not less than 1-1/2" nominal size. Waste outlets shall be equipped with a pop-up waste, chain, and stopper, or similar type of drain plug.

Basis/Reason for Change: (Julius Ballanco, P.E)

The proposed change adds appropriate material standards for shower receptors and stalls. The standards referenced in Section 7.8.1 no longer mandate an overflow for a bathtub. This change coordinates the plumbing code requirements with the standard requirements. When an overflow is provided, it must be installed. However, if the bathtub does not come with an overflow, an overflow should never be field installed. This could destroy the bathtub finish and void the listing of the product.

CHAPTER 7 FIXTURES

7.10 SHOWERS

7.10.1 Compliance

a. ~~Plastic~~ Shower receptors and shower stalls shall comply with the following standards:

1. Plastic; CSA B45.5/IAPMO Z124
2. Enameled cast-iron; ASME A112.19.1/CSA B45.2
3. Enameled steel; ASME A112.19.1/CSA B45.2
4. Vitreous and non-vitreous china; ASME A112.19.2/CSA B45.1
5. Stainless steel; ASME A112.19.3/CSA B45.4
6. Aluminum and copper; CSA B45.12/IAPMO Z402
7. Terrazzo, concrete, composite stone, and natural stone; CSA B45.8/IAPMO Z403

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed change adds appropriate material standards for shower receptors and stalls.

7.11 SINKS

a. Sinks shall comply with the following standards.

6. Terrazzo, concrete, composite stone, and natural stone; CSA B45.8/IAPMO Z403
7. Glass; CSA B45.11/IAPMO Z401
8. Aluminum and copper; CSA B45.12/IAPMO Z402

d. Sink assemblies with automatic soap dispensers, faucets, or hand dryers shall comply with IAMPO IGC 127.

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

The proposed change adds appropriate material standards for sink fixtures.

CHAPTER 7 FIXTURES

7.16 FLOOR DRAINS, AREA DRAINS, AND TRENCH DRAINS

7.16.1 Compliance General

Floor drains, area drains, and trench drains shall comply with ASME A112.6.3 or CSA B79, or, if stainless steel, ASME A112.3.1.

7.16.2 Grate Free Area and Strainer or Sediment Basket

- a. The minimum free area of the top grate for floor drains ~~, area drains, and trench drains~~ shall comply with ~~ASME A112.6.3~~ based on their outlet connection size. their applicable product standard in Section 7.16.1.
- b. Where floor drains and area drains receive other than clear-water waste, they shall include an internal outlet strainer or removable metal sediment basket to retain solids.
- ~~b. The trap seal for floor drains shall be not less than 2 inches deep.~~
- ~~c. Where infrequently used floor drains are subject to evaporation of their trap seals, they shall either 1) be provided with a 4-inch deep trap seal and have an accessible means to replenish, or 2) be fed from an automatic trap seal priming device complying with ASSE 1018 or ASSE 1044, or 3) be fitted with a barrier type floor drain trap seal protection device complying with ASSE 1072.~~
- ~~d. Where traps are automatically primed, the priming connection shall be above the weir of the trap. **See Figures 7.16.2-A through C**~~

Basis/Reason for Change: (NSPC Committee)

1. To coordinate Section 7.16 for floor drains.
2. Area drains and trench drains were moved to Section 13.7 for storm water drainage in the 2018 NSPC.
3. Figure 7.16.2-A, Figure 7.16.2-B, and Figure 7.16.2-C are not necessary and can be deleted. They do not clarify the requirements for floor drains.

CHAPTER 7 FIXTURES

7.24 PLUMBED EMERGENCY EYEWASH AND SHOWER EQUIPMENT

g. Water heaters used to control outlet temperatures from 60° F to 100° F for emergency fixtures shall comply with ASSE 1085. (re-letter subsequent subsections)

Basis/Reason for Change: This change will add the new standard for water heater that supply water for emergency fixtures. This will provide an inexpensive option for locating a dedicated water heater in the close proximity of an emergency fixture.

ASSE 1085 regulates water heaters that have equivalent performance requirements to ASSE 1071 thermostatic mixing valve for emergency fixtures.

[ASSE Certified Water Heaters » Working Pressure \(workingpressuremag.com\)](#)

[Water Heaters Used for Temperature Control » Working Pressure \(workingpressuremag.com\)](#)

[ASSE Standard #1085-2018\(R2021\) \(Download\) - ASSE International Webstore \(assewebstore.com\)](#)

CHAPTER 8 HANGERS AND SUPPORTS (NO CHANGES)

CHAPTER 9 INDIRECT WASTE PIPING AND SPECIAL WASTES

9.4 AIR CONDITIONING CONDENSATE (Reorganized)

9.4.3 Air Conditioning Condensate

a. Air conditioning condensate shall be discharged to one of the following:

1. indirectly to the building sanitary drainage system.
2. indirectly to the building storm drainage system.
3. to an approved outdoor location.
4. to a laundry sink, fixture tailpiece, or tub overflow, within the same occupancy. Connections to tub overflows shall be accessible.

b. Where indirect waste connections are required, they shall comply with Section 9.1.10.

c. Air conditioning condensate shall not be permitted to discharge outdoors where it will flow across paved surfaces, accumulate in exposed locations, or otherwise create a nuisance.

d. Minimum drain pipe sizes for gravity flow from cooling equipment shall be as follows: 3/4" pipe size up to 20 tons of refrigeration 1" pipe size from over 20 tons to 40 tons of refrigeration 1-1/4" pipe size from over 40 tons to 90 tons of refrigeration 1-1/2" pipe size from over 90 tons to 125 tons of refrigeration 2" pipe size from over 125 tons to 250 tons of refrigeration

CHAPTER 9 INDIRECT WASTE PIPING AND SPECIAL WASTES

9.4.3 Air Conditioning Condensate (Continued)

e. Drain piping materials shall be as required by Section 3.9. Drainage fittings shall be used for pipe sizes 1-1/4" and larger.

f. Gravity drain piping shall be sloped not less than 1/8" per foot.

g. A liquid seal trap shall be provided for each unit or coil drain connection. The trap pipe size shall be not less than the size of the unit or coil drain. Traps shall have sufficient seal depth to offset the positive or negative air pressure in the unit or coil at its drain connection and maintain atmospheric pressure in the drain piping.

(delete Figure 9.4.3-A, change Figure 9.4.3-B to Figure 9.4.3)

See Figure 9.4.3

Basis/Reason for Change: (NSPC COMMITTEE)

1. To clarify the requirements for air conditioning condensate drainage.
2. To coordinate the pipe sizing for AC condensate drainage with industry standards.
3. Figure 9.4.3-A does not conform to the proposed pipe size changes in Section 9.4.3. It is no longer necessary.
4. Was submitted as 18-096 for 2018 but tabled for further study.

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.12.4 Valves in Dwelling Units

b. In multiple dwelling units, assisted living units, and multiple care units, one or more shutoff valves shall be provided in the main supply or main branches in each dwelling unit so that the water supply to any fixture or group of fixtures in that dwelling unit can be shut off without stopping the water supply to fixtures in other dwelling units. These valves shall be accessible in the dwelling unit that they control.

EXCEPTION: Individual fixture valves may be used to satisfy this requirement.

Delete Figure 10.12.4B

Edit Figure 10.12.4A (Drop A from Figure and Text)

Basis/Reason for Change: (NSPC COMMITTEE)

To clarify the requirements for shutoff valves in multiple dwelling units, assisted living units, and multiple care units.

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.12 WATER SUPPLY CONTROL VALVES

10.12.10 Leak Detection Devices

Where leak detection devices for water supply and distribution are installed, they shall comply with IAPMO IGC 115 or IAPMO IGC 349.

IAPMO IGC 115-201 Automatic Water Leak Detection Devices

IAPMO IGC 349-2018 Electronic Plumbing Supply System Integrity Protection Devices

Basis/Reason for Change: (Bruce Pfeiffer, Kansas)

Leak detection devices address water leaks of various sizes and if left unattended can be very costly. The proposed language will assist the end user to assure minimum standards are met where these leak detection devices are installed. Leak detection systems and devices compliant with IAPMO IGC 115 have been tested and in use for over 10 years. **With the development of "Smart" leak detection devices covered by IAPMO IGC 349**, the range of applications for these systems and the number of installations continues to grow. The proposed provisions will assist the end user in selecting an approved device for installation and ensure the health and safety of the public through code enforcement.

[flo Smart Home Water Monitoring and Leak Detection System - Manuals+](#)

[Leak Detectors - Leak Shutoff - SupplyHouse.com](#)

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.15.6 Mixed Water Temperature Control

a. Hot Water Supply Sources: The temperature control devices for water heaters and other hot water supply sources shall not be permitted to be used to meet this Section's requirements for mixed water temperature control unless the water heater complies with ASSE 1082, ASSE 1084, or ASSE 1085.

e. Showers and Bath/Shower Combinations: The water discharged from shower heads, wall or ceiling mounted hand-held showers, body sprays, and tub spouts shall be controlled to a temperature no higher than 120° F by a Type P, Type T, or Type P/T automatic compensating valve complying with ASSE 1016/ASME A112.1016/CSA B125.16. The upper temperature of 120° F shall be permitted to be controlled by a water heater complying with ASSE 1082 or ASSE 1084.

f. Multiple Showers: Where multiple (gang) showers are supplied by a one-pipe tempered water supply system, the water temperature shall be controlled to a temperature no higher than 105°F by an automatic temperature control mixing valve complying with ASSE 1069 or a water heater complying with ASSE 1084.

g. Multiple Lavatories: Where multiple lavatories are supplied by a one-pipe tempered water supply system, the water temperature shall be controlled to a temperature no higher than 110° F by a water temperature limiting device complying with ASSE 1070/ASMEA112.1070/CSAB 125.70 or a water heater complying with ASSE 1084.

h. Bathtubs and Whirlpool Baths: The hot water supply to the faucets for bathtubs and whirlpool baths without showers and with or without deck-mounted hand sprays, shall be controlled to a temperature no higher than 120°F by a water temperature limiting device complying with ASSE 1070/ ASME A112.1070/CSAB125.70 or a water heater complying with ASSE 1084.

i. Bidets: The hot water supply to the faucet on bidet plumbing fixtures shall be controlled to a temperature no higher than 110°F by a water temperature limiting device complying with ASSE 1070/ASME A112.1070/CSA B125.70 or a water heater complying with ASSE 1084. Where bidets are incorporated into toilet seats or consist of a heated water tank and nozzle, their controls shall limit the discharge temperature to no more than 110° F.

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.15.6 Mixed Water Temperature Control (Continued)

j. Hand Washing Facilities: The hot water supply to the following hand washing fixtures shall be controlled to a temperature no higher than 110° F by a water temperature limiting device complying with ASSE 1070/ ASME A 112.1 070/CSA B 125.70 or a water heater complying with ASSE 1084:

1. in public toilet rooms, 2. in hotel and motel guest rooms, 3. in hospital patient rooms, 4. in medical and clinical treatment rooms
5. wash fountains , 6. wash sinks group wash fixtures

k. Commercial Hair/Shampoo Sink Sprays: The hot water supply to the faucets and controls for commercial hair/shampoo sink sprays and pedicure basins shall be limited to a temperature no higher than 110°F by a temperature limiting device complying with ASSE 1070/ ASME A 112.1 070/CSA B 125.70 or a water heater complying with ASSE 1084.

1. Animal Washing Fixtures: The hot water supply to the faucet or control device for an animal washing fixture shall be controlled to a temperature no higher than 110°F by a temperature limiting device complying with ASSE 1070/ASME A 112.1 070/CSA B 125.70 or a water heater complying with ASSE 1084.
(remainder of section unchanged)

Basis/Reason for Change: (Julius Ballanco, P.E. – For Bradley Corp)

This change adds the three new standards that regulate water heaters used to control the outlet temperature to the appropriate locations in Section 10.15.6. This is the section that regulates mixed water temperature. ASSE 1082 regulates a water heater that has equivalent performance requirements to an ASSE 1017 valve. ASSE 1084 regulates a water heater that has equivalent performance requirement to an ASSE 1070 valve. The standard also has requirements equivalent to the temperature controlling requirements of ASSE 1017. ASSE 1085 regulates a water heater that has equivalent performance requirements to an ASSE 1071 valve for emergency fixtures.

These water heaters can be used in place of various valves used to regulate upper temperatures. The addition of ASSE 1082 to the upper temperature limit for shower valves is consistent with current practices of using an ASSE 1017 valve to limit the maximum hot water temperature to 120° F. The safety provisions are provided by the shower valve that complies with ASSE 1016.

The other change is editorial to modify wash sinks to group wash fixtures. This is consistent with another change submitted to Section 7.6.5.

[ASSE Certified Water Heaters » Working Pressure \(workingpressuremag.com\)](#)

[Water Heaters Used for Temperature Control » Working Pressure \(workingpressuremag.com\)](#)

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.15 HOT WATER

10.15.8 Plastic Piping

a. Plastic piping used for hot water distribution shall conform to the requirements of Section 3.4.3 and Table 3.4.3. Piping shall be water pressure rated for not less than 160 psi at 73°F and 100 psi at 180°F and ~~160 psi at 73°F~~.

NOTE: The working pressure rating for ~~certain approved~~ plastic piping materials varies depending on its material composition, dimension ratio or pipe schedule and size, ~~pipe size, wall thickness~~ and method of joining. See Table 3.4.3.

b. Plastic ~~pipe or tube~~ piping shall not be used downstream from instantaneous water heaters, immersion water heaters, and other heaters, not having approved temperature safety devices.

c. ~~Piping within six inches of flue or vent connectors shall be approved metallic pipe or tube.~~ Plastic piping shall not be installed within six inches of the exhaust flues for gravity-vented gas-fired equipment and similar high temperatures.

d. The ~~normal~~-operating pressure in water distribution piping systems utilizing approved plastic ~~pipe or tube for hot water distribution~~ piping shall be not more than 80 psi. Where necessary, one or more pressure reducing valves shall be provided to regulate the hot and cold water supply pressure to not more than 80 psi. Refer to Section 10.14.6. (Excessive Pressures)

Basis/Reason for Change: (J. Richard Wagner)

1. To clarify the requirements for plastic piping used for hot water distribution.

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.15.9 Drip Pans

10.15.9.1 Where Required

Where tank-type water heaters or hot water storage tanks are installed in locations where leakage will cause structural damage to the building, ~~the tank or water heater~~ they shall be installed in a drip pan in accordance with Sections 10.15.9.2 and 10.15.9.3.

Basis/Reason for Change: Editorial. (NSPC Committee)

10.15.10 Domestic Water Heaters

j. Water heaters with integral temperature control devices for hot water distribution systems shall comply with ASSE 1082.

k. Water heaters with temperature limiting capacity shall comply with ASSE 1084.

l. Water heaters for emergency equipment shall comply with ASSE 1085.

Basis/Reason for Change: (Julius Ballanco, P.E. – For Bradley Corp)

This change adds the three new standards that regulate water heaters used to control the outlet temperature to section 10.15.10. This is the section that references all of the water heater standards. ASSE 1082 regulates a water heater that has equivalent performance requirements to an ASSE 1017 valve. ASSE 1084 regulates a water heater that has equivalent performance requirement to an ASSE 1070 valve. The standard also has requirements equivalent to the temperature controlling requirements of ASSE 1017. ASSE 1085 regulates a water heater that has equivalent performance requirements to an ASSE 1071 valve for emergency fixtures.

CHAPTER 10 WATER SUPPLY AND WATER DISTRIBUTION SYSTEMS

10.16.6 Relief Valve Piping

a. There shall be no shut-off valve, check valve, or other restricting device between a relief valve and the pressure vessel or piping system being protected.

b. Manufactured water heater relief valve drain tubes shall comply with ASME A112.4.1. Manufactured water heater relief valve drain tubes shall not be installed where water heater capacity exceeds 105,000 Btu/hr.

<https://www.watts.com/dfsmedia/0533dbba17714b1ab581ab07a4cbb521/55926-source/tag-100> (Watts P&T tag)

<https://www.watts.com/resources/installation> (Watts P&T installation)

<https://www.watts.com/resources/references-tools/t-and-p-relief-valves> (Watts T & P Relief Valves)

Basis/Reason for Change: (Donald M. Jones, NJ)

To clarify the appropriate use of manufactured water heater relief valve drain tubes.

10.16.7 Vacuum Relief Valves for Water Heaters Subject to Siphonage

a. Where water distribution piping can siphon water from a water heater and cause dry-firing, a vacuum relief valve shall be installed on the cold water inlet piping to the water heater.

b. Vacuum relief valves shall comply with ANSI Z21.22/CSA 4.4 and be rated for not less than ~~210°F~~ 200 psig and 250°F.

c. Vacuum relief valves shall be installed at an elevation above the top of the water heater tank, downstream of the shutoff valve.

~~d. Vacuum relief valves shall be installed in the vertical, upright position unless otherwise permitted by the manufacturer's instructions.~~

~~e. Vacuum relief valves size shall be 3/4" minimum nominal pipe size. EXCEPTION: Where water heater inlet piping is smaller than 3/4" nominal pipe size, 1/2" vacuum relief valves shall be required.~~

See Figure 10.16.7

Basis/Reason for Change: (NSPC Committee)

1. To delete unnecessary requirements for vacuum relief valves for water heaters.

2. The required flow capacity of 1/2" and 3/4" relief valves in ANSI Z21.22/CSA 4.4 are the same.

CHAPTER 11 SANITARY DRAINAGE SYSTEMS

11.4.3 DIVERSITY FACTORS

11.4 DRAINAGE FIXTURE UNITS (DFU)

11.4.3 Diversity Factors Reserved

~~In certain structures such as hospitals, laboratory buildings, and other special use or special occupancy buildings where the ratio of the number of plumbing fixtures to the number of occupants is proportionally more than required by Table 7.21.1 for Business Occupancy and in excess of 1,000 drainage fixture units, the Authority Having Jurisdiction may permit the use of a diversity factor for sizing drain branches, drain stacks, building drains, and building sewers. Comment: The Authority Having Jurisdiction may permit the use of a diversity factor in systems where the number of fixtures per person is higher than normal. A hospital is such an example where toilet facilities are provided in each patient room for the convenience of the patients. The load on the drainage system is created by the number of persons served, not by the number of plumbing fixtures that are installed.~~

Basis/Reason for Change: (NSPC Committee)

This Section is being deleted because designing portions of plumbing systems that do not have the normal number of fixtures for the occupant load in the occupancy groups for the building classifications in Section 7.21 and Table 7.21.1 requires detailed study of the occupancy and piping system layout by the plumbing system designer. It affects the sizing of portions of the water supply piping as well as the drainage piping. Diversity factors will vary for different portions of the piping systems and may reduce some pipe sizes. The Authority Having Jurisdiction should be advised when portions of a plumbing system vary from the normal plumbing code requirements.

CHAPTER 11 SANITARY DRAINAGE SYSTEMS

11.7 Sewage Pumping

11.7.8 Discharge Piping

d. Discharge piping shall be

9. CSA B137.6, SDR 11

11.12 Battery-Vented Drain Piping (NSPC Committee)

Drain piping for fixtures that are battery vented shall comply with the requirements of Section 12.13 for venting.

Basis/Reason for Change:

Battery venting fixtures requires coordination of the drain and the vent piping.

CHAPTER 12 VENTS AND VENTING (No Changes)

CHAPTER 13 STORM WATER DRAINAGE

13.8 SIZING FOR CONTINUOUS OR INTERMITTANT FLOWS

Continuous or intermittent flows from a sump pump, air conditioning condensate drain, or other approved discharge into a storm drainage system shall be determined in gallons per minute flow. ~~Air conditioning condensate drainage shall be based on not less than 0.006 gpm/ton of cooling capacity.~~ Such flow shall be added to the stormwater load on the storm drainage system, which shall also be determined on the basis of gallons per minute according to Section A-3 and Table A-1 in Appendix A.

Basis/Reason for Change: (NSPC Committee)

1. Proposed changes to Section 9.4.3 for air conditioning condensate makes including the gpm/ton of cooling capacity unnecessary in Section 13.8. The gpm/ton in **Section 9.4.3 is increased to 0.04 from 0.006.**

CHAPTER 14 SPECIAL REQUIREMENTS FOR HEALTH CARE FACILITIES (No Changes)

CHAPTER 15 TESTS AND MAINTENANCE

Chapter 15

15.6 METHODS OF TESTING WATER SUPPLY SYSTEMS

c. Analog or mechanical gauges used for testing shall have a pressure range not more than three times the test pressure of the system.

Basis/Reason for Change: (Donald M. Jones)

To establish realistic parameters for test gauges This is accepted normal practice, and other model codes limit the maximum pressure of the test gauge and/or establish test gauge increments. (Ideally, the test gauge should not be greater than twice the test pressure, but some view this as too restrictive) Where the overall pressure range of the gauge is too large, it is difficult to determine if the system is holding test pressure. A loss in system test pressure will be detectable with a visible reduction in pressure on the gauge.

Appendix G

~~Green Plumbing and Mechanical Code Supplement~~

WE STAND EXCERPTS

Water Efficiency and Sanitation Standard for the Built Environment

Delete the entire “Green Plumbing and Mechanical Code Supplement” and substitute it with an new text from the “2017 WE Stand: Water Efficiency and Sanitation Standard for the Built Environment.”

The Green Plumbing and Mechanical Code Supplement **was updated and renamed** WE Stand.

Basis/Reason for Change: (Kevin Tindall, NJ)

(ENTIRE APPENDIX G Changed to the new referenced compliance requirement.)

2017 ICC ANSI A117.1



ANSI A117.1-2017 web link:

[2017 ICC A117.1 Accessible and Usable Buildings and Facilities | ICC Digital Codes \(iccsafe.org\)](http://2017 ICC A117.1 Accessible and Usable Buildings and Facilities | ICC Digital Codes (iccsafe.org))

ANSI A117.1-2017: Accessible and Usable Buildings:

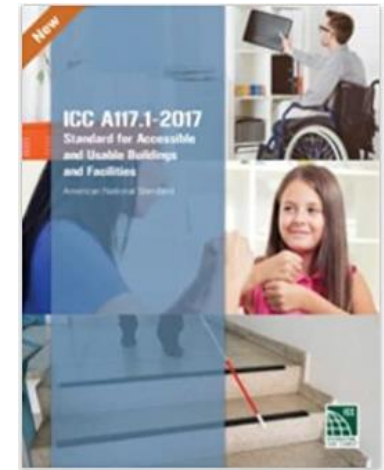
[ANSI A117.1 \[Current Version\] Accessible & Usable Buildings - ANSI Blog](#)

Changes to ICC/ANSI A117.1-2017

As the latest revision of the standard for accessible and usable buildings and facilities, ICC A117.1-2017 has undergone several changes that differentiate it from the previous editions. Many of these serve to expand the reach of the document and address the problems or needs that arose during the revision process.

Notable alterations to the standard revision include the addition of:

- Enhanced dimensions for clear floor spaces and turning spaces, introduced in response to technical data on the space needed by persons using scooters and some types of motorized wheelchairs and applicable only to new buildings and facilities
- Exterior routes
- Curb cuts
- Blended transitions
- Clarity for detectable warnings
- Passenger drop offs and parking requirements coordinated with the Public Rights of Way Guidelines
- Acoustic standards for classrooms
- Features allowing for better communication for persons using sign language
- Provisions that address the recharging of wheelchairs in hotels
- Access to gaming machines and tables
- **Provisions for water bottle filling stations**



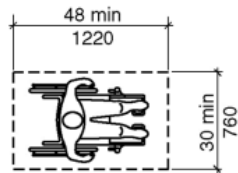
There is also an [errata document](#) to this standard, ICC A117.1-2017: Errata – Accessible and Usable Buildings and Facilities, which you can download free from the ANSI Webstore.

Revisions Incorporate:

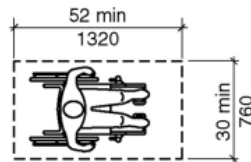
- The comprehensive “Study on Anthropometry of Wheeled Mobility”
<https://www.corada.com/documents/anthropometry-of-WhM-project/whole-document#:~:text=Anthropometry%20is%20the%20study%20of%20human%20body%20characteristics,requirements%20based%20on%20the%20anthropometry%20of%20WhMD%20users.>
- Sponsored by the US Access Board
- Including persons using manual wheelchairs, motorized wheelchairs & scooters

Wheelchair space

Existing – 48”

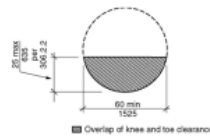


New – 52”



Turning space

Existing – 60”



New – 67”



- These changes impact and cause differences in TURNING SPACE AND TURNING SPACE OVERLAP as well as “Stall options and Partitions”

IAPMO – Summary of Substantive Changes (2009 ICC A117.1 to 2017 ICC A117.1) - [Chapter 6, Plumbing Elements and Facilities Microsoft Word - Summary of Changes - ICC A117.1 Chapter 6, \(2009-2017\).docx \(iapmoes.org\)](#)

NJUCC Responsibility Compliance has may duel responsibilities for Building and Plumbing within these new compliance areas.
https://www.nj.gov/dca/divisions/codes/codreg/pdf_regs/njac_5_23_3.pdf

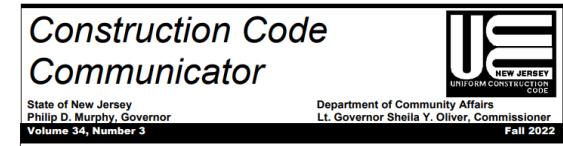
Significant Changes to the ICC/A117.1 2017 (ICC PowerPoint – PDF)

[Microsoft PowerPoint - Part 2 Significant Changes in 2017 ANSI and Housing Issues old pwrpt version.ppt \[Compatibility Mode\] \(cohenhilberry.com\)](#)
[Microsoft PowerPoint - Full day version 2017 A117 Significant Changes.pptx \(pennboc.org\)](#)

The NJDCA Fall 2022 Construction Code Communicator contains a 2021 Barrier Free Code article titled **“Accessibility and Type A Dwelling Units – 2021”** which deals with the 2021 IBC – Chapter 11 as well as GRACE PERIOD” explanation for this latest code adoption cycle.

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.pdf (Page 6 through 9)

Accessible and Type A Dwelling Units – 2021



How many Type A dwellings units are required in a building with four or more dwelling units? What features may be adaptable within the Type A dwelling unit? These questions continue to be asked of the Code Assistance Unit. Let me take this opportunity to straighten out the requirements for accessible and Type A dwelling units. New code, same (or nearly the same) code references With the adoption of the 2021 International Building Code (IBC), Chapter 11 became the Barrier Free Subcode. The previous requirements at N.J.A.C. 5:23-7.1 through 7.15 were incorporated into N.J.A.C. 5:23-3.14 to integrate New Jersey’s accessibility requirements into Chapter 11 of the 2021 IBC (minus the recreation portions remaining in NJAC 5:23-7.16 through 7.32). This remains the same for the 2021 IBC, and even the ICC A117.1 stays the same, the 2017 edition (A117.1-2017). Note, in the 2021 IBC, Section 1102 Compliance, is where you’ll find the NJ amendments to the A117.1-2017.

What is the difference between accessible and Type A? **(reference the full CCC article)**

What features in the kitchen may be adaptable in a Type A dwelling unit? **(reference the full CCC article)**

1. Adaptable work surface:
2. Kitchen cabinets:
3. Kitchen sink:
4. Can a microwave be mounted at standard height (e.g., over a range?)

What features in the bathroom may be adaptable in a Type A dwelling unit? **(reference the full CCC article)**

Maneuvering Space at Doors **(reference the full CCC article)**

** Example of application to a typical Condo/Apartment building **(reference the full CCC article)**

Source: Adam Matthews, Code Assistance Unit (609) 984-7609

2021 IRC web link: (Chapter 11)

[2021 International Residential Code \(IRC\) | ICC Digital Codes \(iccsafe.org\)](https://www.iccsafe.org/2021-international-residential-code-irc/)



2021 IECC (International Energy Conservation Code) web link:

[2021 International Energy Conservation Code \(IECC\) | ICC Digital Codes \(iccsafe.org\)](https://www.iccsafe.org/2021-international-energy-conservation-code-iecc/)



Major Changes to the 2021 Residential IECC

[Major Changes to the 2021 Residential IECC - The EnergyLogic, Inc.](#)

N1101.7 (R301.1) Climate Zones

(ICC updated climate zones for approx. 10% w/ most assigned warmer climate zone.)


Mercer was previously a 5A Climate Zone in 2018 and in 2021 is a 4A Climate Zone

N1101.14 (R401.3) Certificate (Mandatory)

Expanded section to include photovoltaic, ERI and the code addition which the structure was permitted under.

~~N1103.3.3 (R403.3.3)~~ N1103.3.5 (R403.3.5) Duct testing (Mandatory).

Ducts shall be pressure tested in accordance with ANSI/RESNET/ICC 380 or ASTM E1554 to determine air leakage by one of the following methods:

Energy Efficiency Certificate				
				
Insulation rating	R-Value		R-Value	
Ceiling/Roof	_____		Floor/Foundation	_____
Wall	_____		Ductwork	_____
Glass & door rating	U-Factor	SHGC	U-Factor	SHGC
Window	_____	_____	_____	_____
Door	_____	_____	_____	_____
Heating & cooling equipment		Efficiency		
Heating system: _____		_____		
Cooling system: _____		_____		
Water heater: _____		_____		
Building air leakage and duct test results				
Building air leakage	_____	Name of tester	_____	
Duct test	_____	Name of tester	_____	
Photovoltaic (PV) panel system				
Array capacity	_____	Panel tilt	_____	
Inverter efficiency	_____	Orientation	_____	
Energy Rating Index (ERI)				
ERI w/o on-site generation	_____	ERI with on-site generation	_____	
Additional energy efficiency option used: _____				
Name: _____		Date: _____		

Sample energy certificate.

N1103.6.2 (R403.6.2) Whole-house dwelling mechanical ventilation system fan efficacy. Fans used to provide whole-house dwelling mechanical ventilation shall meet the efficacy requirements of ~~Table N1103.6.1~~ N1103.6.2 at one or more rating points. Fans shall be tested in accordance with HVI 916 and listed. The airflow.....

N1103.6.3 (R403.6.3) Testing. Mechanical ventilation systems shall be tested and verified to provide.....Where required by the building official, testing shall be conducted by an approved third party.

SECTION N1108 (R408)

ADDITIONAL EFFICIENCY PACKAGE OPTIONS

N1108.1 (R408.1) Scope. This section establishes additional efficiency package options to achieve additional energy efficiency in accordance with Section N1101.13.5.

N1108.2 (R408.2) Additional efficiency package options.

N1108.2.1 (R408.2.1) Enhanced envelope performance option.

N1108.2.2 (R408.2.2) More efficient HVAC equipment performance option.

N1108.2.3 (R408.2.3) Reduced energy use in service water-heating option.

N1108.2.4 (R408.2.4) More efficient duct thermal distribution system option.

N1108.2.5 (R408.2.5) Improved air sealing and efficient ventilation system option.

The NJDCA Fall 2022 Construction Code Communicator articles includes and article titled **“Energy Subcode Updates for the 2021 Codes”** which provides an explanation and guidance regarding the International Energy Conservation Code/2021 (IECC/2021) and the ASHRAE 90.1-2019 (ASHRAE/2019) including the application compliance of each code.

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.pdf (Page 3 and 4)

*Construction Code
Communicator*



State of New Jersey
Philip D. Murphy, Governor
Volume 34, Number 3

Department of Community Affairs
Lt. Governor Sheila Y. Oliver, Commissioner
Fall 2022

- The big changes for the 2021 IECC-R are some increased R-values in the thermal envelope (ceiling insulation), air barrier testing (required along with checklist), duct testing (regardless of where located) and an additional energy efficiency package (choice of five packages).

Energy Subcode Updates for the 2021 Codes

Another model code adoption, another energy code. In this case, the International Energy Conservation Code/2021 (IECC/2021) and the ASHRAE 90.1-2019 (ASHRAE/2019), adopted September 6, 2022, at N.J.A.C. 5:23-3.18, the Energy Subcode. And why two codes you may ask? Because low-rise residential buildings (i.e., IECC-R – residential portion of the IECC) typically operate completely different than all other. So, let's define the codes per building type:

Low-rise residential buildings are defined as one- and two-family dwellings or multiple-family buildings three stories or less in height. Compliance must be in accordance the Energy Subcode and the IECC-R, which parallels Chapter 11 of the International Residential Code (IRC-N). For purposes of this article, IECC-R references will be made.

Commercial buildings are defined as all buildings other than low-rise residential buildings. Compliance must be in accordance with the Energy Subcode and ASHRAE Standard 90.1; do not use the commercial portion of the International Energy Conservation Code (IECC-C) as it is deleted per N.J.A.C. 5:23-3.18.

The very basic notion of the energy subcode is, if thou heats it (or cools it), thou that insulate it! There are some caveats to that in the ASHRAE/2019 (read: electrical) but for this article, we will focus on the residential side. And remember, this is for new construction and additions, but rehabilitation projects start with N.J.A.C. 5:23-6 and apply energy subcode provisions per scope.

I mentioned two codes (well, three as you can see from above). The Energy Subcode separates the State into two climates zones too, per county, and are as below. Note that Mercer is no longer Zone 5A, it's 4A... climate change?

Zone 4A – Atlantic, Burlington, Camden, Cape May, Cumberland, Essex, Gloucester, Hudson, Mercer, Middlesex, Monmouth, Ocean, Salem and Union;

Zone 5A – Bergen, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren.

The big changes for the 2021 IECC-R are some increased R-values in the thermal envelope (ceiling insulation), air barrier testing (required along with checklist), duct testing (regardless of where located) and an additional energy efficiency package (choice of five packages).

(Continued on next page)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2022.pdf (Page 3 and 4)

Fall CCC Article (Continued) - Energy Subcode Updates for the 2021 Codes

Compliance remains typical with hand calculations, a prescriptive package, REScheck web, Clean Energy Program (formerly known as Energy Star) or other above code programs.

Table R402.1.3, Insulation and Fenestration Requirements by Component, remains the typical wood-framed wall construction baseline for R-values and U-factors, which also equals the prescriptive package per zone. This also is the, so to say, starting point for those that would like to use REScheck web, which can be accessed at <http://www.energycodes.gov>.

Construction Code Communicator

State of New Jersey
Philip D. Murphy, Governor
Volume 34, Number 3

Department of Community Affairs
Lt. Governor Sheila Y. Oliver, Commissioner
Fall 2022



INSULATION & FENESTRATION REQUIREMENTS BY COMPONENT ^a		
Component / Climate Zone	4A	5A
Fenestration U-Factor ^b	0.30	0.30
Skylight U-Factor ^b	0.55	0.55
Glazed Fenestration SHGC ^b	0.40	0.40
Ceiling R-Value	60	60
Wood Frame Wall R-Value ^g	30 or 20+5ci ^h or 13+10ci ^h or 0+20ci ^h	30 or 20+5ci ^h or 13+10ci ^h or 0+20ci ^h
Mass Wall R-Value ^h	8/13	13/17
Floor R-Value	19	30
Basement Wall R-Value ^{c, g}	10ci or 13	15ci or 19 or 13+5ci
Slab R-Value & Depth ^d	10ci, 4 ft	10ci, 4 ft
Crawl Space Wall R-Value ^{c, g}	10ci or 13	15ci or 19 or 13+5ci
a. R-values are minimums. U-factors and SHGC are maximums. Where insulation is installed in a cavity that is less than the label or design thickness of the insulation, the installed R-value of the insulation shall be not less than the R-value specified in the table.		
b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestrations.		
c. "5ci or 13" means R-5 continuous insulation (ci) on the interior or exterior surface of the wall or R-13 cavity insulation on the interior side of the wall. "10ci or 13" means R-10 continuous insulation (ci) on the interior or exterior surface of the wall or R-13 cavity insulation on the interior side of the wall. "15ci or 19 or 13 + 5ci" means R-15 continuous insulation (ci) on the interior or exterior surface of the wall; or R-19 cavity insulation on the interior side of the wall, or R-13 cavity insulation on the interior of the wall in addition to R-5 continuous insulation on the interior or exterior surface of the wall.		
d. R-5 insulation shall be provided under the full slab area of a heated slab in addition to the required slab edge insulation R-value for slabs, as indicated in the table. The slab-edge insulation for heated slabs shall not be required to extend below the slab.		
g. The first value is cavity insulation; the second value is continuous insulation. Therefore, as an example, "13 + 5" means R-13 cavity insulation plus R-5 continuous insulation.		
h. Mass walls shall be in accordance with Section N1102.2.5. The second R-value applies where more than half of the insulation is on the interior of the mass wall.		

The above reflects the errata for Ch. 4 of 2021 IECC-R, <https://www.iccsafe.org/errata-central/>.

And I know the focus of this article was for low-rise residential but for those wondering about all other buildings (i.e., commercial), focus on Tables 5.5-4 and 5.5-5, as applicable, form the ASHRAE/2019 for your calculations. And yes, COMcheck web is still an option to demonstrate compliance; see <http://www.energycodes.gov>.

Source: Rob Austin Code Assistance/Code Development Unit (609) 984-7609

2021 IRC web link: (Part 5 – Mechanical)

[2021 International Residential Code \(IRC\) | ICC Digital Codes \(iccsafe.org\)](https://www.iccsafe.org)



R202 Definitions.

BALANCED VENTILATION SYSTEM. A ventilation system where the total supply airflow and total exhaust airflow are simultaneously within 10 percent of their average. The balanced ventilation system airflow is the average of the supply and exhaust airflows.

M1505.4.3 Mechanical ventilation rate.

(ICC Partial Summary Statement: The credit to reduce the required airflow rate for balanced ventilation is based on a simplified version derived from ASHRAE 62.2-2016 Equation 4.2.)

M1802.4 Blocked vent switch. Oil-fired appliances shall be equipped with a device that will stop burner operation in the event that the venting system is obstructed. Such device shall have a manual reset and shall be installed in accordance with the manufacturer's instructions. **(ICC Partial Summary Statement:** Blocked (obstructed) vent switches are not new, but the code has not required them until now.)

Section M2101

Hydronic Piping Systems Installation

Section M2103

Floor Heating Systems

Section M2105

Ground-Source Heat-Pump System Loop Piping

(ICC Partial Summary Statement: The general hydronic systems provisions have been expanded and updated to provide more detailed guidance for installations along w/ floor heating and geothermal changes/updates.)

2021 IRC web link: (Part 6 – Fuel Gas)

[2021 International Residential Code \(IRC\) | ICC Digital Codes \(iccsafe.org\)](https://www.iccsafe.org/)



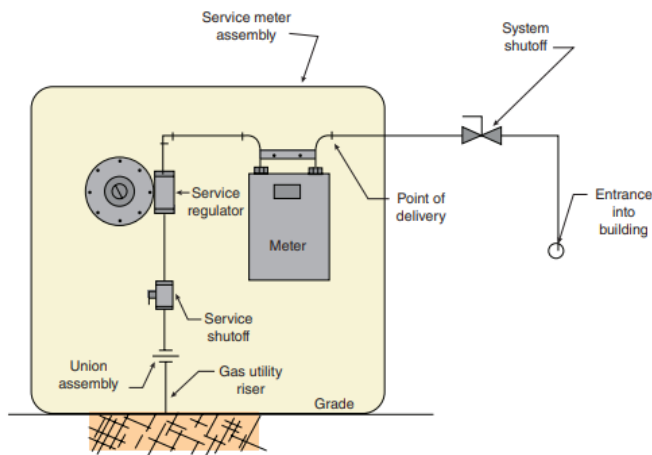
R202 Definitions.

Point of Delivery.Where a system shutoff valve is provided ~~at~~ after the outlet of the service meter assembly, such valve shall be considered to be downstream of the point of delivery.

Service Meter Assembly. The meter, valve, regulator, piping, fittings and equipment installed by the service gas supplier before the point of delivery.

System Shutoff. A valve installed after the point of delivery to shut off the entire piping system.

Service Shutoff. A valve, installed by the serving gas supplier between the ~~service meter or~~ source of supply and the ~~customer piping system~~ point of delivery, to shut off the entire piping system.



Service meter assembly and point of delivery.

ICC Explanatory Detail and Partial Summary Statement: The new and revised definitions intend to clarify the transition from the gas utility company service to the portion of gas piping system regulated by the IRC.

G2415.5 (404.5) Fittings in concealed locations. Fittings installed in concealed locations shall be limited to the following types:

1. Threaded elbows, tees, and couplings, plugs and caps.

G2427.5.5.1 (503.5.6.1) Chimney lining. Chimneys shall be lined in accordance with NFPA 211.

<https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/Codes-and-Standards>

Exception: Where an existing chimney complies with Sections G2427.5.5 through G2427.5.5.3 and its sizing is in accordance with Section G2427.5.4, its continued use shall be allowed where the appliance vented by such chimney is replaced by an appliance of similar type, input rating and efficiency.

(ICC Partial Summary Statement: Previously, an existing unlined chimney could continue to be used when replacing the appliance vented by the chimney.....if similar in type, Btu/h input rating and thermal efficiency. However, this exception allowed a non code-compliant chimney to serve a new water heater installation, in conflict with a basic principle of the code, the appliance installation instructions and the appliance listing. Hardship, as recognized previously, is not a substitute for safety. The exception was considered outdated and unnecessary, and has been deleted from the code.

G2427.8 (503.8) Venting system termination location terminal clearances. The clearances for through-the-wall direct-vent and nondirect-vent terminals shall be in accordance with Table G2427.8 and Figure G2427.8. Exception: The clearances in Table G2427.8 shall not apply to the combustion air intake of a direct-vent appliance. **(ICC: Reformatting and Appendix C figure moved to this applicable code section.)**

G2439.5 (614.7) Makeup air. Installations exhausting more than 200 cfm (0.09 m³ /s) shall be provided with makeup air. ~~Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (645 mm²) for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.~~

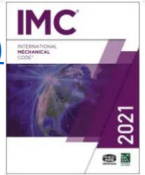
G2439.5.1 (614.7.1) Closet Installation. Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (645 mm²) for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.

G2447.2 (623.2) Prohibited location. (Commercial Cooking Appliances) Cooking appliances designed, tested, listed and labeled for use in commercial occupancies shall not be installed within dwelling units or within any area where domestic cooking operations occur.

Exceptions: 1. Appliances that are also listed as domestic cooking appliances.

2. Where the installation is designed by a licensed Professional Engineer, in compliance with the manufacturer's installation instructions.

(ICC Partial Summary Statement: Appliance manufacturers currently offer many commercial style appliances that are dual listed as both commercial and household appliances.)



2021 IMC web link: (International Mechanical Code) [2021 International Mechanical Code \(IMC\) | ICC Digital Codes \(iccsafe.org\)](https://www.iccsafe.org)

401.4 Intake opening location. Air intake openings shall comply with all of the following:

3. Intake openings shall be located not less than 3 feet (914 mm) below contaminant sources where such sources are located within 10 feet (3048 mm) of the opening. Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions.

502.20 Manicure and pedicure stations.

502.20.1 Operation. The exhaust system for manicure and pedicure stations shall have controls that operate the system continuously when the space is occupied.

504.4.1 Clothes Dryer Termination location. Exhaust duct terminations shall be in accordance with the dryer manufacturer's installation instructions. Where the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings including openings in ventilated soffits.

514.2 Prohibited applications. Energy recovery ventilation systems shall not be used in the following system:

4. Commercial kitchen exhaust systems serving Type I ~~or Type II~~ hoods.

602.2.1.8 Pipe and duct insulation within plenums.....(last sentence added)...Pipe and duct insulation shall not be used to reduce the maximum flame spread and smoke-developed indices except where the pipe or duct and its related insulation, coatings and adhesives are tested as a composite assembly in accordance with Section 602.2.1.7.

801.21 Blocked vent switch. Oil-fired appliances shall be equipped with a device that will stop burner operation in the event that the venting system is obstructed. Such device shall have a manual reset, and shall be installed in accordance with the manufacturer's instructions.

SECTION 929 - UNVENTED ALCOHOL FUEL-BURNING DECORATIVE APPLIANCES (new section)

SECTION 1107 REFRIGERENT PIPING MATERIAL (new section)

2021 IFGC web link: (International Fuel Gas Code)

[2021 International Fuel Gas Code \(IFGC\) | ICC Digital Codes \(iccsafe.org\)](https://iccsafe.org)



SEE SLIDE 45 (Same as IRC change/clarification) - Point of Delivery.Where a system shutoff valve is provided ~~at~~ after the outlet of the service meter assembly, such valve shall be considered to be downstream of the point of delivery.

307.2 Fuel-burning appliances. Added last sentence.... The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary drain or to the secondary drain.

Press-Connect Joint

402.7 Maximum operating pressure. The maximum operating pressure for piping systems located inside buildings shall not exceed 5 pounds per square inch gauge (psig) (34 kPa gauge) except where one or more of the following conditions are met:
2. The piping is joined by fittings listed to ANSI LC-4/CSA 6.32 and installed in accordance with the manufacturer's instructions.

SEE SLIDE 46-47 - Same as IRC change/clarification) for the following:

403.8.3 Threaded joint sealing.

404.5 Fittings in concealed locations.

503.5.6.1 Chimney lining.

503.8 Venting system termination location terminal clearances.

614.7 Makeup air. and 614.7.1 Closet Installation.

623.2 Prohibited location. (Commercial Cooking Appliances)

503.10.7 Connector junctions. Where vent connectors are joined together, the connection shall be made with a tee or wye fitting.

618.6 Furnace plenums and air ducts. Added last sentence..... Return air shall not be taken from the mechanical room containing the furnace.

CRACKERBARREL 2022

What every Plumbing/Mechanical Official needs to know - CCC Highlights

1. Construction Code Communicator (CCC) - <https://www.nj.gov/dca/divisions/codes/resources/ccc.html>
(Upper right side has an index listing all previous Construction Code Communicator topics/articles!)

2. Construction Permit Application Packet & Related Forms
<http://www.nj.gov/dca/divisions/codes/resources/constructionpermitforms.html>

3. Bulletin 98-1 (REHAB SUBCODE MATRIX)
https://www.nj.gov/dca/divisions/codes/publications/pdf_bulletins/b_98_1.pdf

4. When to use the Mechanical Technical Section (Page 15)
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2019.pdf (Fall 2019)

[PLUMBING OR MECHANICAL TECH SHEET CHART.pdf \(rumsonnj.gov\)](#) - [Decoder](#)
[Mechanical-vs-Plumbing-Mailout \(eastbrunswick.org\)](#) [E. Brunswick 1 page form.](#)

5. Mechanical Inspection Technical Section (page 5) – Licenses and proper sign-off of Mechanical tech sheets
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Spr_2022.pdf

6. Deferred Submittals – Review of “Other” Documents (page 9)
NJ Licensed HVACR Contractor and Electrical Work: Article Revision (page 1)
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Spr_2021.pdf

7. Agency Classifications Based on Structure (Fall 2016 CCC) - page 6
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall%202016.pdf

8. License Check (Spring 2019 CCC) - Page 6 and 7
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Spr_2019.pdf

9. HVACR Update and the Creation of the Board for Master Hearth Specialists (Fall 2020) – Page 7
https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2020.pdf



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10. Winter 2018 – Permit Requirements – Ordinary Maintenance and Minor Work Updated (page 2)

Winter 2018 – Permits are Not Required for Basement Drains – Updated (page 6)

Winter 2018 – Garden-Type Utility Sheds and Similar Structures – Clarification – Update (page 12)

Winter 2018 – Finishing basements in Existing Detached Single Family Homes (page 15)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Winter_2018.pdf

11. Spring 2019 - Installation of Chimney Liners in Existing Buildings (page 18)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Spr_2019.pdf

12. Protection of Adjoining Property and Street Lot Lines for One- and Two-Family Dwellings (page 7 and 8)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2020.pdf (Fall 2020)

13. Swimming Pools & Spas - Plan Review & Inspections (page 7; 2018 International Swimming Pool and Spa Code - ISPSC)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Winter_2019.pdf (Winter 2019)

14. Pressure Reducing Valve (PRV) Replacements (page 9)

Water Heater Replacements and The Mechanical Technical Section (page 12)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2019.pdf (Fall 2019)

15. Single-Family Detached Home – FAQs (page 6)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Smr_2019.pdf (Summer 2019)

16. Installation of Chimney Liners in an Existing Building (page 18)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Spr_2019.pdf (Spring 2019)

17. Replacement of a Water Heater and the Plumbing Subcode Technical Section (page 3)

NJ Licensed HVACR Contractor and Electrical Work (page 14)

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Fall_2017.pdf (Fall 2017)

i. The heating or cooling capacity of each piece of equipment is 25 tons or less; ii. The voltage of the system is 240 volts or less; and iii. The connection of the wiring is performed according to all relevant provisions in the Uniform Construction Code.”

18. HVACR Contractors and Electrical Work: What are the Rules? (Page 15) – **Newer Version of #17 above**

https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/CCC_Smr_2021.pdf (Summer 2021)