UCC Update: 2021 ICC Code Adoption

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Review and Advisory Council (RAC)

- The Uniform Construction Code (UCC) Review and Advisory Council were established by the Pennsylvania Construction Code Act (PCCA). The Council consists of 21 members, with appointments made by the Governor and the General Assembly.
- The members represent industry sectors that participate in the various aspects relating to building - including building component design, construction, building code enforcement and local government representation.

Review and Advisory Council (RAC)

- The Council is charged with making recommendations to the Governor, the General Assembly and Labor & Industry regarding proposed changes to the PCCA.
- The Council is also charged with reviewing the most recent triennial building code updates published by the International Code Council (ICC).

Codes

- International Building Code (IBC)
- International Energy Conservation Code (IECC)
- International Existing Building Code (IEBC)
- International Fire Code (IFC) (By reference only!)
- International Fuel Gas Code (IFGC)
- International Mechanical Code (IMC)
- ICC Performance Code for Buildings and Facilities (ICCPC)
- International Plumbing Code (IPC)
- International Residential Code for One- and Two-Family Dwellings (IRC)
- International Wildland-Urban Interface Code (IWUIC)
- International Swimming Pool and Spa Code (ISPSC)

Technical Advisory Committee (TAC)

- There shall be a technical advisory committee for each of the codes included in the Uniform Construction Code and specified in 34 Pa. Code § 403.21, and such other technical advisory committees as the council deems necessary to facilitate its review.
- Each technical advisory committee shall be limited to a maximum of 12 members.
- The chair of the council shall appoint a council member to chair each technical advisory committee. If more than four council members seek appointment to a technical advisory committee, the chair of the council shall appoint four of the council members seeking appointment to serve and the remaining council members seeking appointment shall serve only if additional positions on the technical advisory committee remain after selection of the technical advisory committee members pursuant to subparagraph.

Technical Advisory Committee (TAC)

- The department shall publish a notice seeking participation in the technical advisory committees.
- The chair of the council shall seek to ensure diversity of interests on each technical advisory committee. Technical advisory committee members shall be selected by the chair of the council from among the interested persons identified so as to ensure that the technical advisory committee as a whole has, at minimum, representation from affected contractor associations, affected building trade organizations, the code enforcement community, the design professional community and other relevant industries.

Meetings

- Future meeting dates can be found below, and agenda topics will be added once available, usually 1-2 weeks prior to the meeting date. Because of the pandemic conditions, all Council meetings will be held virtually until further notice.

- To join the Zoom meeting, click on this link: https://zoom.us/j/99121809216?pwd=aDlwUXdpay8yWGpWWjZSMHZWM3ErZz09 Opens In A New Window

- Meeting ID: 991 2180 9216
- Passcode: 170867
- One tap mobile: 13017158592,99121809216#,0#,170867#

2021 ICC Code REVIEW & Adoption process

- 1/31/2021 - ICC Officially Publishes 2021 ICC Family of Codes
- 11/15/2021 - Open Public Comment for Proposed Additional Sections
- 2/13/2022 - Close Public Comment for Proposed Additional Sections
- 9/8/2022 - Publish list of additional sections to be considered
- 10/13/2022 - RAC Initiates PA Review of 2021 ICC Family of Codes
- 1/4/2024 - RAC Receives Final Report From TAC Committee's
- 1/15/2024 - TAC Final Reports are Posted for Public Review

2021 ICC Code REVIEW & Adoption process

- 2/1/2024 - RAC First Public Hearing (EAST)
- 2/29/2024 - RAC Second Public Hearing (Harrisburg)
- 3/28/2024 - RAC Third Public Hearing (WEST)
- 4/18/2024 - RAC Meeting to Deliberate
- 5/2/2024 - RAC Meeting to Deliberate
- 5/16/2024 - RAC Meeting to Deliberate
- 5/30/2024 - RAC Meeting to Deliberate
- 6/13/2024 - RAC Meeting to Deliberate
- 6/27/2024 - RAC Meeting to Deliberate

2021 ICC Code REVIEW & Adoption process

- 7/25/2024 - Draft Report Presented to the RAC
- 9/12/2024 -Final Report Approved by RAC
- 10/1/2024 – Deadline to Submit Final Report to PA DL&I
- ~~7/13/2025~~ – 2021 ICC Adopted Code Provisions go into effect (Sent to IRRC September 2025, IRRC Hearing October 2025, Go Live end of 2025)

“6 Month Lookback”

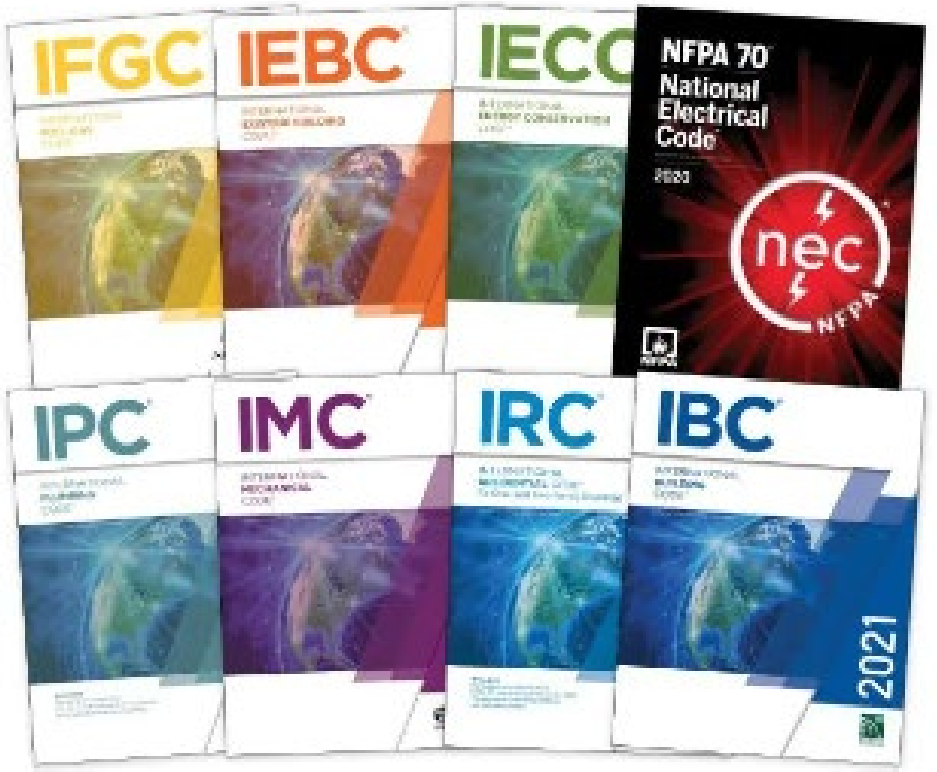
PA UCC

Section 304. Revised or successor codes.

(c) Prior permits, contracts and construction.

(4) Where a design or construction contract was signed before the effective date of regulations for a subsequent Uniform Construction Code or International Fuel Gas Code issued under this act, the permit may be issued under the Uniform Construction Code or International Fuel Gas Code in effect at the time the design or construction contract was signed if the permit is applied for within six months of the effective date of the regulation or the period specified by a municipal ordinance, whichever is less. (304 amended Oct. 25, 2017, P.L.356, No.36)

Codes with no modification

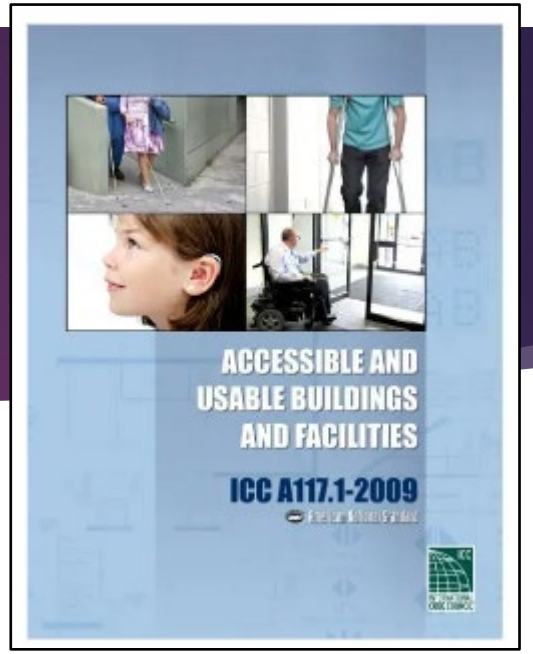


Adopted with no modification

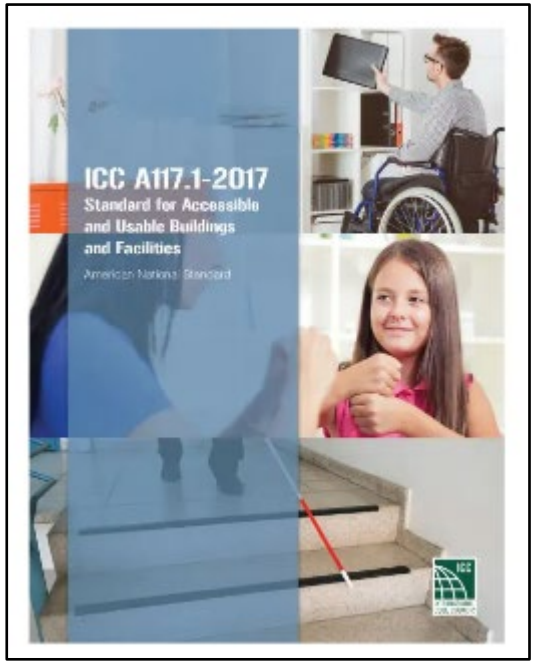
- 2021 International Wildland-Urban Interface Code (IWUIC)
- 2021 ICC Performance Code for Buildings and Facilities (ICCPC)
- 2021 International Fuel Gas Code (IFGC)
- 2021 International Mechanical Code (IMC)
- 2021 International Plumbing Code (IPC)
- 2021 International Fire Code (IFC) {Adopted by reference only}

Accessibility

Accessibility



- PA Lawsuit
- International building code – 2018 ed.
  - Chapter 11 - ACCESSIBILITY
  - Appendix E - SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS
  - ICC A117.1-09 (IBC)
- 2021 IPC, 2021 IEBC, 2021ISPSC
  - ICC A117.1-17



2021 ISPSC

2021 ISPSC - 108.2

Section [A] 108.2 Schedule of permit fees, was not modified as part of the current Pennsylvania 2021 ISPSC adoption and will remain as published in the 2018 ISPSC (Section [A] 105.6.2) as follows:

> [A] 105.6.2 Fee schedule. The fees for work shall be as indicated in the following schedule:
>
> [JURISDICTION TO INSERT APPROPRIATE SCHEDULE]

2021 ISPSC - 108.3

Section [A] 108.3 Permit valuations, was not adopted as part of the current Pennsylvania 2021 ISPSC adoption, and shall remain reserved.

2021 ISPSC - 108.4

Section [A] 108.4 Work commencing prior to permit issuance, was not modified as part of the current Pennsylvania 2021 ISPSC adoption and will remain as published in the 2018 ISPSC (Section [A] 105.6.1 Work commencing prior to permit issuance) as follows:

> [A] 105.6.1 Work commencing before permit issuance. Any person who commences any work on a system before obtaining the necessary permits shall be subject to a fee as indicated in the adopted fee schedule and would be in addition to the required permit fees.

2021 ISPSC - 108.5

Section [A] 108.5 Related fees, was not adopted as part of the current Pennsylvania 2021 ISPSC adoption and shall remain reserved.

2021 IBC

2021 IBC – Chapter 1

Chapter 1 Scope and Administration, was excluded from consideration in accordance with the requirements of the Act

2021 IBC - 426.1

Section [F] 426.1 General, was not modified as part of the current Pennsylvania 2021 IBC adoption, and will remain as published in the 2018 IBC as follows:

> [F] 426.1 General. The provisions of Sections 426.1.1 through 426.1.7 shall apply to buildings in which materials that produce combustible dusts are stored or handled. Buildings that store or handle combustible dusts shall comply with NFPA 652 and the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 654, NFPA 655 and NFPA 664 and the International Fire Code.

2021 IBC - 704.2

Section 704.2 Column protection, was not modified as part of the Pennsylvania 2018 IBC adoption, maintaining the 2015 IBC language. The national language was not modified in 2021 code, and as such, this language again was maintained in the current Pennsylvania 2021 IBC adoption as follows:

> 704.2 Column protection. Where columns are required to have protection to achieve a fire-resistance rating, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required fire-resistance rating. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

2021 IBC - 704.4.1

Section 704.4.1 Light-frame construction, was not modified as part of the Pennsylvania 2018 IBC adoption, maintaining the 2015 IBC language. The national language was not modified in 2021 code, and as such, this language again was maintained in the current Pennsylvania 2021 IBC adoption as follows:

> 704.4.1 Light-frame construction. Studs and boundary elements that are integral elements in load-bearing walls of light-frame construction shall be permitted to have required fire-resistance ratings provided by the membrane protection provided for the load-bearing wall.

2021 IBC - 803.3

Section 803.3 Heavy-timber exemption, was modified as part of the Pennsylvania 2018 IBC adoption. The national language was not modified in 2021 code, and as such, this language was maintained as modified in the 2018 adoption and in the current Pennsylvania 2021 IBC adoption as follows:

803.3 Heavy timber exemption. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3, exposed portions of building elements complying with the requirements for buildings of heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to interior finish requirements except in interior exit stairways, interior exit ramps, and exit passageways.

2021 IBC - 903.3.1.2 [1 of 2]

Section 903.3.1.2 NFPA 13R sprinkler systems, is adopted as follows:

[F] 903.3.1.2 NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies shall be permitted to be installed throughout in accordance with NFPA 13R where the Group R occupancy meets all of the following conditions:

1. Four stories or fewer above grade plane.
2. For other than R-2 occupancies, the floor level of the highest story is 30 feet (9144 mm) or less above the lowest level of fire department vehicle access.

2021 IBC - 903.3.1.2 [2 of 2]

For R-2 occupancies, the roof assembly is less than 45 feet (13716 mm) above the lowest level of fire department vehicle access. The height of the roof assembly shall be determined by measuring the distance from the lowest required fire vehicle access road surface adjacent to the building to the eave of the highest pitched roof, the intersection of the highest roof to the exterior wall, or the top of the highest parapet, whichever yields the greatest distance.

3. The floor level of the lowest story is 30 feet (9144 mm) or less below the lowest level of fire department vehicle access

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from grade plane.

2021 IBC – Chapter 11

Chapter 11 Accessibility, was excluded from consideration in accordance with the requirements of the Act

2021 IBC – Chapter 30

Chapter 30 Elevators and Conveying Systems, only the following sections/sub-sections were adopted:

- 3002.1 Hoistway enclosure protection.
- 3002.2 Number of elevator cars in a hoistway.
- 3002.4 Elevator car to accommodate ambulance stretcher.
- 3002.7 Common enclosure with stairway.
- 3004.2.1 Enclosure.
- 3004.3.1 Enclosure.
- 3005.4 Machine rooms, control rooms, machinery spaces, and control spaces.
- SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY OPENING PROTECTION
- SECTION 3007 FIRE SERVICE ACCESS ELEVATOR
- SECTION 3008 OCCUPANT EVACUATION ELEVATORS

2021 IEBC

2021 IEBC – Chapter 11

Chapter 11 Additions, was adopted without the inclusion of Section 1106 Storm shelters. This Section was not adopted/excluded as part of the 2018 Pennsylvania 2018 IEBC adoption. The national language was not modified in 2021 code, and as such, is again not adopted/excluded in the current Pennsylvania 2021 IEBC.

2021 IECC

2021 IECC Commercial - C105.2.6

Section C105.2.6 Final inspection, (Originally Section C104.2.6 Final inspection, [2015 IECC], 104.3 Final inspection, [2009 IECC]), was modified as part of the Pennsylvania 2015 IECC adoption, maintaining the 2009 IRC language. The national language was not modified in 2018 nor 2021 code, and as such, this language again was maintained in the current Pennsylvania 2021 IECC adoption as follows:

> C105.2.6 Final inspection. The building shall have a final inspection and not be occupied until approved.

2021 IECC Commercial - C402.5.5 [1 of 3]

Section C402.5.5 Rooms containing fuel-burning appliances, (Originally Section C402.5.3 Rooms containing fuel-burning appliances, [2018 IECC & 2015 IECC]) was modified as part of the Pennsylvania 2018 IECC adoption, maintaining both exceptions from the 2015 IECC. The national language was not modified in 2021 code, and as such, this language was maintained in the current Pennsylvania 2021 IECC adoption as follows:

2021 IECC Commercial - C402.5.5 [2 of 3]

C402.5.5 Rooms containing fuel-burning appliances. In Climate Zones 3 through 8, where combustion air is supplied through openings in an exterior wall to a room or space containing a space-conditioning fuel-burning appliance, one of the following shall apply:

1. The room or space containing the appliance shall be located outside of the building thermal envelope.
2. The room or space containing the appliance shall be enclosed and isolated from conditioned spaces inside the building thermal envelope. Such rooms shall comply with all of the following:
    - 2.1. The walls, floors and ceilings that separate the enclosed room or space from conditioned spaces shall be insulated to be not less than equivalent to the insulation requirement of below-grade walls as specified in Table C402.1.3 or C402.1.4.
    - 2.2. The walls, floors and ceilings that separate the enclosed room or space from conditioned spaces shall be sealed in accordance with Section C402.5.1.1.

2021 IECC Commercial - C402.5.5 [3 of 3]

2.3. The doors into the enclosed room or space shall be fully gasketed.

2.4. Water lines and ducts in the enclosed room or space shall be insulated in accordance with Section C403.

2.5. Where an air duct supplying combustion air to the enclosed room or space passes through conditioned space, the duct shall be insulated to an R-value of not less than R-8.

Exception:

1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.
2. Fireplaces and stoves complying with Sections 901 through 905 of the International Mechanical Code, and Section 2111.14 of the International Building Code.

2021 IECC Commercial - C405.11 [1 of 3]

Section C405.11 Automatic receptacle control, is adopted as follows:

C405.11 Automatic receptacle control. The following ~~shall~~ may have automatic receptacle control complying with Section C405.11.1:

1. At least 50 percent of all 125V, 15- and 20-amp receptacles installed in enclosed offices, conference rooms, rooms used primarily for copy or print functions, breakrooms, classrooms and individual workstations, including those installed in modular partitions and module office workstation systems.
2. At least 25 percent of branch circuit feeders installed for modular furniture not shown on the construction documents.

2021 IECC Commercial - C405.11 [2 of 3]

2.1. A scheduled basis using a time-of-day operated control device that turns receptacle power off at specific programmed times and can be programmed separately for each day of the week. The control device shall be configured to provide an independent schedule for each portion of the building of not more than 5,000 square feet (464.5 m2) and not more than one floor. The occupant shall be able to manually override an area for not more than 2 hours. Any individual override switch shall control the receptacles of not more than 5,000 feet (1524 m).

2.2. An occupant sensor control that shall turn off receptacles within 20 120 minutes of all occupants leaving a space.

2.3 .An automated signal from another control or alarm system that shall turn off receptacles within 20 120 minutes after determining that the area is unoccupied.

3. All controlled receptacles shall be permanently marked in accordance with NFPA 70 and be uniformly distributed throughout the space.
4. Plug-in devices shall not comply.

2021 IECC Commercial - C405.11 [3 of 3]

Exceptions: Automatic receptacle controls are not required for the following:

1. Receptacles specifically designated for equipment requiring continuous operation (24 hours per day, 365 days per year).

2. Spaces where an automatic control would endanger the safety or security of the room or building occupants.

3. Within a single modular office workstation, noncontrolled receptacles are permitted to be located more than 12 inches (304.8 mm), but not more than 72 inches (1828 mm) from the controlled receptacles serving that workstation.

2021 IECC Residential / 2021 IRC Energy - R202

Section R202 General definitions, was modified as part of the 2015 IECC adoption. The definition language that was added in Pennsylvania was not modified in the 2018 code nor 2021 code and, as such, will remain as published in the 2015 adoption as follows:

> Framing Factor. The fraction of the total building component area that is structural framing

2021 IECC Residential / 2021 IRC Energy - R401.2.5

Section R401.2.5 (N1101.13.5) Additional energy efficiency, was not adopted as part of the current Pennsylvania adoption of the 2021 IECC/IRC

2021 IECC Residential / 2021 IRC Energy – T R402.1.2 [1 of 2]

TABLE R402.1.2 (N1102.1.2) MAXIMUM ASSEMBLY U-FACTORS[a] AND FENESTRATION REQUIREMENTS , is adopted as follows:

TABLE R402.1.2 (R1102.1.2)
MAXIMUM ASSEMBLY *U*-FACTORS[a] AND FENESTRATION REQUIREMENTS

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC[d,e]	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR[b]	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
1	0.50	0.75	0.25	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	0.25	0.030	0.084	0.165	0.064	0.360	0.477
3	0.32	0.55	0.25	0.030	0.060	0.098	0.047	0.091	0.136
4 except Marine	0.30	0.55	0.40	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.30	0.55	NR	0.026	0.051	0.082	0.033	0.050	0.055
6	0.30	0.55	NR	0.026	0.045	0.060	0.033	0.050	0.055
7 and 8	0.30	0.55	NR	0.026	0.045	0.057	0.028	0.050	0.055

2021 IECC Residential / 2021 IRC Energy – T R402.1.3 [1 of 2]

Table R402.1.3 (N1102.1.3) INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT[a], is adopted as follows:

TABLE R402.1.3 (N1102.1.3)
INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,e]	CEILING R-FACTOR	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE[i]	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE & DEPTH	CRAWL SPACE[c] WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.32	0.55	0.25	38	20 or 13 + 5[h]	8/13	19	5/13[f]	0	5/13
4 except Marine	0.32	0.55	0.40	49	20 or 13 + 5[h]	8/13	19	10/13	10, 2ft	10/13
5 and Marine 4	0.30	0.55	NR	49	23 or 13 + 7.5[h] or 20 + 3.8[h]	13/17	30[g]	15/19	10, 4ft or 15, 3ft	15/19
6	0.30	0.55	NR	49	20 + 5[h] or 13 + 10[h]	15/20	30[g]	15/19	10, 4 ft	15/19
7 and 8	0.30	0.55	NR	49	20 + 5[h] or 13 + 10[h]	19/21	38[g]	15/19	10, 4 ft	15/19

2021 IECC Residential / 2021 IRC Energy - R403.3.5 [1 of 2]

Section R403.3.5 (N1103.3.5) Duct testing (Originally Section R403.3.3 (N1103.3.3) Duct testing, [2018 IECC/IRC]), was not modified as part of the Pennsylvania adoption of the 2021 IECC/IRC, and will remain as published in the 2018 IECC/IRC as follows:

> R403.3.5 (N1103.3.5) Duct testing (Mandatory). Ducts shall be pressure tested to determine air leakage by one of the following methods:
>
> 1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.

2021 IECC Residential / 2021 IRC Energy - R403.3.5 [2 of 2]

2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions:

1. A duct air-leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.

2. A duct air-leakage test shall not be required for ducts serving heat or energy recovery ventilators that are not integrated with ducts serving heating or cooling systems.

A written report of the results of the test shall be signed by the party conducting the test and provided to the building official.

2021 IECC Residential / 2021 IRC Energy - R403.3.6

Section R403.3.6 (N1103.3.6) Duct leakage (Originally Section R403.3.4 (N1103.3.4) Duct leakage, [2018 IECC/IRC]), was not modified as part of the Pennsylvania adoption of the 2021 IECC/IRC, and will remain as published in the 2018 IECC/IRC as follows:

R403.3.6 (N1103.3.6) Duct leakage (Prescriptive). The total leakage of the ducts, where measured in accordance with Section R403.3.5, shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m2) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3 cubic feet per minute (85 L/min) per 100 square feet (9.29 m2) of conditioned floor area.

2. Postconstruction test: Total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/ min) per 100 square feet (9.29 m2) of conditioned floor area.

2021 IECC Residential / 2021 IRC Energy - R403.3.7

Section R403.3.7 (N1103.3.7) Building cavities (Mandatory), (Originally Section R403.3.5 (N1103.3.5) Building cavities, [2015 and 2018 IECC/IRC]), was modified as part of the Pennsylvania 2015 IECC/IRC adoption. The national language was not modified in the 2018 IECC/IRC and the modified language was maintained in the Pennsylvanis 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R403.3.7 (N1103.3.7) Building cavities (Mandatory). Building framing cavities shall not be used as supply ducts.

2021 IECC Residential / 2021 IRC Energy - R403.5.1.1

Section R403.5.1.1 (N1103.5.1.1) Circulation systems, is adopted as follows:

R403.5.1.1 (N1103.5.1.1) Circulation systems. Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosyphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water. The controls shall limit the temperature of the water entering the cold water piping to not greater than 104°F (40°C).

Exception: Where the entire hot water piping system (both supply and return) are insulated with a minimum R3 insulation, the stated controls shall not be required.

2021 IECC Residential / 2021 IRC Energy - R404.1

Section R404.1 (N1104.1) Lighting equipment, was not modified as part of the current Pennsylvania 2021 IECC/IRC adoption and remains the 2018 IECC/IRC language as follows:

> R404.1 (N1104.1) Lighting equipment (Mandatory). Not less than 90 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

2021 IECC Residential / 2021 IRC Energy - R404.1.1

Section R404.1.1 (N1104.1.1) Exterior lighting, was not modified as part of the current Pennsylvania 2021 IECC/IRC adoption and remains the 2018 IECC/IRC language as follows:

> R404.1.1 (N1104.1.1) Lighting equipment (Mandatory). Fuel gas lighting systems shall not have continuously burning pilot lights.

2021 IECC Residential / 2021 IRC Energy - R404.1.1

Section R404.1.2 (N1104.1.2) Fuel gas lighting equipment, was not adopted as part of the current Pennsylvania 2021 IECC/IRC adoption.

2021 IECC Residential / 2021 IRC Energy - R404.2

Section R404.2 (N1104.2) Interior lighting controls, was not adopted as part of the current Pennsylvania 2021 IECC/IRC adoption.

2021 IECC Residential / 2021 IRC Energy - R404.3

Section R404.3 (N1104.3) Exterior lighting controls, was not adopted as part of the current Pennsylvania 2021 IECC/IRC adoption.

2021 IECC Residential / 2021 IRC Energy – T R405.2

TABLE R405.2 (N1105.2) REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE, was adopted as follows:

TABLE N1105.2 (R405.2)
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION[a]	TITLE
General	
~~N1101.13.5~~	~~Additional energy efficiency~~
N1101.14	Certificate
Building Thermal Envelope	
N1102.1.1	Vapor retarder
N1102.2.3	Eave baffle
N1102.2.4.1	Access hatches and doors
N1102.2.10.1	Crawl space wall insulation installation
N1102.4.1.1	Installation
N1102.4.1.2	Testing
N1102.5	Maximum fenestration *U*-factor and SHGC
Mechanical	
N1103.1	Controls
N1103.3, including N1103.3.1, except Sections N1103.3.2, N1103.3.3 and N1103.3.6	Ducts
N1103.4	Mechanical system piping insulation
N1103.5.1	Heated water circulation and temperature maintenance systems
N1103.5.3	Drain water heat recovery units
N1103.6	Mechanical ventilation
N1103.7	Equipment sizing and efficiency rating
N1103.8	Systems serving multiple dwelling units
N1103.9	Snow melt system controls
N1103.10	Energy consumption of pools and spas
N1103.11	Portable spas
N1103.12	Residential pools and permanent residential spas
Electrical Power and Lighting Systems	
N1104.1	Lighting equipment
N1104.2	Interior lighting controls

a. Reference to a code section includes all the relative subsections except as indicated in the table.

2021 IECC Residential / 2021 IRC Energy - R405.3.2 [1 of 2]

Section R405.3.2 (N1105.3.2) Compliance report, (Originally Section R405.4.2 (N1105.4.2) Compliance report, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R405.3.2 (N1105.3.2) Compliance report. Compliance software tools shall generate a report that documents that the proposed design complies with Section R405.4 (N1105.4). A compliance report on the proposed design shall be submitted with the application for the building permit. Upon completion of the building, a compliance report based on the as-built condition of the building shall be submitted to the code official before a certificate of occupancy is issued. Batch sampling of buildings to determine energy code compliance for all buildings in the batch shall be prohibited.

2021 IECC Residential / 2021 IRC Energy - R405.3.2 [2 of 2]

Compliance reports shall include information in accordance with Sections R405.4.2.1 (N1105.4.2.1) and R405.4.2.2 (N1105.4.2.2). Where the proposed design of a building could be built on different sites where the cardinal orientation of the building on each site is different, compliance of the proposed design for the purposes of the application for the building permit shall be based on the worst-case orientation, worst-case configuration, worst-case building air leakage and worst-case duct leakage. Such worst-case parameters shall be used as inputs to the compliance software for energy analysis.

2021 IECC Residential / 2021 IRC Energy - R405.3.2.1 [1 of 2]

Section R405.3.2.1 (N1105.3.2.1) Compliance report for permit application, (Originally Section R405.4.2.1 (N1105.4.2.1) Compliance report for permit application, [2018 IECC/IRC]), was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

R405.3.2.1 (N1105.3.2.1) Compliance report for permit application. A compliance report submitted with the application for building permit shall include the following:

1. Building street address, or other building site identification.

2. A statement indicating that the proposed design complies with Section R405.4 (N1105.4).

2021 IECC Residential / 2021 IRC Energy - R405.3.2.1 [2 of 2]

3. An inspection checklist documenting the building component characteristics of the proposed design as indicated in Table R405.4.2(1) (N1105.4.2(1)). The inspection checklist shall show results for both the standard reference design and the proposed design with user inputs to the compliance software to generate the results.

4. A site-specific energy analysis report that is in compliance with Section R405.4 (N1105.4).

5. The name of the individual performing the analysis and generating the report.

6. The name and version of the compliance software tool.

2021 IECC Residential / 2021 IRC Energy - R405.3.2.2 [1 of 2]

Section R405.3.2.2 (N1105.3.2.2) Compliance report for certificate of occupancy, is adopted as follows:

R405.3.2.2 (N1105.3.2.2) Compliance report for certificate of occupancy. A compliance report submitted for obtaining the certificate of occupancy shall include the following:

1. Building street address, or other building site identification.

2. Declaration of the total building performance path on the title page of the energy report and the title page of the building plans.

3. A statement, bearing the name of the individual performing the analysis and generating the report, indicating that the as-built building complies with Section R405.3 (N1105.3).

2021 IECC Residential / 2021 IRC Energy - R405.3.2.2 [2 of 2]

4. The name and version of the compliance software tool.

5. A site-specific energy analysis report that is in compliance with Section R405.3 (N1105.3).

6. A final confirmed certificate indicating compliance based on inspection, and a statement indicating that the confirmed rated design of the built home complies with Section R405.3 (N1105.3). The certificate shall report the energy features that were confirmed to be in the home, including component-level insulation R-values or U-factors; results from any required duct system and building envelope air leakage testing; and the type and rated efficiencies of the heating, cooling, mechanical ventilation and service water heating equipment installed.
7. Where on-site renewable energy systems have been installed, the certificate shall report the type and production size of the installed system.

2021 IECC Residential / 2021 IRC Energy – T R405.4.2(1) [1 of 4]

TABLE R405.4.2(1) (N1105.4.2(1)) SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS (Originally Table R405.5.2.1 (N1105.5.2(1)) SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS, [2018 IECC/IRC]), was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

TABLE R405.4.2(1) [N1105.4.2(1)]
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Above-grade walls	Type: mass where the proposed wall is a mass wall; otherwise wood frame.	As proposed
	Gross area: same as proposed.	As proposed
	U-factor: as specified in Table TABLE R402.1.2	As proposed
	Solar absorptance = 0.75.	As proposed
	Emittance = 0.90.	As proposed
Basement and crawl space walls	Type: same as proposed.	As proposed
	Gross area: same as proposed.	As proposed
	U-factor: as specified in TABLE R402.1.2 with the insulation layer on the interior side of the walls.	As proposed
Above-grade floors	Type: wood frame.	As proposed
	Gross area: same as proposed.	As proposed
	U-factor: as specified in TABLE R402.1.2	As proposed
Ceilings	Type: wood frame.	As proposed
	Gross area: same as proposed.	As proposed
	U-factor: as specified in TABLE R402.1.2	As proposed
Roofs	Type: composition shingle on wood sheathing.	As proposed
	Gross area: same as proposed.	As proposed
	Solar absorptance = 0.75.	As proposed
	Emittance = 0.90.	As proposed
Attics	Type: vented with an aperture of 1 ft^2 per 300 ft^2 of ceiling area.	As proposed
Foundations	Type: same as proposed.	As proposed
	Foundation wall area above and below grade and soil characteristics: same as proposed.	As proposed
Opaque doors	Area: 40 ft^2 .	As proposed
	Orientation: North.	As proposed
	U-factor: same as fenestration as specified in TABLE R402.1.2	As proposed
Vertical fenestration other than opaque doors	Total area[b] = (a) The proposed glazing area, where the proposed glazing area is less than 15 percent of the conditioned floor area. (b) 15 percent of the conditioned floor area, where the proposed glazing area is 15 percent or more of the conditioned floor area.	As proposed
	Orientation: equally distributed to four cardinal compass orientations (N, E, S & W).	As proposed
	U-factor: as specified in TABLE R402.1.2	As proposed
	SHGC: as specified in Table N1102.1.2 except for *climate zones* without an SHGC requirement, the SHGC shall be equal to 0.40.	As proposed
	Interior shade fraction: 0.92-(0.21 × SHGC for the standard reference design).	Interior shade fraction: 0.92-(0.21 × SHGC as proposed)
	External shading: none	As proposed
Skylights	None	As proposed
Thermally isolated sunrooms	None	As proposed

(continued)

TABLE R405.4.2(1)-[N1105.4.2(1)]-continued¶
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Air exchange rate	The air leakage rate at a pressure of 0.2 inch w.g. (50 Pa) shall be *Climate Zones* 1 and 2: 5 air changes per hour. *Climate Zones* 3 through 8: 3 air changes per hour. The mechanical ventilation rate shall be in addition to the air leakage rate and shall be the same as in the proposed design, but not greater than $0.01 \times CFA + 7.5 \times (N_{br} + 1)$ where: CFA = conditioned floor area, ft^2. N_{br} = number of bedrooms. Energy recovery shall not be assumed for mechanical ventilation.	The measured air exchange rate[a]. The mechanical ventilation rate[b] shall be in addition to the air leakage rate and shall be as proposed.
Mechanical ventilation	Where mechanical ventilation is not specified in the proposed design: None Where mechanical ventilation is specified in the proposed design, the annual vent fan energy use, in units of kWh/yr, shall equal $(1/e_f) \times [0.0876 \times CFA + 65.7 \times (N_{br}+1)]$ where: e_f = the minimum exhaust fan efficacy, as specified in Table R403.6.1, corresponding to a flow rate of $0.01 \times CFA + 7.5 \times (N_{br}+1)$ CFA = conditioned floor area, ft^2. N_{br} = number of bedrooms.	As proposed
Internal gains	IGain, in units of Btu/day per dwelling unit, shall equal $17,900 + 23.8 \times CFA + 4,104 \times N_{br}$ where: CFA = conditioned floor area, ft^2. N_{br} = number of bedrooms.	Same as standard reference design.
Internal mass	Internal mass for furniture and contents: 8 pounds per square foot of floor area.	Same as standard reference design, plus any additional mass specifically designed as a thermal storage element[c] but not integral to the building envelope or structure.
Structural mass	For masonry floor slabs: 80 percent of floor area covered by R-2 carpet and pad, and 20 percent of floor directly exposed to room air.	As proposed
	For masonry basement walls, as proposed, but with insulation as specified in TABLE R402.1.3¶ located on the interior side of the walls.	As proposed
	For other walls, ceilings, floors, and interior walls: wood frame construction.	As proposed
Heating systems[d,e]	For other than electric heating without a heat pump: as proposed. Where the proposed design utilizes electric heating without a heat pump, the standard reference design shall be an air source heat pump meeting the requirements of Section C403 of the IECC—Commercial Provisions. Capacity: sized in accordance with Section N1103.7.	As proposed
Cooling systems[d,f]	As proposed. Capacity: sized in accordance with Section N1103.7.	As proposed
Service water heating[d,e,f,g]	As proposed. Use: same as proposed design.	As proposed Use, in units of gal/day = $30 + (10 \times N_{br})$ where: N_{br} = number of bedrooms.

(continued)

TABLE R405.4.2(1)-[N1105.4.2(1)]-continued¶
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Thermal distribution systems	Duct insulation: in accordance with Section N1103.3.1. A thermal distribution system efficiency (DSE) of 0.88 shall be applied to both the heating and cooling system efficiencies for all systems other than tested duct systems. **Exception:** For nonducted heating and cooling systems that do not have a fan, the standard reference design thermal distribution system efficiency (DSE) shall be 1. For tested duct systems, the leakage rate shall be 4 cfm (113.3 L/min) per 100 ft² (9.29 m²) of *conditioned floor area* at a pressure of differential of 0.1 inch w.g. (25 Pa).	Duct insulation: as proposed. As tested or, where not tested, as specified in TABLE R405.4.2(2)¶
Thermostat	Type: Manual, cooling temperature setpoint = 75°F; Heating temperature setpoint = 72°F.	Same as standard reference design.

For SI: 1 square foot = 0.93 m², 1 British thermal unit = 1055 J, 1 pound per square foot = 4.88 kg/m², 1 gallon (US) = 3.785 L, °C = (°F-32)/1.8, 1 degree = 0.79 rad.

a. Where required by the *building official*, testing shall be conducted by an *approved* party. Hourly calculations as specified in the ASHRAE *Handbook of Fundamentals*, or the equivalent, shall be used to determine the energy loads resulting from infiltration.

b. The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with Equation 43 of 2001 ASHRAE *Handbook of Fundamentals*, page 26.24 and the "Whole-house Ventilation" provisions of 2001 ASHRAE *Handbook of Fundamentals*, page 26.19 for intermittent mechanical ventilation.

c. Thermal storage element shall mean a component that is not part of the floors, walls or ceilings that is part of a passive solar system, and that provides thermal storage such as enclosed water columns, rock beds, or phase-change containers. A thermal storage element shall be in the same room as fenestration that faces within 15 degrees (0.26 rad) of true south, or shall be connected to such a room with pipes or ducts that allow the element to be actively charged.

d. For a proposed design with multiple heating, cooling or water heating systems using different fuel types, the applicable standard reference design system capacities and fuel types shall be weighted in accordance with their respective loads as calculated by accepted engineering practice for each equipment and fuel type present.

e. For a proposed design without a proposed heating system, a heating system having the prevailing federal minimum efficiency shall be assumed for both the standard reference design and proposed design.

f. For a proposed design home without a proposed cooling system, an electric air conditioner having the prevailing federal minimum efficiency shall be assumed for both the standard reference design and the proposed design.

g. For a proposed design with a nonstorage-type water heater, a 40-gallon storage-type water heater having the prevailing federal minimum energy factor for the same fuel as the predominant heating fuel type shall be assumed. For a proposed design without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency for the same fuel as the predominant heating fuel type shall be assumed for both the proposed design and standard reference design.

h. For residences with conditioned basements, R-2 and R-4 residences, and for townhouses, the following formula shall be used to determine glazing area:

$AF = A_s \times FA \times F$

where:

AF = Total glazing area.
A_s = Standard reference design total glazing area.
FA = (Above-grade thermal boundary gross wall area)/(above-grade boundary wall area + 0.5 × below-grade boundary wall area).
F = (above-grade thermal boundary wall area)/(above-grade thermal boundary wall area + common wall area) or 0.56, whichever is greater.

and where:

Thermal boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions.
Above-grade thermal boundary wall is any thermal boundary wall component not in contact with soil.
Below-grade boundary wall is any thermal boundary wall in soil contact.
Common wall area is the area of walls shared with an adjoining dwelling unit. L and *CFA* are in the same units.

2021 IECC Residential / 2021 IRC Energy – T R406.2 [1 of 2]

TABLE R406.2 (N1106.2) REQUIREMENTS FOR ENERGY RATING INDEX, is adopted as follows:

TABLE N1106.2 (R406.2)
REQUIREMENTS FOR ENERGY RATING INDEX

SECTION[a]	TITLE
General	
~~N1101.13.5~~	~~Additional efficiency packages~~
N1101.14	Certificate
Building Thermal Envelope	
N1102.1.1	Vapor retarder
N1102.2.3	Eave baffle
N1102.2.4.1	Access hatches and doors
N1102.2.10.1	Crawl space wall insulation installation
N1102.4.1.1	Installation
N1102.4.1.2	Testing
Mechanical	
N1103.1	Controls
N1103.3 except Sections N1103.3.2, N1103.3.3 and N1103.3.6	Ducts
N1103.4	Mechanical system piping insulation
N1103.5.1	Heated water circulation and temperature maintenance systems
N1103.5.3	Drain water heat recovery units
N1103.6	Mechanical ventilation
N1103.7	Equipment sizing and efficiency rating
N1103.8	Systems serving multiple dwelling units
N1103.9	Snow melt system controls
N1103.10	Energy consumption of pools and spas
N1103.11	Portable spas
N1103.12	Residential pools and permanent residential spas
Electrical Power and Lighting Systems	
N1104.1	Lighting equipment
N1104.2	Interior lighting controls
N1106.3	Building thermal envelope

a. Reference to a code section includes all of the relative subsections except as indicated in the table.

2021 IECC Residential / 2021 IRC Energy - R406.3

Section R406.3 (N1106.3) Building thermal envelope, was not adopted as part of the Pennsylvania 2021 IECC/IRC adoption and is reserved

2021 IECC Residential / 2021 IRC Energy - R406.3.1

Section R406.3.1 (N1106.3.1) On-site renewables are not included, was not adopted as part of the Pennsylvania 2021 IECC/IRC adoption

2021 IECC Residential / 2021 IRC Energy - R406.3.2

Section R406.3.2 (N1106.3.2) On-site renewables are included, was not adopted as part of the Pennsylvania 2021 IECC/IRC adoption

2021 IECC Residential / 2021 IRC Energy - R406.4

Section R406.4 (N1106.4) Energy Rating Index, (Originally Section R406.3 (N1106.3) Energy Rating Index, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.4 (N1106.4) Energy rating index. The Energy Rating Index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the ERI reference design has an Index value of 100 and a residential building that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1 percent change in the total energy use of the rated design relative to the total energy use of the ERI reference design. The ERI shall consider all energy used in the residential building.

2021 IECC Residential / 2021 IRC Energy - R406.4.1

Section R406.4.1 (N1106.4.1) ERI referenced design, (Originally Section R406.3.1 (N1106.3.1) ERI referenced design, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.4.1 (N1106.4.1) ERI reference design. The ERI reference design shall be configured such that it meets the minimum requirements of the 2006 International Energy Conservation Code prescriptive requirements. The proposed residential building shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the ERI reference design.

2021 IECC Residential / 2021 IRC Energy - R406.7.1

Section R406.7.1 (N1106.7.1) Compliance software tools, (Originally Section R406.6.1 (N1106.6.1) Compliance software tools, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.7.1 (N1106.7.1) Compliance software tools. Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the code official.

2021 IECC Residential / 2021 IRC Energy - R406.8

Section R406.8 (N1106.8) Calculation software tools, (Originally Section R406.7 (N1106.7) Calculation software tools, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.8 (N1106.8) Calculation software tools. Calculation software, where used, shall be in accordance with Sections R406.8.1 (N1106.8.1) through R406.8.3 (N1106.8.3).

2021 IECC Residential / 2021 IRC Energy - R406.8.1 [1 of 2]

Section R406.8.1 (N1106.8.1) Minimum capabilities, (Originally Section R406.7.1 (N1106.7.1) Minimum capabilities, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

R406.7.1 (N1106.7.1) Minimum capabilities. Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3 (N1106.3), and shall include the following capabilities:

1. Computer generation of the ERI reference design using only the input for the rated design.

   The calculation procedure shall not allow the user to directly modify the building component characteristics of the ERI reference design.

2021 IECC Residential / 2021 IRC Energy - R406.8.1 [2 of 2]

2. Calculation of whole-building, as a single zone, sizing for the heating and cooling equipment in the ERI reference design residence in accordance with Section R403.7 (N1103.7).
3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.
4. Printed code official inspection checklist listing each of the rated design component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.

2021 IECC Residential / 2021 IRC Energy - R406.8.2

Section R406.8.2 (N1106.8.2) Specific approval, (Originally Section R406.7.2 (N1106.7.2) Specific approval, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.7.2 (N1106.7.2) Specific approval. Performance analysis tools meeting the applicable sections of Section R406 (N1106) shall be approved. Tools are permitted to be approved based on meeting a specified threshold for a jurisdiction. The code official shall approve tools for a specified application or limited scope.

2021 IECC Residential / 2021 IRC Energy - R406.8.3

Section R406.8.3 (N1106.8.3) Input values, (Originally Section R406.7.3 (N1106.7.3) Minimum capabilities, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and will remain as follows:

> R406.7.3 (N1106.7.3) Input values. When calculations require input values not specified by Sections R402 (N1102), R403 (N1103), R404 (N1104) and R405 (N1105), those input values shall be taken from an approved source.

2021 IECC Residential / 2021 IRC Energy - R406.7.5

Section R406.7.5 (N1106.7.5) Specific approval, (Originally Section R406.6.4 (N1106.6.4) Specific approval, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and is removed (redundant due to previous action and reorganization).

2021 IECC Residential / 2021 IRC Energy - R406.7.6

Section R406.7.6 (N1106.7.6) Input values, (Originally Section R406.6.5 (N1106.6.5) Input values, [2015 and 2018 IECC/IRC]), was not modified as part of the Pennsylvania 2018 IECC/IRC adoption. The language was not modified as part of the current Pennsylvania adoption of the 2021 IECC/IRC, and is removed (redundant due to previous action and reorganization).

2021 IECC Residential / 2021 IRC Energy - R408.1

Section R408.1 (N1108.1) Scope, is adopted as follows:

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

2021 IECC Residential / 2021 IRC Energy - R408.2

Section R408.2 (N1108.2) Additional efficiency package options, is adopted as follows:

> R408.2 (N1108.2) Additional efficiency package options. Additional efficiency package options for compliance with Section N1101.13.5 are set forth in Sections R408.2.1 (N1108.2.1) through R408.2.5 (N1108.2.5).

2021 IRC

2021 IRC – R301.1.4

Section R301.1.4 Intermodal shipping containers, is adopted as follows:

R301.1.4 Intermodal shipping containers. Intermodal shipping containers that are repurposed for use as buildings or structures shall be designed in accordance with the structural provisions in Section 3115 of the International Building Code. Prior to permitting, the applicant shall have the unit certified as free from contaminants by a qualified 3rd party inspector approved by the AHJ. Any penetrations beyond those permitted in Section 3115 of the International Building Code shall be certified by a Pennsylvania Registered Design Professional.

2021 IRC – R305.1 [1 of 2]

Section R305.1 Minimum height, is adopted as follows:

R305.1 Minimum height. Habitable space, hallways and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm). Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches (2032 mm).

Exceptions:

1. For rooms with sloped ceilings, the required floor area of the room shall have a ceiling height of not less than 5 feet (1524 mm) and not less than 50 percent of the required floor area shall have a ceiling height of not less than 7 feet (2134 mm).

2021 IRC – R305.1 [2 of 2]

2. The ceiling height above bathroom and toilet room fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a ceiling height of not less than 6 feet 8 inches (2032 mm) above an area of not less than 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.

3. Beams, girders, ducts or other obstructions in basements containing habitable space shall be permitted to project to within 6 feet 4 inches (1931 mm) of the finished floor.

4. Beams and girders spaced apart ~~not less than~~ a minimum of 36 inches (914 mm) in clear finished width between projections, and shall have a minimum clear ceiling height of 6 feet 6 inches (1981 mm) from the finished floor directly under the beam ~~shall project not more than 78 inches (1981 mm) from the finished floor~~.

2021 IRC – R310.1 [1 of 2]

Section R310.1 Emergency escape and rescue opening required, is adopted as follows:

R310.1 Emergency escape and rescue opening required. Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.

Exceptions:

1. Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet (18.58 m2).

2021 IRC – R310.1 [2 of 2]

2. Where the dwelling unit or townhouse unit is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following:

    2.1. One means of egress complying with Section R311 and one emergency escape and rescue opening.

    2.2. Two means of egress complying with Section R311.

3. A yard shall not be required to open directly into a public way where the yard opens to an unobstructed path from the yard to the public way. Such path shall have a width of not less than 36 inches (914 mm).

4. Properties with in-fill lots that are sprinklered in accordance with Section 2904, and a minimum clear yard size of 80 sq ft (7.43 m2)shall, be allowed to have access to the public way provided by a shared easement that is a minimum of 30 in (762 mm) wide.

2021 IRC – R311.7.4

Section R311.7.4 Walkline, was modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in 2021 code, and as such, this language was maintained as modified in the 2018 adoption and in the current Pennsylvania 2021 IRC adoption as follows:

R311.7.4 Walkline. The walkline across winder treads and landings shall be concentric to the turn and parallel to the direction of travel entering and exiting the turn. The walkline shall be located 12 inches (305 mm) from the inside of the turn. The 12-inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface. Where winders are adjacent within a flight, the point of the widest clear stair width of the adjacent winders shall be used.

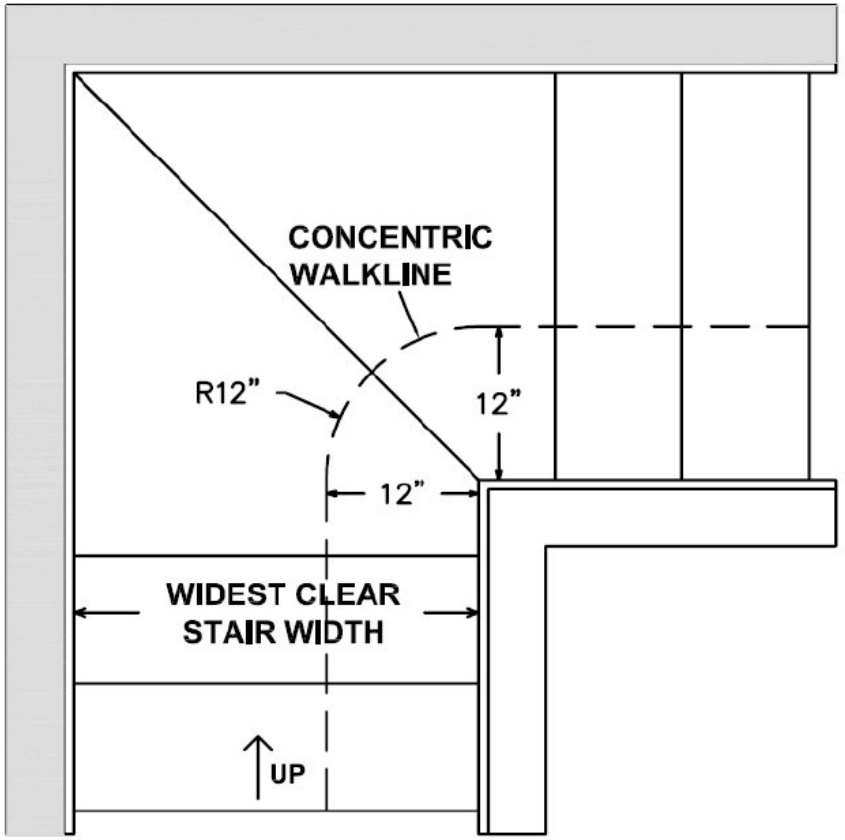


FIGURE R311.7.4
WINDER TREAD AND LANDING DETAIL

2021 IRC – 314.4

Section R314.4 Interconnection, was not modified as part of the Pennsylvania 2018 IBC adoption, maintain g the 2015 IRC language. The national language was not modified in 2021 code, and as such, this language was again maintained as written in the 2015 adoption and in the current Pennsylvania 2021 IRC adoption as follows:

> R314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.
>
> > Exception: Interconnection of smoke alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.

2021 IRC 322.2.1 (As Published) [1 of 2]

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas, not including flood hazard areas designated as Coastal A Zones, shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.

2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated to a height above the highest adjacent grade of not less than the depth number specified in feet (mm) on the FIRM plus 1 foot (305 mm), or not less than 3 feet (915 mm) if a depth number is not specified.

3. Basement floors that are below grade on all sides shall be elevated to or above base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.

2021 IRC 322.2.1 (As Published) [2 of 2]

4. Garage and carport floors shall comply with one of the following:

4.1. They shall be elevated to or above the elevations required in Item 1 or Item 2, as applicable.

4.2. They shall be at or above grade on not less than one side. Where a garage or carport is enclosed by walls, the garage or carport shall be used solely for parking, building access or storage.

Exception: Enclosed areas below the elevation required in this section, including basements with floors that are not below grade on all sides, shall meet the requirements of Section R322.2.2.

2021 IRC 322.3.2 (As Published) [1 of 2]

R322.3.2 Elevation requirements.

1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and racing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher.

2. Basement floors that are below grade on all sides are prohibited.

3. Garages used solely for parking, building access or storage, and carports shall comply with Item 1 or shall be at or above grade on not less than one side and, if enclosed with walls, such walls shall comply with Item 6.

2021 IRC 322.3.2 (As Published) [2 of 2]

4. The use of fill for structural support is prohibited.

5. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

6. Walls and partitions enclosing areas below the elevation required in this section shall meet the requirements of Sections R322.3.5 and R322.3.6.

2021 IRC – R325.5 [1of 2]

Section R325.5 Openness, was modified as part of the Pennsylvania 2015 IRC adoption. The national language was not modified in the 2018 code nor the 2021 code, and as such will remain as adopted in the Pennsylvania 2015 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

> R325.5 Openness. Mezzanines shall be open and unobstructed to the room in which they are located except for walls not more than 42 inches (1067 mm) 36 inches (914 mm) in height, columns and posts.

2021 IRC – R325.5 [2 of 2]

Exceptions:

1. Mezzanines or portions thereof are not required to be open to the room in which they are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the mezzanine area.
2. ~~In buildings that are not more than two stories above grade plane and equipped throughout with an automatic sprinkler system in accordance with NFPA 13R or NFPA 13D, a mezzanine having two or more means of egress shall not be required to be open to the room in which the mezzanine is located.~~

2021 IRC – R326.3 [1 of 2]

Section R326.3 Story above grade plane, is adopted as follows:

R326.3 Story above grade plane. A habitable attic shall be considered a story above grade plane.

Exceptions: A habitable attic shall not be considered to be a story above grade plane provided that the habitable attic meets all the following:

1. The aggregate area of the habitable attic is either of the following:

1.1. Not greater than one-third of the floor area of the story below.

2021 IRC – R326.3 [2 of 2]

1.2. Not greater than one-half of the floor area of the story below where the habitable attic is located within a dwelling unit equipped with a fire sprinkler system in accordance with Section P2904.

2. The occupiable space is enclosed by the roof assembly above, knee walls, if applicable, on the sides and the floor-ceiling assembly below.

~~3. The floor of the habitable attic does not extend beyond the exterior walls of the story below.~~

~~4. Where a habitable attic is located above a third story, the dwelling unit or townhouse unit shall be equipped with a fire sprinkler system in accordance with Section P2904.~~

2021 IRC – R506.2.3 [1 of 2]

Section R506.2.3 Vapor retarder, is adopted as follows:

R506.2.3 Vapor retarder. A minimum ~~10 mil (0.010 inch: 0.25mm) vapor retarder conforming to ASTM E1745 Class A requirements~~ 6 mil (0.006 inch: 152 mm) polyethylene or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.

Exception: The vapor retarder is not required for the following:

1. Garages, utility buildings and other unheated accessory structures.

2021 IRC – R506.2.3 [2 of 2]

2. For unheated storage rooms having an area of less than 70 square feet (6.5 m2) and carports.

3. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.

4. Where approved by the building official, based on local site conditions.

2021 IRC – R703.2 (Full Replacement) [1 of 3]

Section R703.2 Water-resistive barrier, is adopted as follows:

R703.2 Water-resistive barrier. Not fewer than one layer of water-resistive barrier shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Where the water-resistive barrier also functions as a component of a continuous air barrier, the water-resistive barrier shall be installed as an air barrier in accordance with Section N1102.4.1.1. Water-resistive barrier materials shall comply with one of the following:

1. No. 15 felt complying with ASTM D226, Type 1.

2. ASTM E2568, Type 1 or 2.

2021 IRC – R703.2 (Full Replacement) [2 of 3]

3. Foam plastic insulating sheathing water-resistive barrier systems complying with Section R703.1.1 and installed in accordance with the manufacturer's installation instructions.

4. ASTM E331 in accordance with Section R703.1.1.

5. Other approved materials in accordance with the manufacturer's installation instructions.

No.15 asphalt felt and water-resistive barriers complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).

2021 IRC – R703.2 (Full Replacement) [3 of 3]

Exception: A water-resistive barrier shall not be required in unconditioned detached tool sheds, playhouses, and other similar accessory structures provided all of the following requirements are met:

1. Exterior wall covering is limited to siding that is attached directly to the studs.

2. Exterior walls are uninsulated.

3. Interior side of exterior walls has no wall covering or wall finishes.

2021 IRC – R703.3.1

Section R703.3.1 Exterior soffit installation (Previous Soffit installation), is adopted as follows:

~~R703.3.1 Soffit installation. Soffits shall comply with Section R704.~~

R703.3.1 Exterior soffit installation. Exterior soffits shall comply with Section R704.

2021 IRC – R703.4.1 (Full Replacement) [1 of 2]

Section R703.4.1 Flashing installation at exterior window and door openings, is adopted as follows:

R703.4.1 Flashing installation at exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to a water-resistive barrier complying with Section 703.2 for subsequent drainage. Air sealing shall be installed around all window and door openings on the interior side of the rough opening gap. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:

2021 IRC – R703.4.1 (Full Replacement) [2 of 2]

1. The fenestration manufacturer's installation and flashing instructions, or for applications not addressed in the fenestration manufacturer's instructions, in accordance with the flashing or water-resistive barrier manufacturer's instructions. Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides.

2. In accordance with the flashing design or method of a registered design professional.

3. In accordance with other approved methods.

2021 IRC – R703.7

Section R703.7 Exterior plaster (stucco), was modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

> R703.7 Exterior plaster (stucco). Installation of exterior plaster shall be in compliance with ASTM C926-2018B, ASTM C1063-2018B and the provisions of this code.

2021 IRC – R704.1 (Full Replacement)

Section R704.1 General wind limitations, is adopted as follows:

R704.1 General wind limitations. Where the design wind pressure is 30 pounds per square foot (1.44 kPa) or less, exterior soffits shall comply with Section R704.2. Where the design wind pressure exceeds 30 pounds per square foot (1.44 kPa), exterior soffits shall comply with Section R704.3. The design wind pressure on exterior soffits shall be determined using the component and cladding loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.93 m2) and adjusted for height and exposure in accordance with Table R301.2.1(2).

2021 IRC – R704.2 (Full Replacement)

Section R704.2 Exterior soffit installation where the design wind pressure is 30 psf or less (Previous Soffit installation where the design wind pressure is 30 psf or less), is adopted as follows:

> R704.2 Exterior soffit installation where the design wind pressure is 30 psf or less. Where the design wind pressure is 30 pounds per square foot (1.44 kPa) or less, exterior soffit installation shall comply with Section R704.2.1, R704.2.2, R704.2.3 or R704.2.4. Soffit materials not addressed in Sections R704.2.1 through R704.2.4 shall be in accordance with the manufacturer's installation instructions.

2021 IRC – R704.2.1 (Full Replacement)

Section R704.2.1 Vinyl and aluminum soffit panels (Previous Vinyl soffit panels), is adopted as follows:

R704.2.1 Vinyl and aluminum soffit panels. Vinyl and aluminum soffit panels shall be installed using aluminum, galvanized, stainless steel or rust-preventative coated nails or staples or other approved corrosion-resistant fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or sub-fascia component in accordance with Figure R704.2.1(1). Where the unsupported span of soffit panels is greater than 16 inches (406 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl and aluminum soffit panels shall be installed in accordance with the manufacturer's installation instructions. Fascia covers shall be installed in accordance with the manufacturer's installation instructions.

2021 IRC – F R704.2.1(1) (Full Replacement) [1 of 2]

FIGURE R704.2.1(1) TYPICAL SINGLE-SPAN VINYL AND ALUMINUM EXTERIOR SOFFIT PANEL SUPPORT (Previous TYPICAL SINGLE-SPAN VINYL SOFFIT PANEL SUPPORT), is adopted as follows:

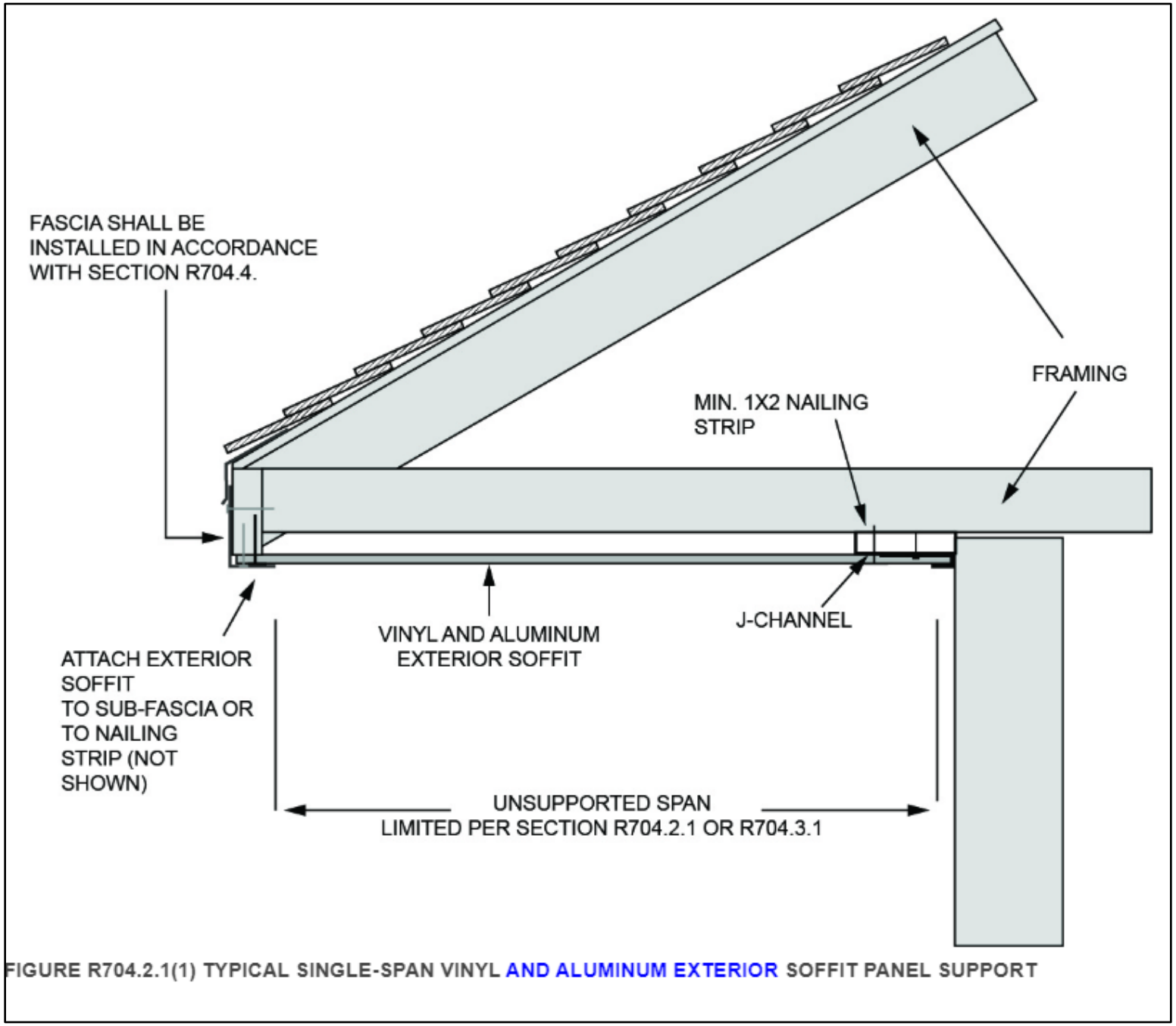


FIGURE R704.2.1(1) TYPICAL SINGLE-SPAN VINYL AND ALUMINUM EXTERIOR SOFFIT PANEL SUPPORT

2021 IRC - F R704.2.1(2) (Full Replacement) [2 of 2]

FIGURE R704.2.1(2) TYPICAL DOUBLE-SPAN VINYL AND ALUMINUM EXTERIOR SOFFIT PANEL SUPPORT (Previous TYPICAL DOUBLE-SPAN VINYL SOFFIT PANEL SUPPORT), is adopted as follows:

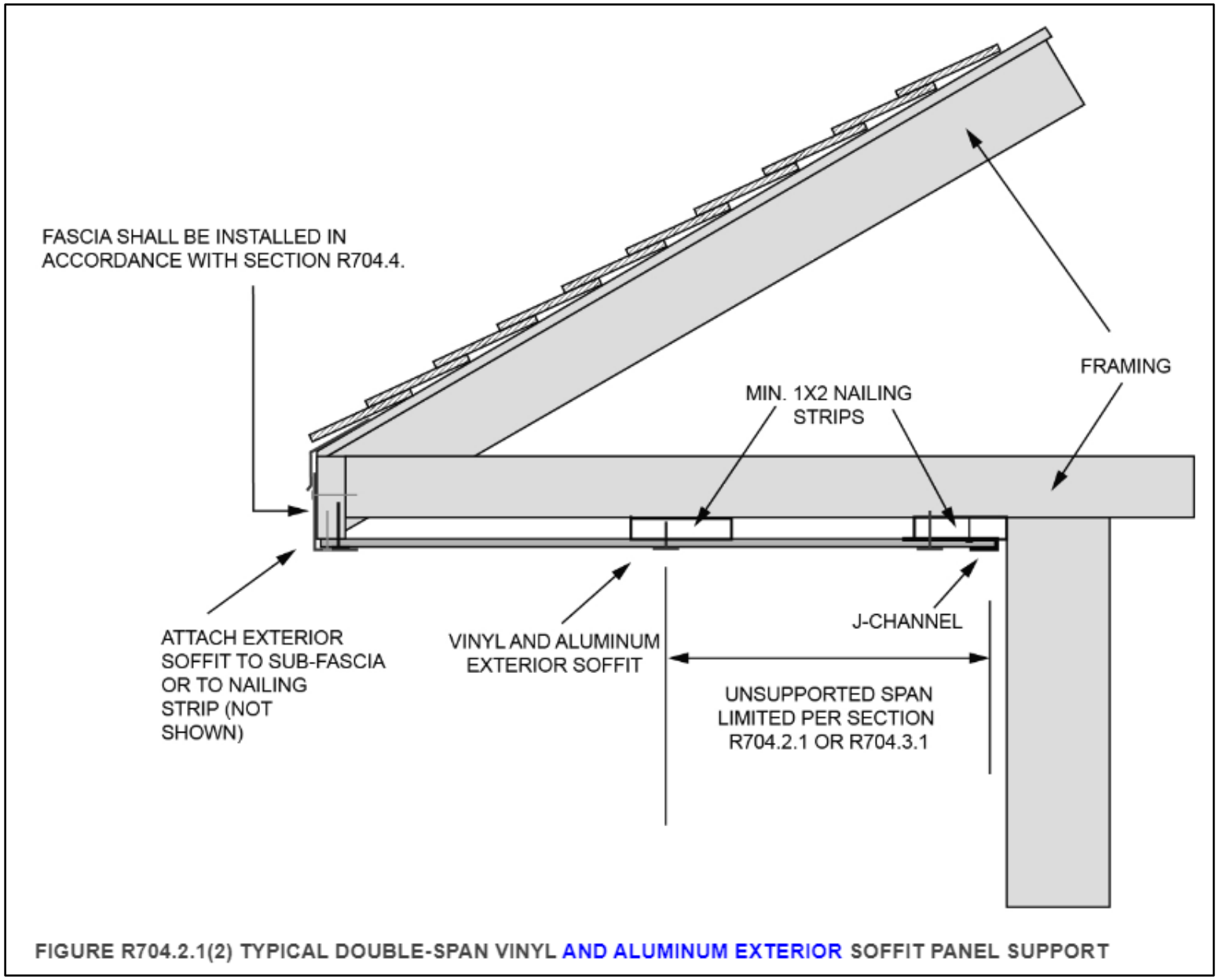


FIGURE R704.2.1(2) TYPICAL DOUBLE-SPAN VINYL AND ALUMINUM EXTERIOR SOFFIT PANEL SUPPORT

2021 IRC – R704.2.2 (Full Replacement)

Section R704.2.2 Fiber-cement exterior soffit panels (Previous Fiber-cement soffit panels), is adopted as follows:

R704.2.2 Fiber-cement exterior soffit panels. Fiber-cement exterior soffit panels shall be a minimum of 1/4 inch (6.4 mm) in thickness and shall comply with the requirements of ASTM C1186, Type A, minimum Grade II, or ISO 8336, Category A, minimum Class 2. Panel joints shall occur over framing or over wood structural panel sheathing. Exterior soffit panels shall be installed with spans and fasteners in accordance with the manufacturer's installation instructions.

2021 IRC – R704.2.3 (Full Replacement)

Section R704.2.3 Hardboard exterior soffit panels (Previous Hardboard soffit panels), is adopted as follows:

> R704.2.3 Hardboard exterior soffit panels. Hardboard exterior soffit panels shall be not less than 7/16 inch (11.11 mm) in thickness and shall be fastened to framing or nailing strips with 2-1/2-inch by 0.113-inch (64 mm by 2.9 mm) siding nails spaced not more than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports.

2021 IRC – R704.2.4 (Full Replacement)

Section R704.2.4 Wood structural panel exterior soffit (Previous Wood structural panel soffit), is adopted as follows:

> R704.2.4 Wood structural panel exterior soffit. The minimum nominal thickness for wood structural panel soffits shall be 3/8 inch (9.5 mm) and shall be fastened to framing or nailing strips with 2-inch by 0.099-inch (51 mm by 2.5 mm) nails. Fasteners shall be spaced not more than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports.

2021 IRC – R704.3 (Full Replacement)

Section R704.3 Exterior soffit installation where the design wind pressure exceeds 30 psf (Previous Soffit installation where the design wind pressure exceeds 30 psf), is adopted as follows:

> R704.3 Exterior soffit installation where the design wind pressure exceeds 30 psf. Where the design wind pressure is greater than 30 psf, exterior soffit installation shall comply with Section R704.3.1, R704.3.2, R704.3.3 or R704.3.4. Exterior soffit materials not addressed in Sections R704.3.1 through R704.3.4 shall be in accordance with the manufacturer's installation instructions.

2021 IRC – R704.3.1 (Full Replacement)

Section R704.3.1 Vinyl exterior soffit panels (Previous Vinyl soffit panels), is adopted as follows:

R704.3.1 Vinyl exterior soffit panels. Vinyl exterior soffit panels and their attachments shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m2) and adjusted for height and exposure in accordance with Table R301.2.1(2). Vinyl exterior soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or sub-fascia component in accordance with Figure R704.2.1(1). Where the unsupported span of exterior soffit panels is greater than 12 inches (305 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl exterior soffit panels shall be installed in accordance with the manufacturer's installation instructions.

2021 IRC – R704.3.2 (Full Replacement)

Section R704.3.2 Fiber-cement exterior soffit panels (Previous Fiber-cement soffit panels), is adopted as follows:

> R704.3.2 Fiber-cement exterior soffit panels. Fiber-cement exterior soffit panels shall comply with Section R704.2.2 and shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m2) and adjusted for height and exposure in accordance with Table R301.2.1(2).

2021 IRC – R704.3.3 (Full Replacement)

Section R704.3.3 Hardboard exterior soffit panels (Previous Hardboard soffit panels), is adopted as follows:

> R704.3.3 Hardboard exterior soffit panels. Hardboard exterior soffit panels shall comply with the manufacturer's installation instructions and shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m2) and adjusted for height and exposure in accordance with Table R301.2.1(2).

2021 IRC – R704.3.4 (Full Replacement)

Section Wood structural panel exterior soffit (Previous Wood structural panel soffit), is adopted as follows:

R704.3.4 Wood structural panel exterior soffit. Wood structural panel exterior soffits shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m2) and adjusted for height and exposure in accordance with Table R301.2.1(2). Alternatively, wood structural panel exterior soffits shall be installed in accordance with Table R704.3.4.

2021 IRC – T R704.3.4 [1 of 2]

TABLE R704.3.4 PRESCRIPTIVE ALTERNATIVE FOR WOOD STRUCTURAL PANEL SOFFIT b, c, d, e, is adopted as follows:

TABLE R704.3.4
PRESCRIPTIVE ALTERNATIVE FOR WOOD STRUCTURAL PANEL SOFFIT [b, c, d, e]

MAXIMUM DESIGN PRESSURE (+ or - psf)	MINIMUM PANEL SPAN RATING	MINIMUM PANEL PERFORMANCE CATEGORY	NAIL TYPE AND SIZE	FASTENER[a] SPACING ALONG EDGES AND INTERMEDIATE SUPPORTS	
				Galvanized Steel	Stainless Steel
30	24/0	3/8	6d box (2 × 0.099 × 0.266 head diameter)	6[f]	4
40	24/0	3/8	6d box (2 × 0.099 × 0.266 head diameter)	6	4
50	24/0	3/8	6d box (2 × 0.099 × 0.266 head diameter)	4	4
			8d common ($2^1/_2$ × 0.131 × 0.281 head diameter)	6	6
60	24/0	3/8	6d box (2 × 0.099 × 0.266 head diameter)	4	3
			8d common ($2^1/_2$ × 0.131 × 0.281 head diameter)	6	4
70	24/16	7/16	8d common ($2^1/_2$× 0.131 × 0.281 head diameter)	4	4
			10d box (3 × 0.128 × 0.312 head diameter)	6	4
80	24/16	7/16	8d common ($2^1/_2$ × 0.131 × 0.281 head diameter)	4	4
			10d box (3 × 0.128 × 0.312 head diameter)	6	4
90	32/16	15/32	8d common ($2^1/_2$ × 0.131 × 0.281 head diameter)	4	3
			10d box (3 × 0.128 × 0.312 head diameter)	6	4

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

a. Fasteners shall comply with Sections R703.3.2 and R703.3.3.

b. Maximum spacing of soffit framing members shall not exceed 24 inches.

c. Wood structural panels shall be of an exterior exposure grade.

d. Wood structural panels shall be installed with strength axis perpendicular to supports with not fewer than two continuous spans.

e. ~~Wood structural panels shall be attached to soffit framing members with specific gravity of at least 0.42. Framing members shall be minimum 2 × 3 nominal with the larger dimension in the cross section aligning with the length of fasteners to provide sufficient embedment depths.~~

f. Spacing at intermediate supports shall be not greater than 12 inches on center.

e. Wood structural panels shall be attached to soffit framing members with specific gravity of at least 0.35. Where the specific gravity of the wood species used for sofit framing members is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, the fastener spacing shall be multiplied by 0.67 or the same fastener spacing as prescribed for galvanized steel nails shall be permitted to be used where RSRS-01 (2" x 0.099" x 0.266" head) nails replace 6d box nails and RSRS-03 (2-1/2" x 0.131" x 0.281" head) nails replace 8d common nails or 10d box nails. RSRS is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667. Framing members shall be minimum 2 × 3 nominal with the larger dimension in the cross section aligning with the length of fasteners to provide sufficient embedment depths.

2021 IRC – R802.3

Section R802.3 Ridge, is adopted as follows:

R802.3 Ridge. A ridge board used to connect opposing rafters shall be not less than 1 inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter. Where ceiling joist or rafter ties do not provide continuous ties across the structure as required by Section R802.5.2, the ridge shall be supported by a wall or ridge beam designed in accordance with accepted engineering practice and supported on each end by a wall, or column, or girder.

2021 IRC – R806.1

Section R806.1 Ventilation required, was modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

R806.1 Ventilation required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air ~~and shall be protected to prevent the entry of birds, rodents, snakes and other similar creatures~~.

2021 IRC – R806.2 [1 of 2]

Section R806.2 Minimum vent area, was not modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2015 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

R806.2 Minimum vent area. The minimum net free ventilating area shall be 1/150 of the area of the vented space.

Exception: The minimum net free ventilation area shall be 1/300 of the vented space provided one or more of the following conditions are met:

2. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.

2021 IRC – R806.2 [2 of 2]

3. Not less than 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the required ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

2021 IRC – R806.3

Section R806.3 Vent and insulation clearance, was modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

> R806.3 Vent and insulation clearance. Where eave or cornice vents are installed, ~~blocking, bridging and insulation~~ nothing shall ~~not~~ block the free flow of air. Not less than a 1-inch (25 mm) space shall be provided between the insulation and the roof sheathing and at the location of the vent.

2021 IRC – R1005.8

Section R1005.8 Insulation shield, was not adopted was not adopted as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption and in the current Pennsylvania 2021 IRC adoption **without** the inclusion of Section R1005.8 Insulation shield

2021 IRC – Chapter 11

- Covered under 2021 IECC Residential

2021 IRC – M1305.1.3.2

Section M1305.1.3.2 Excavations (Previous Pit locations), was not modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption (2015 IRC language) and in the current Pennsylvania 2021 IRC adoption as follows:

> M1305.1.3.2 Excavations. Excavations for appliance installations shall extend to a depth of 6 inches (152 mm) below the appliance and 12 inches (305 mm) on all sides, except that the control side shall have a clearance of 30 inches (762 mm).

2021 IRC – M1411.6.1

Section M1411.6.1 Refrigerant line insulation protection (Previous Refrigerant line insulation), was not modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption (2015 IRC language) and in the current Pennsylvania 2021 IRC adoption as follows:

> M1411.6.1 Refrigerant line insulation protection. Refrigerant piping insulation shall be protected in accordance with Section N1103.4.1.

2021 IRC – M1502.3.1

Section M1502.3.1 Exhaust termination outlet and passageway size, was not adopted as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such was **not** adopted

2021 IRC – G2427.2.2

Section G2427.2.2 (503.2.4) Appliances with integral vents, was adopted as follows:

> G2427.2.2 (503.2.4) Appliances with integral vents. Appliances incorporating integral venting means shall be installed in accordance with Section G2427.8, ~~Items 1 and 2~~.

2021 IRC – G2427.5.1

Section G2427.5.1 (503.5.1) Factory-built chimneys, is adopted as follows:

G2427.5.1 (503.5.1) Factory-built chimneys. Factory-built chimneys shall be listed in accordance with UL 103 and installed in accordance with manufacturer's instructions. Factory-built chimneys used to vent appliances that operate at a positive vent pressure shall be listed for such application.

2021 IRC – G2427.5.4

Section G2427.5.4 (503.5.5) Size of chimneys, is adopted as follows:

G2427.5.4 (503.5.5) Size of chimneys. The effective area of a chimney venting system serving listed appliances with draft hoods, Category I appliances, and other appliances listed for use with Type B vents shall be determined in accordance with one of the following methods:

1. The provisions of Section G2428.

2. The effective areas of the vent connector and chimney flue of a venting system serving a single appliance with a draft hood shall be not less than the area of the appliance flue collar or draft hood outlet, nor greater than seven times the draft hood outlet area.

2021 IRC – G2427.5.4

3. The effective area of a chimney flue or a venting system serving two appliances with draft hoods, shall be not less than the area of the larger draft hood outlet plus 50 percent of the area of the smaller draft hood outlet. Nor greater than seven times the smallest draft hood outlet.

4. Chimney venting systems using mechanical draft shall be sized in accordance with approved engineering methods.

5. Other approved engineering methods.

2021 IRC – G2427.5.10

Section G2427.5.10 (503.5.11) Insulation shield, is adopted as follows:

G2427.5.10 (503.5.11) Insulation shield. Where a factory-built chimney passes through insulated assemblies, an insulation shield constructed of steel having a thickness of not less than 0.0187 inch (0.475 mm) (nominal 26 gage) shall be installed to provide clearance between the chimney and the insulation material. The clearance shall be not less than the clearance to combustibles specified by the chimney manufacturer's installation instructions. Where chimneys pass through attic space, the shield shall terminate not less than 2 inches (51 mm) above the installation materials and shall be secured in place to prevent displacement. Insulation shields provided as part of a listed chimney system shall be installed in accordance with the manufacturer's installation instructions.

2021 IRC – P2503.5.1 (As Published) [1 of 2]

P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water, by air for piping systems other than plastic, or by a vacuum of air for plastic piping systems, without evidence of leakage. The test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:

1. Water test. Each section shall be filled with water to a point not less than 10 feet (3048 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.

2021 IRC – P2503.5.1 (As Published) [2 of 2]

2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

3. Vacuum test. The portion under test shall be evacuated of air by a vacuum-type pump to achieve a uniform gauge pressure of -5 pounds per square inch or a negative 10 inches of mercury column (-34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes.

2021 IRC – P2903.5

Section P2903.5 Water hammer, was not modified as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain as adopted in the Pennsylvania 2018 IRC adoption (2015 IRC language) and in the current Pennsylvania 2021 IRC adoption as follows:

> P2903.5 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. Water-hammer arrestors shall be installed in accordance with the manufacturer's instructions. Water-hammer arrestors shall conform to ASSE 1010.

2021 IRC – P2905.3

Section 2905.3 Hot water supply to fixtures, was not adopted as part of the current Pennsylvania 2021 IRC adoption

2021 IRC – P2906.6.1

Section P2906.6.1 Saddle tap fittings, was not adopted as part of the Pennsylvania 2018 IRC adoption. The national language was not modified in the 2021 code, and as such will remain not adopted in the current Pennsylvania 2021 IRC adoption

2021 IRC – E3601.8

Section E3601.8 Emergency disconnects, is adopted as follows

E3601.8 Emergency disconnects. For one- and two-family detached dwelling units, all service conductors shall terminate in disconnecting means having a short-circuit current rating equal to or greater than the available fault current, installed in a readily accessible outdoor location. If more than one disconnect is provided, they shall be grouped. Each disconnect shall be one of the following:

1. Service disconnects marked as follows: EMERGENCY DISCONNECT, SERVICE DISCONNECT.

2021 IRC – E3601.8 [1 of 2]

2. Meter disconnect switches that have a short-circuit current rating equal to or greater than the available fault current and all metal housings and service enclosures are grounded in accordance with Section E3908.7 and bonded in accordance with Section 3609. A meter disconnect switch shall be capable of interrupting the load served and shall be marked as follows: EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT.

3. Other listed disconnect switches or circuit breakers on the supply side of each service disconnect that are suitable for use as service equipment and marked as follows: EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT.

Markings shall comply with Section E3404.12. [230.82 (3), 230.85]

2021 IRC – E3901.4.2 [2 of 2]

Section E3901.4.2 Island countertop spaces, was not modified as part of the Pennsylvania 2021 IRC adoption, and as such will remain in the 2018 IRC as follows:

> E3901.4.2 Island countertop spaces. At least one receptacle outlet shall be installed at each island countertop space with a long dimension of 24 inches (610 mm) or greater and a short dimension of 12 inches (305 mm) or greater. [210.52(C)(2)]

2021 IRC – E3901.11

Section E3901.11 Foyers, was modified as part of the Pennsylvania 2015 IRC adoption. The national language was not modified in the 2018 code nor the 2021 code, and as such will remain as adopted in the Pennsylvania 2015 IRC adoption and in the current Pennsylvania 2021 IRC adoption as follows:

E3901.11 Foyers. Foyers that are not part of a hallway in accordance with Section E3901.10 and that have an area that is greater than 60 ft2 (5.57 m2) shall have a receptacle(s) located in each wall space that is ~~3 feet (914 mm)~~ 6 feet (1829 mm) or more in width, but a minimum of one receptacle. Doorways, door-side windows that extend to the floor, and similar openings shall not be considered as wall space. [210.52(H)]

2021 IRC – E3905.8 [1 of 2]

Section 3905.8 Boxes at fan outlets, is adopted as follows:

E3905.8 Boxes at fan outlets. Outlet boxes and outlet box systems used as the sole support of ceiling-suspended fans (paddle) shall be marked by their manufacturer as suitable for this purpose and shall not support ceiling-suspended fans (paddle) that weigh more than 70 pounds (31.8 kg). For outlet boxes and outlet box systems designed to support ceiling-suspended fans (paddle) that weigh more than 35 pounds (15.9 kg), the required marking shall include the maximum weight to be supported.

2021 IRC – E3905.8 [2 of 2]

Outlet boxes mounted in the ceilings of habitable rooms in a location acceptable for the installation of a ceiling-suspended (paddle) fan shall comply with one of the following:

1. Listed for sole support of ceiling-suspended (paddle) fans.

2. An outlet box complying with the applicable requirements of Section E3905.6 and providing access to structural framing capable of supporting of a ceiling-suspended (paddle) fan bracket or equipment. [314.27(C)]

2021 IRC – E4002.11

Section E4002.11 Bathtub and shower space, was not modified as part of the Pennsylvania 2021 IRC adoption, and as such will remain in the 2018 IRC as follows:

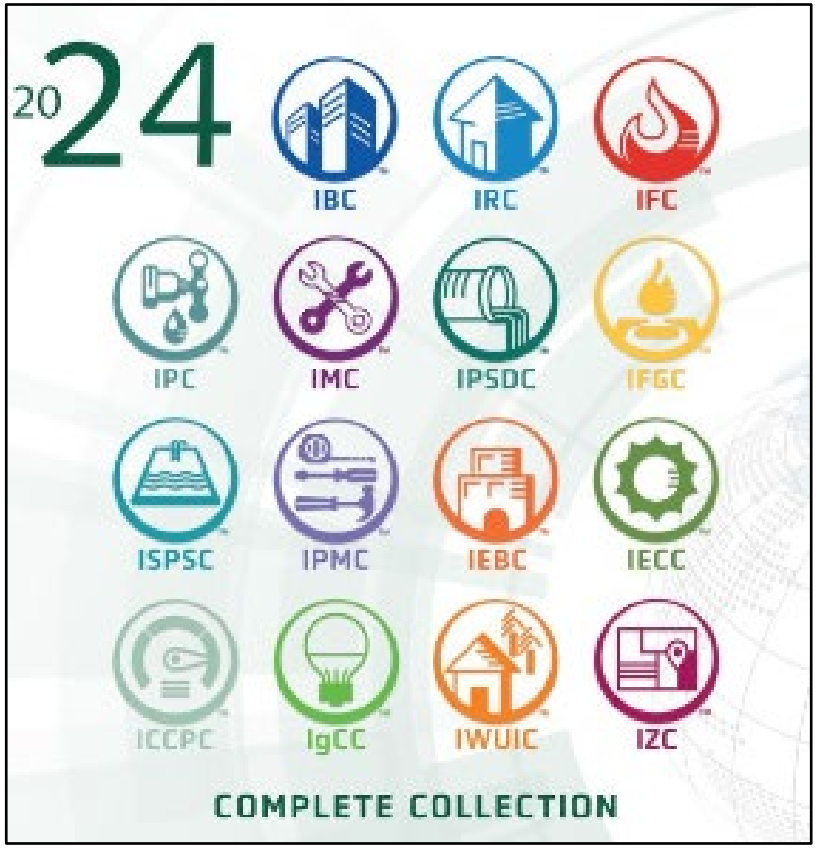
> E4002.11 Bathtub and shower space. A receptacle shall not be installed within or directly over a bathtub or shower stall. [406.9(C)]

2021 IRC – E4004.5

Section 4004.5 Means of support, is adopted as follows:

E4004.5 Means of support. Luminaires shall be permitted to be supported by outlet boxes or fittings installed as required by Sections E3905, and E3906. Outlet boxes complying with Section E3906.12 E3905.6.3 shall be considered lighting outlets as required by Section E3903. [410.36(A)]

2024 ICC code review & adoption process



Updated sections

- Those sections of the ICC Codes that have changed from the published 2018 ICC codes to the 2021 published codes

Additional sections

- The council shall also review, in accordance with the procedures outlined in this act, any section of the collective codes that do not otherwise constitute updated sections but only if two-thirds of the council membership so determine. The sections selected for review shall be referred to as "additional sections." The additional sections shall be treated for purposes of review and approval or disapproval by the council as updated sections. The selection of additional sections shall occur prior to commencement of the review process.

What is the basis of review

- Each updated section subject to review shall be examined by applying all of the following criteria:
- (i) The impact that the section may have upon the health, safety and welfare of the public.
- (ii) The economic and financial impact of the section, including impact on the end consumer.
- (iii) The technical feasibility of the section.

2024 ICC code review & adoption process

- 8/15/2024 - ICC Officially Publishes 2024 ICC Family of Codes
- 9/12/2024 - RAC Meeting Approves 2024 Adoption Timeline & Approves 2021 Code Adoption Report
- 10/1/2024 - 2021 Deadline Code Adoption Final Report Submitted to Dept L&I
- 2/27/2025 - RAC Meeting
- 5/8/2025 - RAC Meeting
- 7/13/2025 - Estimated 2021 Code Go Live Date
- 7/31/2025 - RAC Meeting
- 9/2/2025 - Open Public Comment for Sections Not Changing from 2021 to 2024
- 12/1/2025 - Close Public Comment for Sections Not Changing from 2021 to 2024
- 1/8/2026 - RAC Meeting
- 2/12/2026 - RAC Meeting
- 3/12/2026 - RAC Meeting

2024 ICC code review & adoption process

- 4/9/2026 - Publish list of additional sections to be considered with 2024 Adoption
- 5/7/2026 - RAC Initiate PA Review of 2024 ICC Family of Codes
- 6/6/2026 - RAC Opens Public Comment on 2024 ICC Family of Codes
- 6/6/2026 - TAC Committee Applications are Opened
- 7/6/2026 - TAC Committee Applications are Closed
- 10/4/2026 - Public Comment Closed
- 11/5/2026 - RAC Receives Public Comment and Assigns Comments to TAC's
- 1/30/2027 - Estimated publish date of 2027 ICC Codes
- 4/8/2027 - RAC Meets With Update From TAC Committee's Being Presented
- 7/15/2027 - TAC Review Completed with Final Reports to Dept L&I
- 8/5/2027 - RAC Receives Final Report From TAC Committee's
- 8/10/2027 - TAC Final Reports are Posted for Public Review

2024 ICC code review & adoption process

- 8/26/2027 - RAC First Public Hearing (EAST)
- 9/9/2027 - RAC Second Public Hearing (Harrisburg)
- 9/23/2027 - RAC Third Public Hearing (WEST)
- 10/7/2027 - RAC Meeting to Deliberate
- 10/21/2027 - RAC Meeting to Deliberate
- 11/4/2027 - RAC Meeting to Deliberate
- 11/18/2027 - RAC Meeting to Deliberate
- 12/2/2027 - RAC Meeting to Deliberate
- 12/16/2027 - RAC Meeting to Deliberate
- 1/13/2028 - Draft Report Presented to the RAC
- 1/30/2028 - Estimated Open Public Comment for Sections Not Changing from 2024 to 2027
- 3/16/2028 - Final Report Approved by RAC

2024 ICC code review & adoption process

- 4/10/2028 - Deadline Final Report Submitted to Dept L&I
- 4/29/2028 - Estimated Close Public Comment for Sections Not Changing from 2024 to 2027
- 5/11/2028 - RAC Meeting
- 6/8/2028 - RAC Meeting
- 9/7/2028 - RAC Meeting
- 9/21/2028 - Estimated Publish list of additional sections to be considered with 2027 Adoption
- 10/19/2028 - Estimated RAC Initiate PA Review of 2027 ICC Family of Codes
- 11/18/2028 - Estimated RAC Opens Public Comment on 2027 ICC Family of Codes
- 11/18/2028 - Estimated 2027 TAC Committee Applications are Opened
- 12/18/2028 - Estimated 2027 TAC Committee Applications are Closed
- 3/15/2029 - RAC Meeting
- 1/21/2029 - 2024 ICC Family of Codes Go Live

2024 ICC code review & adoption process

- 1/30/2029 - Estimated publish date of 2030 ICC Codes
- 3/18/2029 - Estimated 2027 Public Comment Closed
- 4/5/2029 - Estimated RAC Receives 2027 Public Comment and Assigns Comments to TAC's

QUESTIONS