

Indoor AirPlus Version 2 Highlights

Summary of Updates



The following is a summarized list of changes in “Version 2” of the Indoor AirPlus program requirements following Version 1. The list below is not exhaustive but intends to capture the most notable changes. Please refer to the referenced documents to review specific text changes along with EPA’s responses to public comment for additional background.

General Updates to Eligibility and Certification System

- EPA has developed a tiered certification system with specifications for Indoor AirPlus CERTIFIED and Indoor AirPlus GOLD labels.
 - Residential buildings of all heights are included in the program scope.
 - Homes/buildings are eligible for the Indoor AirPlus (IAP) CERTIFIED label with no other certification pre-requisites.
 - To be eligible for Indoor AirPlus GOLD, homes/buildings must be certified using the ENERGY STAR Single-Family New Homes or Multifamily New Construction (MFNC) programs.
- EPA will introduce a Home Certification Organization (HCO) model aligned with ENERGY STAR and WaterSense Labeled Homes.
- EPA will introduce required trainings for IAP partners and quality assurance guidelines for HCOs to enhance consistency in application of the program requirements.

General Updates to Specifications Format

- Specification sections and items have been re-numbered for ease of reference.
- Terminology is updated in some cases (e.g., Section 4 uses the term “HAC” rather than “HVAC” in many instances, underscoring the importance of ventilation, often as a separate system from heating/cooling).
- Requirements for newly installed features are differentiated from existing features in some instances, improving options and specificity for gut-rehabs.
- For Multifamily buildings, various requirements apply to common space where noted.

Specification Updates

GOLD and **CERTIFIED** are noted below where the item only applies to that specific certification tier. Otherwise, the change is applicable to both certifications.

1. Moisture Control

Verification Process and Documentation

EPA recognizes that builders are already highly motivated to address basic moisture management protections and that various IAP provisions have been included in model codes for many years. EPA intends for IAP requirements to help guide and enhance these measures, improving consistency in application in jurisdictions which may not have adopted such measures in their local code, while also not adding unnecessary burden for participants where these measures are common building practice. Rather than requiring potentially unnecessary inspections by the IAP Verifier at numerous points in the construction process, EPA has designated twenty-two of the thirty-four items in Section 1 as a “Builder Responsibility” (rather than “rater verified”), reducing verification costs and improving overall affordability of certified homes. To address consistency and enforcement of those basic

moisture management provisions, builders will be required to review those items with a Verifier, confirming their understanding and application of those practices through a signed “Builder Responsibility” form, documented, and retained by the Verifier at least once per development/community. EPA believes this approach strikes an appropriate balance by improving communication between IAP partners, enhancing accountability and consistent application on the part of the builder, while also reducing burden in the certification process.

1.3 A trapped drain or moisture monitoring system must be located in the lowest area of buildings with a basement or crawlspace.

1.4.1 & 1.4.2

Dry climates are not exempt from capillary break and vapor retarder requirements under newly installed slabs, in alignment with code.

1.4.6 **GOLD only:** Capillary break installed under or on top of newly installed footers (e.g. poly, bituminous membrane, liquid waterproofing, or entire stem wall and sill is encapsulated).

1.10.1 Self-adhering bituminous membrane at valleys and roof penetrations not exempted for Dry (B) Climates, but any option in 2021 IRC Section R905 is permitted.

1.10.2 More explicit requirements for newly installed low sloped or flat roofs (<2:12 pitch), including insulated drains.

1.11.1 Ice dam prevention is required for Climate Zones 4 & higher and in accordance with 2021 IRC R905.1.2 (w/ alternatives for gut rehabs).

1.17.1 Interior Inspection (Gut Rehabs only): Prior to insulation and interior finishes, verify that moisture intrusion, leaks, and mold are not evident, or source is identified and remedied.

1.17.2 Exterior inspection: above-grade surfaces are free from degradation and potential moisture intrusion, or source is identified and remedied.

2. Radon

2.1 Options for Radon Risk Reduction Strategies specified in all Radon Zones, with exceptions for buildings with no ground contact locations.

2.1.1 EPA Radon Zone 1: construct buildings with either an active radon mitigation system OR a passive system plus a radon test upon completion.

2.1.2 EPA Radon Zone 2: construct buildings with either an active or passive radon mitigation system OR conduct radon testing upon completion.

2.1.3 EPA Radon Zone 3: provide the occupants of one- and two-family dwellings with EPA’s *Radon Fact Sheet*.

2.2 Where passive or active radon systems are installed, most “below grade” or “rough-in” features (e.g. capillary break, system piping, backwater valves) are designated as “Builder Responsibility” and included on the attestation form (see Section 1, Verification Process and Documentation). Verifiers are responsible for verifying most “above grade” or “final inspection” features (e.g. fan location, labeled branch circuit, pressure meter for active systems). Where radon testing is used for compliance, relevant industry standards have been updated.

3. Pest Barriers

3.1.5 **GOLD only:** Screens provided for all operable windows.

3.2 **Multifamily only:**

- Pest Management Plan or contract in place; guidance included in owner/tenant manual.
- **GOLD only:** Sanitary floor drains in common trash/recycle rooms.

4. Heating, Cooling, and Ventilation Systems

Heating and Cooling Design and Inspection

- 4.1 For newly installed HAC systems in dwelling unit and common spaces, regardless of system type, heating and cooling design loads are required to be calculated. Equipment that was previously exempt, such as boilers and mini-splits, are also required to be properly sized.
- 4.1.4 Existing HAC system components shall be assessed in accordance with ACCA Standard 4 or ANSI/ASHRAE/ACCA Standard 180 and cleaned and repaired where visual inspection reveals significant issues.
 - 4.2.1 **GOLD only:** Humidity monitoring device provided in the dwelling unit; in multifamily, remote RH monitoring is permitted.
 - 4.2.2 Requirement to install dehumidification equipment is expanded into Moist (A) CZ 4, with some exceptions.
 - 4.3.3 Inspection of ductwork to verify ducts and duct boots are dry, clean, and in good condition.
 - 4.3.6 and 4.3.7
 - Total duct leakage and leakage to outside testing requirements for dwelling units still aligned with ENERGY STAR, but DLTO required for multifamily apartments with more than 10 ft. of ductwork outside the dwelling unit.
- 4.4 **GOLD only:** All dwelling-unit HAC air handling equipment and ductwork installed within the thermal and air barrier boundary of the dwelling unit (with exceptions).

Mechanical Ventilation

- 4.6.1 **GOLD only:** Dwelling-unit mechanical ventilation must be balanced; however, energy/heat recovery is not required.
- 4.6.5 Ventilation rates aligned with ASHRAE 62.2-2019.
 - GOLD only:** Outdoor air supplied to the dwelling unit shall be measured.
- 4.6.6 Outdoor air passes through a MERV 8 filter (**GOLD only: MERV 13**).
- 4.6.7 Dwelling-unit mechanical ventilation fans located within the dwelling unit shall be rated for sound at a maximum of 1 sone, with some exceptions.
- 4.7.4 **GOLD only:** Dwelling-unit bathroom exhaust fans include manual timer or occupancy/humidity sensor if not run continuously.
- 4.8.1 Dwelling-unit kitchen exhaust is demand-controlled (i.e., intermittent, resident-operated) and located at the cooktop for one- and two-family homes/townhouses. Minimum verifier-measured exhaust airflows: 200 cfm for **CERTIFIED**; 300 cfm for **GOLD**.
 - Multifamily only:** Continuous kitchen exhaust is permitted with alternative exhaust rates if ventilation grille has a MERV 3 or washable filter, the cooktop is electric, and a recirculating range hood above the cooktop has a charcoal filter installed.
- 4.8.3 Continuous kitchen exhaust fans are rated for sound; maximum of 1 sone permitted at an airflow no less than 25 cfm. Demand-controlled kitchen exhaust fans shall have at least one speed setting that is rated for sound; a maximum of 2 sones is permitted at an airflow no less than 100 cfm.
- 4.9 **Multifamily only:** Common spaces are required to meet ASHRAE 62.1-2019 for minimum outdoor air and exhaust and the outdoor air must pass through a MERV 8 filter (**GOLD only: MERV 13**).

Filtration and Air Cleaning

- 4.11 Filtration requirements expanded to include ducted HAC systems serving common spaces. For ducted HAC systems, the filter rating increases from MERV 8 to MERV 11 (**GOLD only: MERV 13**). Lower MERV ratings permitted, but only if paired with portable air cleaners.
- 4.12 **GOLD only:** Homes with no ducted HAC systems include either a non-ducted system with filter rated \geq MERV 13, or stand-alone portable air cleaners, or transfer fan with \geq MERV 13 filter.
- 4.14 Where provided, Ultraviolet Germicidal Irradiation (UVGI) or other electronic air cleaners do not generate ozone exceeding concentration limits of 0.005 ppm.

5. Pollutant Control

5.1 **CERTIFIED only:** Where naturally drafted furnaces, boilers and water heaters are installed within the building's pressure boundary they must pass maximum depressurization testing.

GOLD only: Combustion furnaces, boilers, and water heaters within the building's pressure boundary are mechanically drafted or direct-vented.

5.1.4 Existing chimneys and flues still in service have passed a Level II inspection performed by a CSIA certified chimney sweep (or other similar certification).

5.4.2 All detached homes > 1000 ft², air infiltration is no greater than 5 ACH50.

- **GOLD only:** No greater than 3 ACH50.

All other dwelling units, air infiltration is no greater than 0.3 CFM50 per square foot of dwelling-unit enclosure area.

- **GOLD only:** No greater than 0.25 CFM50 per square foot.

5.5 In all detached one- and two-family homes and townhouses either:

- Verify that the garage-to-house air barrier can maintain a pressure difference > 45 Pa while the house maintains a 50 Pa difference WRT outdoors; OR
- Install an exhaust fan in the garage, minimum 100 cfm (rater verified).

6. Building Materials

Verification Process and Documentation

Documentation may be provided for an entire community/development or multifamily building where products are consistently installed across all dwelling units. These might include a cut sheet, purchase order, or corporate-wide declaration or sales agreement which documents product selection for the community/development or building.

EPA published an updated guide to assist partners in locating and verifying products compliant with the standards referenced in Section 6.

6.1 Interior site-applied paints, finishes, coatings meet emission limits of California Department of Public Health (CDPH) Standard Method V1.2-2017.

6.2 Carpet and carpet cushions meet emission limits of CDPH Standard Method V 1.2-2017.

6.3 Adhesives and sealants meet emission limits of CDPH Standard Method V1.2-2017.

6.4 Hard surface flooring meet emission limits of CDPH Standard Method V1.2-2017.

6.5 Interior gypsum board and joint compound meet emission limits of CDPH Standard Method V1.2-2017.

6.6 **GOLD only:** Insulation products meet emission limits of CDPH Standard Method V1.2-2017 (with exceptions for pipe insulation and board insulation on exterior sheathing).

7. Occupant Education

Verification Process and Documentation

Home commissioning items were moved to the respective relevant subject matters in sections above.

The label and certificate requirement were moved to other certification system documents and partnership agreements.

7.1.2 A requirement for operations and maintenance recommendations, including filter replacement, was added.