Sustainable Specs
Implementation of Passive Goals

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AGENDA

- Introduction
- What Belongs in Specifications?
- Performance vs. Prescriptive
- Construction Verification

DO YOU:

1. Write Specifications
2. Review Specifications
3. Use Specifications

Phius 2024
PASSIVE BUILDING STANDARDS CERTIFICATION GUIDEBOOK





phius | v25.1.0
September, 2025

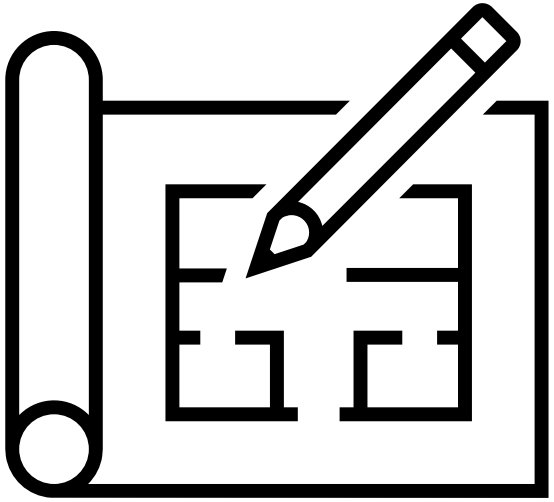
ENERGY CODE

EPA Indoor airPLUS QUALIFIED HOME

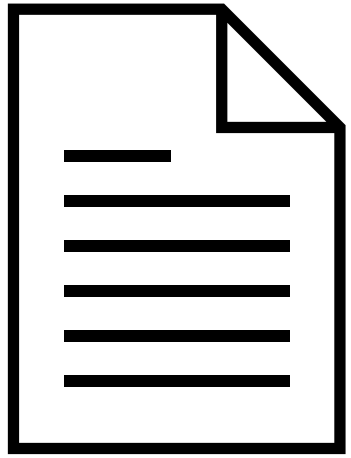
ZERO ENERGY READY HOME U.S. DEPARTMENT OF ENERGY

ENERGY STAR

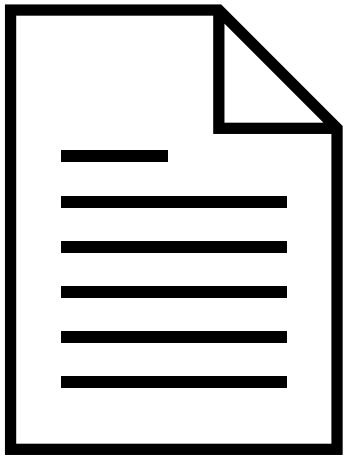
DRAWINGS



SPECIFICATIONS



SPECIFICATIONS



Division 1 – General Requirements (Passive Building Spec)

Division 3 – 5 – Structure (Structural Thermal Breaks)

Division 7 – 8 – Building Envelope (Air Barrier, Windows, Insulation)

Division 9-12 – Interior | Finishes (Appliances, Fixtures, Blinds)

Division 22 – Plumbing (DHW Equipment, Pipe Insulation)

Division 23 – HVAC (HVAC Equipment, Ducts, Balanced Ventilation)

Division 26 - Electrical (Distribution, Lighting)

WHAT BELONGS IN SPECIFICATIONS?

EPA
United States Environmental Protection Agency

VERSION 1 (REV. 04)

Indoor airPLUS

CONSTRUCTION SPECIFICATIONS

February 2018
www.epa.gov/indoorairplus

Indoor Air Quality (IAQ)

Indoor airPLUS Version 1 (Rev. 04) Verification Checklist

City: State: Zip:

Radon Zone (1-3):

s (Refer to full Indoor airPLUS Construction Specifications for details)	Must Correct	Builder Verified	Rater Verified	N/A
ecklist reflects only the additional Indoor airPLUS requirements and their n numbers that must be met after completing the ENERGY STAR GY STAR remains a prerequisite for Indoor airPLUS qualification.				
h 3 (or 3.1, 3.2) Program Requirements must be followed and the home shall ified in conjunction with Indoor airPLUS qualification.	☐		☐	
p pump installed in basements and crawlspaces. In EPA Radon Zone 1, check talled.	☐	☐	☐	☐
plied: ☐ Slab-on-grade foundation ☐ Free-draining soils				
egate or sand (4 in.) with geotextile matting installed below slabs AND radon sed in EPA Radon Zone 1.	☐	☐	☐	☐
plied: ☐ Slab-on-grade foundation ☐ Free-draining soils ☐ Dry climate				
rawlspaces insulated, sealed and conditioned.	☐	☐	☐	☐
plied: ☐ 100-year flood zone ☐ Marine climate ☐ Dry climate rawlspace sealed with capillary break and active dehumidification ☐ Raised pier foundation with no walls				
om water splash damage if no gutters.	☐	☐	☐	☐
plied: ☐ Rainwater harvesting system ☐ Dry climates				
in exterior walls insulated with pipe wrap.	☐	☐	☐	☐
plied: ☐ Dry climate AND climate zone 1-3 ☐ Air barrier insulation in wall cavity				
flooring in kitchens, baths, entry, laundry, and utility rooms.	☐	☐	☐	
nt features installed in Radon Zone 1 homes in accordance with Construction 2.1.	☐	☐	☐	☐
plied: ☐ Perimeter pipe loop in lieu of full aggregate (dry climate) ☐ Manufactured home with raised pier foundation				
of rodent/bird screens installed at all openings that cannot be fully sealed. for clothes dryer vents.)	☐	☐	☐	
lected to keep relative humidity < 60% in "Warm-Humid" climates.	☐		☐	☐
plied: ☐ Climate zones 4-8, 3B, 3C and portions of 3A and 2B				
protected from construction debris AND no building cavities used as air turns.	☐	☐	☐	
g equipment or ductwork installed in garage.	☐		☐	
s vented to the outdoors or plumbed to a drain according to manufacturer's	☐		☐	
d-air HVAC system(s) have minimum MERV 8 filter AND no ozone generators porary filter installed to protect unit from construction dust.	☐	☐	☐	☐
ndards met for fuel-burning and space-heating appliances.	☐		☐	☐
ance type: eater ☐ Factory-built wood-burning fireplace ☐ Wood stove ☐ Pellet stove s/propane fireplace odel name/number:_____				
talled in each sleeping zone (e.g., common hallway) according to NFPA 720.	☐		☐	☐
uildings: Smoking restrictions implemented AND ETS transfer pathways	☐	☐	☐	☐
ages: Door closer installed on all connecting doors.	☐		☐	☐
ages: In homes with exhaust-only whole-house ventilation EITHER aust fan installed in garage OR est conducted to verify the effectiveness of the garage-to-house air barrier.	☐		☐	☐

wood products certified low-emission. See spec.	☐	☐	☐	
and finishes certified low-emission. See spec.	☐	☐	☐	
adhesives, and carpet cushion certified low-emission. See spec.	☐	☐	☐	☐
nd ductwork verified to be dry and clean AND new filter installed.	☐	☐	☐	
d before occupancy.	☐	☐	☐	
nuals, Indoor airPLUS label, and certificate provided for owner/occupant.	☐	☐	☐	

_____ Builder Company: _____

_____ Builder Employee: _____

Date:_____ Builder Signature: _____ Date: _____

mpleting the Indoor airPLUS Verification Checklist:

homes verified to comply with these specifications can earn the Indoor airPLUS
or full descriptions of the requirements, terms, exceptions, abbreviations, references and climate map used in this
complete until this checklist is completed in full and signed.

s and exceptions will always be utilized unless otherwise noted in the Indoor airPLUS Construction Specifications.
S modifies or excludes certain ENERGY STAR exceptions or alternate pathways.

k "N/A" for specifications that do not apply for specific conditions (e.g., climate) according to the exceptions
US Construction Specifications. Check either "Builder Verified" or "Rater Verified" for all other items to indicate
s may be verified visually on site during construction, by reviewing photographs taken during construction, by
through equivalent methods as appropriate.

e verification, or a responsible party from the Rater's company, must sign the completed verification checklist.
e checklist if any items in the "Builder Verified" column are checked, and by so doing accepts full responsibility for
et Indoor airPLUS requirements.

ng documentation, all required ENERGY STAR Certified Homes documentation, and the Indoor airPLUS
home for a minimum of 2 years from final verification. The Rater shall coordinate with the Provider and/or
airPLUS label and certificate for each qualified home.

Sampling Provider are permitted to use a RESNET-approved sampling protocol for Indoor airPLUS homes located
pling protocol approved by the California Energy Commission for homes located in California, to verify any item
For example, if the approved sampling protocol requires rating one in seven homes, then the checklist will be
that was rated. Only Raters are permitted to use sampling. All items verified by the builder shall be verified for
within a multifamily building. For example, if a Rater verifies 10 items on the Indoor airPLUS Checklist and the
checklist items, then an approved sampling protocol is permitted to be used only on the 10 Rater-verified items.

ovide the Rater with a single signed copy of the checklist for an entire building or group of units with builder-
dition that all units within the building or group utilize: 1) the same HVAC system type (i.e. ductless mini-split,
ame combustion appliances and combustion pollutant controls; and 3) the same low-emission materials
products (within their respective categories) verified in Section 6 of the Indoor airPLUS Construction
builder-verified items, the Rater may also utilize one checklist per group of units if the above criteria are met.
he following conditions will require a separate and unique checklist to be completed and signed by the Rater and

HVAC system type (i.e., ductless mini-split, forced air, hydronic);

combustion appliance types (e.g., masonry heater, pellet stove, wood-burning fireplace) stove, factory-built, etc.)
controls; or Any units/groups with low-emission materials or finishes addressed in Section 6 that are compliant
fications/standards within their product category.

Raters may use a single checklist for units utilizing low-emission materials certified to different labels or
t documentation of the certifications for those materials are retained by the builder and available for inspection

the Indoor airPLUS
ov/indoorairplus.

All Indoor airPLUS qualified homes meet strict guidelines for energy efficiency set by ENERGY STAR, the nationally-recognized symbol for energy efficiency.

Materials	6.1	All composite wood products certified low-emission. See spec.	☐	☐	☐	
	6.2	Interior paints and finishes certified low-emission. See spec.	☐	☐	☐	
	6.3	Carpet, carpet adhesives, and carpet cushion certified low-emission. See spec.	☐	☐	☐	☐
Final	7.1	HVAC system and ductwork verified to be dry and clean AND new filter installed.	☐	☐	☐	
	7.2	Home ventilated before occupancy.	☐	☐	☐	
	7.3	Equipment manuals, Indoor airPLUS label, and certificate provided for owner/occupant.	☐	☐	☐	

Rater Company: _____	**Builder Company:** _____
Rater Employee: _____	**Builder Employee:** _____
Rater Signature: _____ **Date:** _____	**Builder Signature:** _____ **Date:** _____

Guidance for Completing the Indoor airPLUS Verification Checklist:

1. Only ENERGY STAR certified homes verified to comply with these specifications can earn the Indoor airPLUS label. See Indoor airPLUS Construction Specifications for full descriptions of the requirements, terms, exceptions, abbreviations, references and climate map used in this checklist. Verification is not complete until this checklist is completed in full and signed.

   Note: ENERGY STAR footnotes and exceptions will always be utilized unless otherwise noted in the Indoor airPLUS Construction Specifications. In some cases, Indoor airPLUS modifies or excludes certain ENERGY STAR exceptions or alternate pathways.

2. Check one box per line. Check “N/A” for specifications that do not apply for specific conditions (e.g., climate) according to the exceptions described in the Indoor airPLUS Construction Specifications. Check either “Builder Verified” or “Rater Verified” for all other items to indicate who verified each item. Items may be verified visually on site during construction, by reviewing photographs taken during construction, by checking documentation, or through equivalent methods as appropriate.

6.2 Interior Paints and Finishes

Indoor airPLUS Requirements:

- At least 90 percent of the interior surface area covered by site-applied paints and coatings shall use low-VOC or no-VOC products certified by one of the following third-party standards or certifications:
  - GREENGUARD or GREENGUARD GOLD Certification for Paints and Coatings, **OR**
  - Scientific Certification Systems (SCS) Standard EC-10.3-2014, Indoor Advantage Gold, **OR**
  - A third-party low-emitting product list based on CA Section 01350 (CDPH Standard Method V1.2-2017), **OR**
  - Green Seal Standard GS-11, **OR**
  - Green Wise and Green Wise Gold products, **OR**
  - Master Painters Institute (MPI) Green Performance Standards X-Green, GPS-1 or GPS-2.

6.4 Adhesives and Sealants

Advisory: While not currently required by Indoor airPLUS, EPA recommends that at least 90 percent of site-applied interior adhesives and sealants be low-VOC or no-VOC products certified by one of the following third-party standards or certifications:

- A third-party low-emitting product list based on CA Section 01350 (CDPH Standard Method V1.2-2010), **OR**
- Green Seal GS-36, **OR**
- GREENGUARD or GREENGUARD GOLD certification for adhesives and sealants.

- Hardwood plywood: Use only products certified compliant with:
  - Formaldehyde emissions requirements of ANSI/HPVA HP-1-2016; **OR**
  - California Air Resources Board (CARB) Airborne Toxics Control Measure (ATCM) Phase II to Reduce Formaldehyde Emissions from Composite Wood Products; **OR**
  - EPA Toxic Substances Control Act (TSCA) Title VI certified.

EPA
United States
Environmental Protection
Agency

Indoor AirPlus Verification Requirements

VERSION 2

July 2024

www.epa.gov/indoorairplus

Indoor Air Quality (IAQ)

y: Microwave-range hood exhaust airflow not measured; meets additional			
y: Downdraft exhaust fan installed with electric cooktop and ≥ 300 CFM.			
aust is present in the kitchen, exhaust grille meets cooking equipment separation MERV 3 or washable filter.	☐	☐	☐
en exhaust rated ≤ 1 sone at airflow ≥ 25 CFM. d kitchen exhaust rated ≤ 2 sone at airflow ≥ 100 CFM. , HRV, in-line fan ☐ Remote-mounted fan	☐	☐	☐
entilation air provided directly from outdoors and inlets meet separation distances.	☐	☐	☐
entilation and exhaust measured to meet or exceed ASHRAE 62.1-2019.	☐	☐	☐
tion, common space ventilation outdoor air passes through a filter rated: igher (CERTIFIED) ☐ MERV 13 or higher (GOLD)	☐	☐	☐
er is accessible for maintenance.	☐	☐	☐
ystems exhaust outdoors and ≥ 10 ft. from ventilation air inlets.	☐	☐	☐
ryers exhaust outdoors.	☐	☐	☐
n, ducted HAC systems include clean filters rated: igher (CERTIFIED) ☐ MERV 13 or higher (GOLD) elling units with portable air cleaners: TIFIED) ☐ MERV 11 (GOLD)	☐	☐	☐
ters are accessible for cleaning and/or replacement.	☐	☐	☐
els are gasketed and/or sealed.	☐	☐	☐
mechanically supplied outdoor air pass through a filter.	☐	☐	☐
aners do not generate ozone exceeding concentration limits of 0.005 ppm.	☐	☐	☐
s or devices intentionally using ozone not installed.	☐	☐	-
e following filtration methods provided for dwelling units with no ducted HAC gher ☐ Portable air cleaners ☐ Transfer fan w/ MERV 13 or higher	☐	☐	☐
air cleaning devices are installed, ozone is not intentionally used.	☐	☐	☐
UVGI or other electronic air cleaners (e.g., plasma generators, PCOs, etc.) must not ncentration limits of 0.005ppm.	☐	☐	☐
	Must Correct	**Verified**	**N/A**
oor AirPlus requirements shown in *italics* are satisfied by meeting related ENERGY STAR requirements, and tions are permitted unless otherwise specified.			
aturally drafted appliances meet max depressurization and exhaust location ustion furnaces, boilers, water heaters mechanically drafted or direct-vented.	☐	☐	☐
nically drafted or direct-vented.	☐	☐	☐
burning fireplaces have tempered glass front or gasketed door.	☐	☐	☐
mbustion appliances other than cooktops/ranges/ovens.	☐	☐	-
s and flues pass professional Level II inspection per NFPA 211.	☐	☐	☐
g appliances meet the following requirements (check where applicable): nny fireplaces sealed to prevent use or are retrofitted ood burning fireplaces have dedicated outdoor air & meet UL 127 eplace inserts meet UL 1482 and the EPA's New Source Performance Standards eet ASTM E1509 and the EPA's New Source Performance Standards	☐	☐	☐
talled according to 2021 IBC Section 915 or 2021 IRC Section R315.	☐	☐	☐
protected from dust, paint, and contaminants during construction.	☐	☐	☐
ed with the EPA's brochure or resource guide on secondhand smoke.	☐	☐	☐
uildings, smoking/vaping prohibition is posted in common areas and communicated in	☐	☐	☐
uildings, where provided, designated outdoor smoking/vaping areas located a from entries, outdoor air intakes, and operable windows.	☐	☐	☐
basements not vented, and perimeter walls sealed.	☐	☐	☐
g in accordance with ANSI/RESNET/ICC Std. 380 is met: etached dwelling units > 1,000 ft², ≤ 5 ACH50 other units ≤ 0.30 CFM50/sf encl. ed dwelling units > 1,000 ft², ≤ 3 ACH50 r units ≤ 0.25 CFM50/sf encl.	☐	☐	-
ween garages and occupiable spaces are air-sealed and doors are gasketed or	☐	☐	☐
nily dwellings and townhouses with attached private garages: conducted to verify effectiveness of garage-to-house air barrier; **OR** talled in garage and Verifier-measured airflow ≥ 100 CFM	☐	☐	☐
uildings, where an exhaust system is installed in a shared parking garage, system NO2 sensors, meeting minimum continuous ventilation rates.	☐	☐	☐
iquid or gas fuels stored within the building's pressure boundary.	☐	☐	-
rtable combustion equipment not operated or stored within the building's pressure	☐	☐	-

ed)	**Must Correct**	**Verified**	**N/A**
ing Products guide to help identify compliant products,			
meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
eet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
t VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
derlayment meet VOC emission limits in CDPH Standard Method V1.2-	☐	☐	☐
int compound meet VOC emission limits in CDPH Standard Method V1.2-	☐	☐	☐
eet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
	Must Correct	**Verified**	**N/A**
for the following newly installed appliances and systems. ories ntilation systems systems itors	Builder Responsibility		
recommendations and filter change schedule provided.	Builder Responsibility		

gible print, except for "Initials" which can be signed/initialed either manually or digitally in this

	Home Certification Organization			
	First Inspection Date		**Initials**	
	Final Inspection Date		**Initials**	

Section 6 – Building Materials (newly installed)		Must Correct	Verified	N/A
Download the *Indoor AirPlus Compliant Building Products* guide to help identify compliant products,				
6.1	6.1.1 Paints, finishes, and coatings meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
6.2	6.2.1 Carpet and carpet cushions meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
6.3	6.3.1 Adhesives and sealants meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
6.4	6.4.1 Hard surface flooring and underlayment meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
6.5	6.5.1 Interior gypsum board and joint compound meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐
6.6	6.6.1 GOLD: Insulation materials meet VOC emission limits in CDPH Standard Method V1.2-2017.	☐	☐	☐

Section 7 – Occupant Education		Must Correct	Verified	N/A
7.1	7.1.1 Instruction manuals provided for the following newly installed appliances and systems. ■ HAC systems and accessories ■ Local and dwelling-unit ventilation systems ■ Kitchen and bath exhaust systems ■ Air cleaners ■ Dehumidifiers ■ Moisture and/or IAQ monitors ■ Combustion appliances ■ Sump pumps ■ Radon systems	Builder Responsibility		
	7.1.2 Owner-occupied units: O&M recommendations and filter change schedule provided.	Builder Responsibility		

The following fields shall be completed in legible print, except for "Initials" which can be signed/initialed either manually or digitally in this format or through HCO-approved software.

Verifier Organization		**Home Certification Organization**	

Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers

Version 1.2

*(Emission testing method for **California Specification 01350.***
Supersedes the previous version of
Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers)

Prepared by:

Indoor Air Quality Section
Environmental Health Laboratory Branch
Division of Environmental and Occupational Disease Control
California Department of Public Health

January 2017

California Department of Public Health
Dr. Karen Smith, Director

California Health and Human Services Agency
Diana Dooley, Secretary

State of California
Edmund G. Brown Jr., Governor

Indoor AirPlus: How to Find Compliant Building Materials

July 2024

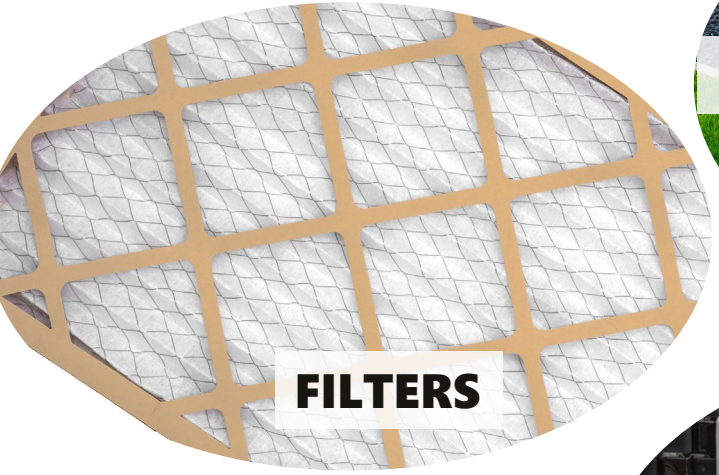
Office of Air and Radiation
EPA 402/K-24/002 | July 2024

WHAT BELONGS IN SPECIFICATIONS?

1. Nothing
2. Include as Appendix
3. List in Division 1 – Passive Building Requirements
4. Disperse in Technical Specifications

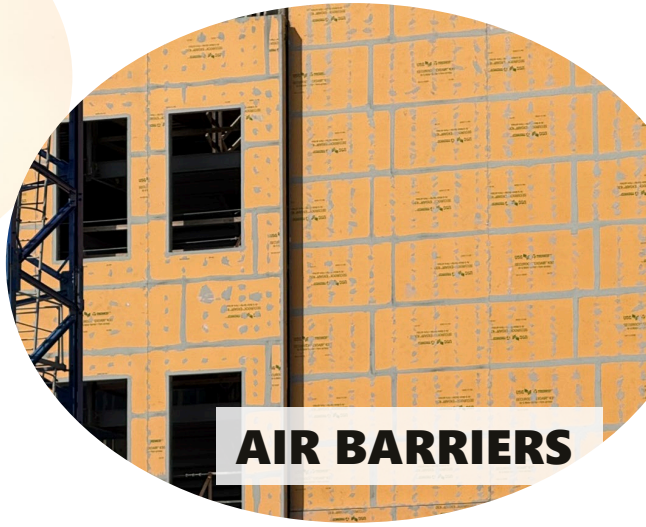

MECH EQUIP


APPLIANCES


FILTERS


BLINDS


FIXTURES


AIR BARRIERS


INSULATION


INSULATION


WINDOWS


LIGHTING

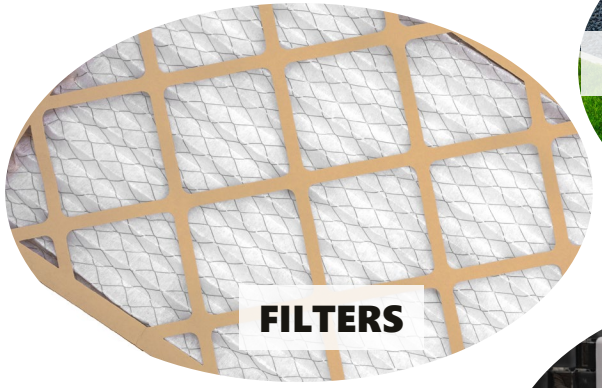
Performance vs. prescriptive

ENCLOSURES

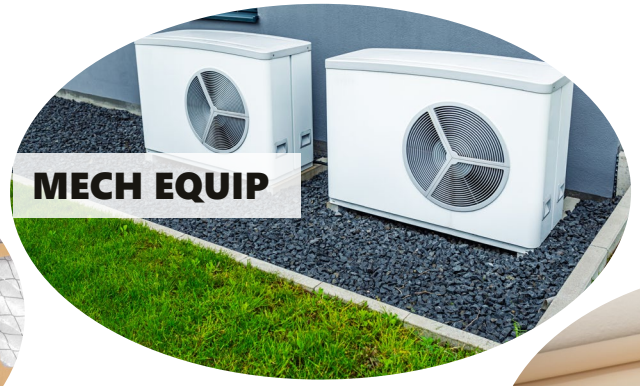
INTERIORS

MEP

ENCLOSURES



INTERIORS

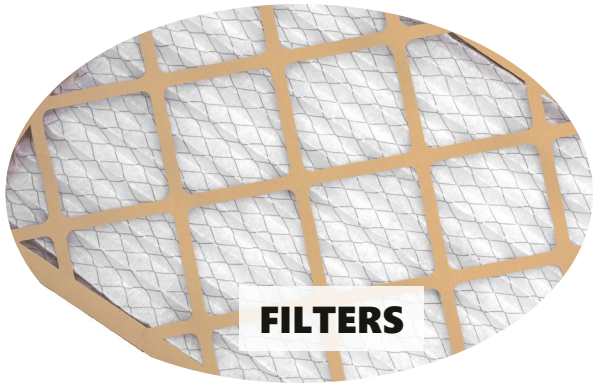


MEP

ENCLOSURES

INTERIORS

MEP



PERFORMANCE vs. PRESCRIPTIVE

PERFORMANCE	PRESCRIPTIVE
U-Frame	Manufacturer
U-Glass	Product
Solar Heat Gain Coefficient	Glass Makeup
Condensation Resistance Factor	Low-E Coating

PERFORMANCE

VS.

PRESCRIPTIVE

B. Basis-of-Design Manufacturer: Intus Windows.

1. Series: Supera Fixed & Supera CW, Flangeless.
2. Operation: Casement, Fixed.
3. Finish: To be selected by Architect.
4. Accessories

    a. Brick Extension
    b. Strap anchors, structural aluminum
    c. Screen with operable windows
    d. WOCD (window operation control devise)

5. Performance, Assembly, Supera Fixed.

    a. U-value: 0.14.
    b. Air Infiltration Rate: <0.1 cfm/sq ft.
    c. Water Penetration: 9.19 psf.
    d. Acoustic Performance: STC of 31 and OITC of 25.
    e. PSI-opaque: TBD

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Manufacturer: Okonoplat Pava, finish as selected by Architect from manufacturer's full range including 'non-standard colors.'

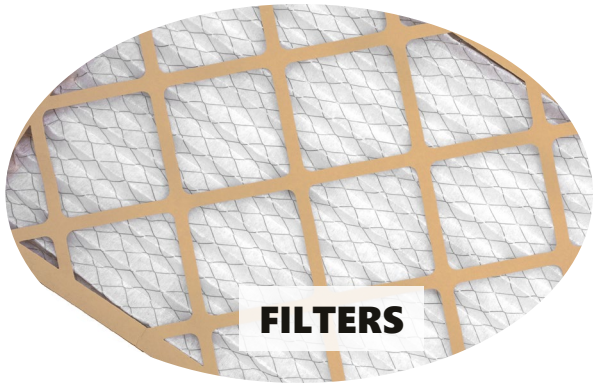
1. Vision Glass: Viracon VE1-2M or equal.

B. Available Manufacturer: Intus Supera 74

ENCLOSURES

INTERIORS

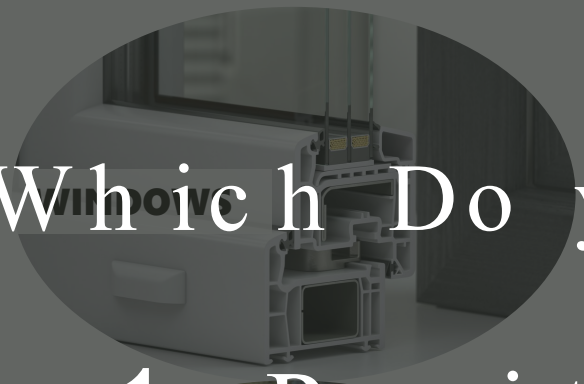
MEP

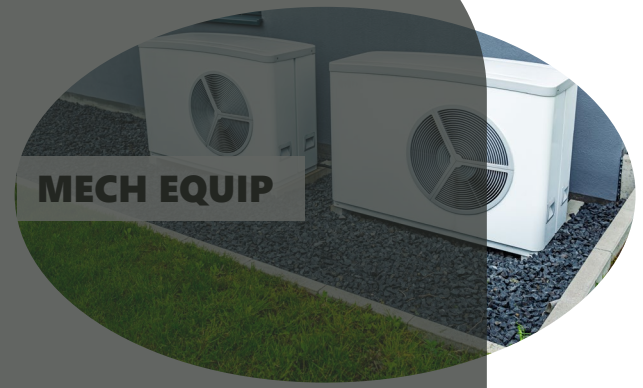


ENCLOSURES

INTERIORS

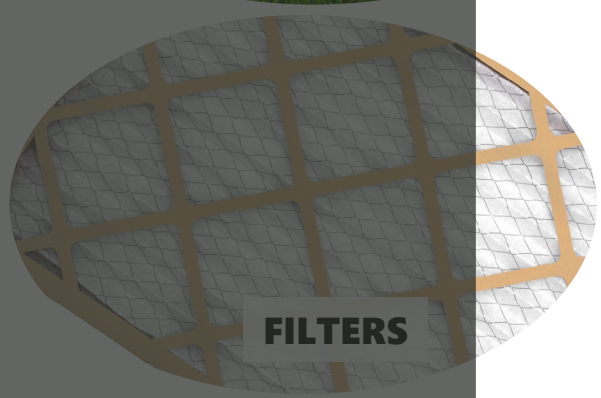
MEP





Which Do you Prefer?

1. Prescriptive as much as possible
2. Performance per WUFI Passive
3. It depends…



Construction Verification

phius Quality Control Field Checklist, v24.1.1

(September 2025)

Project #_____ Project Name_____ City_____ State____

1 - Building Envelope

1.0	**Site Photos** *Scan QR Code to view examples of site photos, Don'ts and Do's:*		
1.0.1	**Insulated Assemblies:**	Rater/Verifier Confirmed	N/A
	Take photos of all insulated assemblies, to include measured insulation thickness and material type. Include photos that show context and clearly show depth, quality, and area(s) insulated. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
1.0.1.1	Footings	☐	☐
1.0.1.2	Foundation Wall	☐	☐
1.0.1.3	Slab (including perimeter)	☐	☐
1.0.1.4	Framed Floor	☐	☐
1.0.1.5	Above-Grade Wall (interior and exterior insulation as applicable)	☐	☐
1.0.1.6	Ceiling/Attic (interior and exterior insulation as applicable)	☐	☐
Notes:			
1.0.2	**Windows & Doors:**	Rater/Verifier Confirmed	N/A
	Take a photo of the NFRC label, if available. Include photos that show window installed, U-value, and SHGC. Save photos into project folder: 4. PHIUS+ On-Site Verification. If NFRC data is not available, see requirements within the Key Documents tab, Building Envelope section of the Rater/Verifier Workbook.		
1.0.2.1	NFRC label on Fixed Window(s)	☐	☐
1.0.2.2	NFRC label on Operable Window(s)	☐	☐
1.0.2.3	NFRC label on Skylight (s)	☐	☐
1.0.2.4	NFRC label on Glazed Door(s)	☐	☐
1.0.2.5	Photo of Opaque Door(s)	☐	☐
1.0.2.6	Photo of exterior access doors (roof access, attic access, etc.)	☐	☐
Notes:			
1.0.3	**Infrared Photos:**	Rater/Verifier Confirmed	N/A
	Perform a thorough IR scan of the building thermal envelope. Provide representative photos, including, but not limited to: areas of walls, corners, window frames, suspended floors, overhangs, and roofs. Include photos that indicate any thermal bridges. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
1.0.3.1	Above-Grade Walls	☐	☐
1.0.3.2	Ceiling/Attic	☐	☐
1.0.3.3	Window Installed	☐	☐
1.0.3.4	Framed Floor over unconditioned spaces	☐	☐
Notes			
1.0.4	**General Exterior:**	Rater/Verifier Confirmed	N/A
	Take exterior photos of each elevation and significant architectural features including balconies, overhangs and shading devices. Take photos of the areas surrounding, and adjacent to the building. Include photos that show any nearby structures, natural features or vegetation that can cause shading on the building. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
1.0.4.1	Radon system piping (where applicable)	☐	
1.0.4.2	Photos of Each Exterior Elevation	☐	
1.0.4.3	Overhangs & Shading	☐	
1.0.4.4	Surrounding Site and adjacent obstructions	☐	
Notes:			

phius Quality Control Field Che

(September 2025)

1.1	**Field Verification** *Rater/Verifier is responsible for verifying the tasks below ha*
1.1.1	**Architectural Features, Insulation, and Thermal Bridging**
1.1.1.1	**Drawings Check:** Describe any significant variations in construction from th construction drawings and specifications (insulation, window sizes, window performance, fixed shading etc.).
Notes:	
1.1.1.2	**Framing Inspection:** Framing matches architectural plans (depth & spacing, 2x6 16" O.C.). If not, please describe in notes section below.
Notes:	
1.1.1.3	**Operable Shading:** If operable shading has been installed, describe operable shading.
Notes:	
1.1.1.4	**Insulation R-Value:** All insulation R-values match those listed on architectura plans. If not, please describe in notes section below.
Notes:	
1.1.1.5	**Insulation Quality Check:** All insulated assemblies have achieved a RESNET I cavity insulation level, or alternatively Grade II with continuous insulation.
Notes:	
1.1.1.6	**Fastener Quality Check:** In the box below, describe the material of fastener to install exterior insulation (aluminum, mild steel, stainless steel, plastic, etc.
Notes:	
1.1.1.7	**Thermal Bridging/mitigation strategy identification:** In the box below, Rater/Verifier has noted any thermal bridges in the assembly observed on the project and strategies used for mitigation. Describe and provide photo documentation where such details are missed.
Notes:	**Describe any thermal bridges present and/or mitigation strategies:**
1.1.2	**Whole Building Airtightness Testing:**
1.1.2.1	**Mid-Construction Airtightness Testing:** This is an optional, but recommend test. (This test is required for Phius Prescriptive Path projects.)
1.1.2.2	**Final Airtightness Testing:** If a Multifamily building, provide to Phius a Whol Building Blower Door testing plan. Conduct multi-point blower door tests for depressurization and pressurization, following building set-up per Phius Certification Guidebook & ANSI/RESNET/ICC Std 380-2022. Enter data into the Building Envelope tab of the QA Workbook and upload testing plan & report i project folder: 4. PHIUS+ On-Site Verification.
Notes:	

y Control Field Checklist, v24.1.1

(September 2025)

City State

1 - Building Envelope

Site Photos

R Code to view examples of site photos, Don'ts and Do's:

s:	Rater/Verifier Confirmed	N/A
blies, to include measured insulation thickness and material type. Include photos that show context and ea(s) insulated. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
	☐	☐
	☐	☐
r)	☐	☐
	☐	☐
or and exterior insulation as applicable)	☐	☐
d exterior insulation as applicable)	☐	☐

	Rater/Verifier Confirmed	N/A
available. Include photos that show window installed, U-value, and SHGC. Save photos into project folder: 4. RC data is not available, see requirements within the Key Documents tab, Building Envelope section of the		
dow(s)	☐	☐
Window(s)	☐	☐
)	☐	☐
or(s)	☐	☐
	☐	☐
doors (roof access, attic access, etc.)	☐	☐

	Rater/Verifier Confirmed	N/A
building thermal envelope. Provide representative photos, including, but not limited to: areas of walls, ed floors, overhangs, and roofs. Include photos that indicate any thermal bridges. Save photos into project on.		
	☐	☐
	☐	☐
	☐	☐
ditioned spaces	☐	☐

	Rater/Verifier Confirmed	N/A
tion and significant architectural features including balconies, overhangs and shading devices. Take photos acent to the building. Include photos that show any nearby structures, natural features or vegetation that . Save photos into project folder: 4. PHIUS+ On-Site Verification.		
ere applicable)	☐	
levation	☐	
	☐	
acent obstructions	☐	

phius Quality Control Field Checklist, v24.1.1

(September 2025)

1.1	Field Verification *Rater/Verifier is responsible for verifying the tasks below have been completed:*			
1.1.1	**Architectural Features, Insulation, and Thermal Bridging**	Rater/Verifier Confirmed	N/A	PROG REQ.
1.1.1.1	**Drawings Check:** Describe any significant variations in construction from the construction drawings and specifications (insulation, window sizes, window performance, fixed shading etc.).	☐	☐	ALL
Notes:				
1.1.1.2	**Framing Inspection:** Framing matches architectural plans (depth & spacing, e.g., 2x6 16" O.C.). If not, please describe in notes section below.	☐	☐	ALL
Notes:				
1.1.1.3	**Operable Shading:** If operable shading has been installed, describe operable shading.	☐	☐	ALL
Notes:				
1.1.1.4	**Insulation R-Value:** All insulation R-values match those listed on architectural plans. If not, please describe in notes section below.	☐	☐	ALL
Notes:				
1.1.1.5	**Insulation Quality Check:** All insulated assemblies have achieved a RESNET Grade I cavity insulation level, or alternatively Grade II with continuous insulation.	☐	☐	ENERGY STAR
Notes:				
1.1.1.6	**Fastener Quality Check:** In the box below, describe the material of fastener used to install exterior insulation (aluminum, mild steel, stainless steel, plastic, etc.).	☐	☐	Phius
Notes:				
1.1.1.7	**Thermal Bridging/mitigation strategy identification:** In the box below, Rater/Verifier has noted any thermal bridges in the assembly observed on the project and strategies used for mitigation. Describe and provide photo documentation where such details are missed.	☐	☐	Phius
Notes:	**Describe any thermal bridges present and/or mitigation strategies:**			
1.1.2	**Whole Building Airtightness Testing:**	Rater/Verifier Confirmed	N/A	PROG REQ.
1.1.2.1	**Mid-Construction Airtightness Testing:** This is an optional, but recommended test. (This test is required for Phius Prescriptive Path projects.)	☐	☐	Phius
1.1.2.2	**Final Airtightness Testing:** If a Multifamily building, provide to Phius a Whole Building Blower Door testing plan. Conduct multi-point blower door tests for depressurization and pressurization, following building set-up per Phius Certification Guidebook & ANSI/RESNET/ICC Std 380-2022. Enter data into the Building Envelope tab of the QA Workbook and upload testing plan & report into project folder: 4. PHIUS+ On-Site Verification.	☐		
Notes:				

phius Quality Control Field Chec

(September 2025)

1.1.3	**Compartmentalization Airtightness Testing:**
1.1.3.1	**Requirements:** Required for Townhouse & multifamily dwelling units.
1.1.3.2	**Compartmentalization Airtightness Testing:** Conduct compartmentalizatio airtightness testing of individual dwelling units in accordance with Phius Guide and ANSI/RESNET/ICC Std 380-2022. The maximum air leakage shall be 0.3 CFM50/sq ft** of dwelling unit Envelope Surface Area. Enter results into th Building Envelope tab of the QA Workbook, and upload testing report into proj folder: 4. PHIUS+ On-Site Verification. ** Note 0.3 CFM50/sq ft shall be the target rate until such time EPA or DOE programs require a tighter value.
Notes:	

y Control Field Checklist, v24.1.1

(September 2025)

Field Verification

fier is responsible for verifying the tasks below have been completed:

nsulation, and Thermal Bridging	Rater/Verifier Confirmed	N/A	PROG REQ.
significant variations in construction from the ifications (insulation, window sizes, window .	☐	☐	ALL
natches architectural plans (depth & spacing, e.g., ribe in notes section below.	☐	☐	ALL
shading has been installed, describe operable	☐	☐	ALL
on R-values match those listed on architectural notes section below.	☐	☐	ALL
sulated assemblies have achieved a RESNET Grade atively Grade II with continuous insulation.	☐	☐	ENERGY STAR
e box below, describe the material of fastener used minum, mild steel, stainless steel, plastic, etc.).	☐	☐	Phius
trategy identification: In the box below, rmal bridges in the assembly observed on the nitigation. Describe and provide photo ils are missed.	☐	☐	Phius
present and/or mitigation strategies:			

ess Testing:	Rater/Verifier Confirmed	N/A	PROG REQ.
Testing: This is an optional, but recommended ius Prescriptive Path projects.)	☐	☐	Phius
Multifamily building, provide to Phius a Whole n. Conduct multi-point blower door tests for tion, following building set-up per Phius RESNET/ICC Std 380-2022. Enter data into the Workbook and upload testing plan & report into e Verification.	☐		

phius Quality Control Field Checklist, v24.1.1

(September 2025)

1.1.3	Compartmentalization Airtightness Testing:	Verifier Confirmed	N/A	PROG REQ.
1.1.3.1	**Requirements:** Required for Townhouse & multifamily dwelling units.	☐	☐	Phius
1.1.3.2	**Compartmentalization Airtightness Testing:** Conduct compartmentalization airtightness testing of individual dwelling units in accordance with Phius Guidebook and ANSI/RESNET/ICC Std 380-2022. The maximum air leakage shall be 0.3 CFM50/sq ft** of dwelling unit Envelope Surface Area. Enter results into the Building Envelope tab of the QA Workbook, and upload testing report into project folder: 4. PHIUS+ On-Site Verification. ** Note 0.3 CFM50/sq ft shall be the target rate until such time EPA or DOE programs require a tighter value.	☐	☐	
Notes:				

phius Quality Control Field Chec

(September 2025)

Project # Project Name City

2 – Ventilation

2.0	Site Photos *Scan QR Code to view examples of site photos, Don'ts and Do's*
2.0.1	**Site Photos of Ventilation Systems:**
	Take photos of each installed ventilation system and auxiliary ventilation system defrost equipment (ground loop) and nameplate (manufacturer, model number). Include photos that show context. Sav Verification.
2.0.1.1	**HRV or ERV**
2.0.1.2	**Auxiliary Ventilation Equipment**
Notes:	

2.1	Field Verification *Rater/Verifier is responsible for verifying the tasks below have*	
2.1.1	**General:**	
2.1.1.1	Ventilation air inlets and outlets for projects in Climate Zones 4-8 are installed ≥ 4' above grade and/or roof deck.	
2.1.1.2	Ventilation air comes directly from outdoors, not from adjacent dwelling units, common spaces, garages, crawlspaces, or attics.	
2.1.1.3	Outside supply air passes through a minimum MERV 8 filter prior to distribution.	
2.1.1.4	Filter is located to facilitate regular service by the occupant and/or building superintendent.	
2.1.1.5	Class 1 vapor retarder is installed over all air-permeable insulation (such as fiberglass duct wrap) on ventilation ducts connected to outside. Vapor retarder is continuous and sealed to building air barrier and ventilation unit with no gaps, breaks or holes.	
2.1.2	**Kitchens:**	
2.1.2.1	ERV/HRV exhaust register installed ≥ 6' from the nearest edge of the cooktop. ("stretched-string distance")	
2.1.2.2	**Designate which type of filter was installed (either or is acceptable):**	
	2.1.2.2.1	MERV 3+ filter for trapping grease at ERV/HRV exhaust register.
	2.1.2.2.2	Washable mesh filter for trapping grease in range hood.
2.1.2.3	**Installed range hood is one of the following (select one):**	
	2.1.2.3.1	Recirculating hood over range.
	2.1.2.3.2	Range hood exhausted directly to outside.
2.1.2.4	**Measured kitchen direct exhaust rates meets one of the following (select**	
	2.1.2.4.1	Meets Energy Star, IAP, and ZERH requirements for minimum kitchen exhaust airflow.
Notes:		

y Control Field Checklist, v24.1.1

(September 2025)

rtightness Testing:	Verifier Confirmed	N/A	PROG REQ.
wnhouse & multifamily dwelling units.	☐	☐	Phius
ness Testing: Conduct compartmentalization dwelling units in accordance with Phius Guidebook 22. The maximum air leakage shall be t Envelope Surface Area. Enter results into the Workbook, and upload testing report into project tion. the target rate until such time EPA or DOE	☐	☐	

phius Quality Control Field Checklist, v24.1.1

(September 2025)

Project # Project Name City State

2 – Ventilation

2.0 Site Photos

Scan QR Code to view examples of site photos, Don'ts and Do's:

	Site Photos of Ventilation Systems:	Rater/Verifier Confirmed	N/A
2.0.1	Take photos of each installed ventilation system and auxiliary ventilation system defrost equipment (electric, hot water loop from DHW tank, and ground loop) and nameplate (manufacturer, model number). Include photos that show context. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
2.0.1.1	**HRV or ERV**	☐	
2.0.1.2	**Auxiliary Ventilation Equipment**	☐	☐
Notes:			

2.1 Field Verification

Rater/Verifier is responsible for verifying the tasks below have been completed:

	General:	Rater/Verifier Confirmed	N/A	PROG REQ.
2.1.1.1	Ventilation air inlets and outlets for projects in Climate Zones 4-8 are installed ≥ 4' above grade and/or roof deck.	☐	☐	Phius
2.1.1.2	Ventilation air comes directly from outdoors, not from adjacent dwelling units, common spaces, garages, crawlspaces, or attics.	☐	☐	
2.1.1.3	Outside supply air passes through a minimum MERV 8 filter prior to distribution.	☐	☐	
2.1.1.4	Filter is located to facilitate regular service by the occupant and/or building superintendent.	☐	☐	
2.1.1.5	Class 1 vapor retarder is installed over all air-permeable insulation (such as fiberglass duct wrap) on ventilation ducts connected to outside. Vapor retarder is continuous and sealed to building air barrier and ventilation unit with no gaps, breaks or holes.	☐	☐	
2.1.2	**Kitchens:**	Rater/Verifier Confirmed	N/A	PROG REQ.
2.1.2.1	ERV/HRV exhaust register installed ≥ 6' from the nearest edge of the cooktop. ("stretched-string distance")	☐	☐	Phius
2.1.2.2	**Designate which type of filter was installed (either or is acceptable):**			
2.1.2.2.1	MERV 3+ filter for trapping grease at ERV/HRV exhaust register.	☐	☐	
2.1.2.2.2	Washable mesh filter for trapping grease in range hood.	☐	☐	
2.1.2.3	**Installed range hood is one of the following (select one):**			
2.1.2.3.1	Recirculating hood over range.	☐	☐	
2.1.2.3.2	Range hood exhausted directly to outside.	☐	☐	
2.1.2.4	**Measured kitchen direct exhaust rates meets one of the following (select one or more):**			
2.1.2.4.1	Meets Energy Star, IAP, and ZERH requirements for minimum kitchen exhaust airflow.	☐	☐	
Notes:				

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	Bedrooms:	
2.1.3	**Provision made to supply outdoor air to all bedrooms in dwelling units and 2.1.3.1.1 or 2.1.3.1.2. If complying with 2.1.3.1.1, skip to 2.1.3.2.**	
2.1.3.1	2.1.3.1.1	Dedicated outdoor air supply ventilation ductwork installed to all bedrooms.
	2.1.3.1.2	Outdoor air supply ventilation ductwork integrated with heating/cooling ductwork and is connected directly to the return plenum of the air handler (also complies with 2.1.3.1.2.1 and 2.1.3.1.2.2).
	2.1.3.1.2.1	ERV/HRV remains in balance under all fan speeds of the heating/cooling air handler.
	2.1.3.1.2.2	Air handler fan designed to run continuously by default. Air handler power (Watts) added to ventilation power (Watts), in calculation of W/cfm, and meets DOE ZERH efficacy requirements.
2.1.3.2	Bedrooms are pressure balanced to achieve a Rater/Verifier measured pressure difference of +/- 1 Pa with respect to the main body of the dwelling unit when al bedroom doors are closed and only the ventilation system is operating at desig speed.	
Notes:		

	Bathrooms:	
2.1.4	**Measured bathroom exhaust rates meets one of the following (select one)**	
2.1.4.1	2.1.4.1.1	≥20cfm continuous.
	2.1.4.1.2	≥50 cfm intermittent.

	Ventilation Auxiliary Systems:
2.1.5.1	If installed, enter type of ERV/HRV defrost - electric, hot water loop from DHW tank, ground loop into the Ventilation tab of the Workbook.
2.1.5.2	Project team has demonstrated the defrost control logic is set up properly.

2.1.6	Ventilation System Airflow Testing:	Rater/Verifi Confirmed
2.1.6.1	**ERV/HRV Ventilation System Airflow Testing:** Conduct ventilation system airflow testing. Enter data into Ventilation tab of QA Workbook, and if available, provide testing report into project folder: 4. PHIUS+ On-Site Verification.	☐
2.1.6.2	**Auxiliary Exhaust Ventilation System Airflow Testing:** Conduct ventilation system airflow testing, enter data into Ventilation tab of QA Workbook, and if available, provide testing report into project folder: 4. PHIUS+ On-Site Verification.	☐
Notes:		

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(September 2025)

City State

2 – Ventilation

Site Photos

de to view examples of site photos, Don'ts and Do's:

Systems:	Rater/Verifier Confirmed	N/A
stem and auxiliary ventilation system defrost equipment (electric, hot water loop from DHW tank, and r, model number). Include photos that show context. Save photos into project folder: 4. PHIUS+ On-Site		
	☐	
t	☐	☐

Field Verification

er is responsible for verifying the tasks below have been completed:

	Rater/Verifier Confirmed	N/A	PROG REQ.
or projects in Climate Zones 4-8 are installed	☐	☐	Phius
n outdoors, not from adjacent dwelling units, paces, or attics.	☐	☐	
n a minimum MERV 8 filter prior to	☐	☐	
r service by the occupant and/or building	☐	☐	
over all air-permeable insulation (such as n ducts connected to outside. Vapor to building air barrier and ventilation unit	☐	☐	
	Rater/Verifier Confirmed	N/A	PROG REQ.
d ≥ 6' from the nearest edge of the cooktop.	☐	☐	Phius
vas installed (either or is acceptable):			
apping grease at ERV/HRV exhaust register.	☐	☐	
r for trapping grease in range hood.	☐	☐	
he following (select one):			
ver range.	☐	☐	
ed directly to outside.	☐	☐	
st rates meets one of the following (select one or more):			
AP, and ZERH requirements for minimum ow.	☐	☐	

phius Quality Control Field Checklist, v24.1.1

(September 2025)

			Rater/Verifier Confirmed	N/A	PROG REQ.
2.1.3	**Bedrooms:**				
2.1.3.1	**Provision made to supply outdoor air to all bedrooms in dwelling units and comply with either 2.1.3.1.1 or 2.1.3.1.2. If complying with 2.1.3.1.1, skip to 2.1.3.2.**				Phius
	2.1.3.1.1	Dedicated outdoor air supply ventilation ductwork installed to all bedrooms.	☐	☐	
	2.1.3.1.2	Outdoor air supply ventilation ductwork integrated with heating/cooling ductwork and is connected directly to the return plenum of the air handler (also complies with 2.1.3.1.2.1 and 2.1.3.1.2.2).	☐	☐	
	2.1.3.1.2.1	ERV/HRV remains in balance under all fan speeds of the heating/cooling air handler.	☐	☐	
	2.1.3.1.2.2	Air handler fan designed to run continuously by default. Air handler power (Watts) added to ventilation power (Watts), in calculation of W/cfm, and meets DOE ZERH efficacy requirements.	☐	☐	
2.1.3.2	Bedrooms are pressure balanced to achieve a Rater/Verifier measured pressure difference of +/- 1 Pa with respect to the main body of the dwelling unit when all bedroom doors are closed and only the ventilation system is operating at design speed.		☐	☐	
Notes:					

			Rater/Verifier Confirmed	N/A	PROG REQ.
2.1.4	**Bathrooms:**				
2.1.4.1	**Measured bathroom exhaust rates meets one of the following (select one):**				Energy Star
	2.1.4.1.1	≥20cfm continuous.	☐	☐	
	2.1.4.1.2	≥50 cfm intermittent.	☐	☐	

		Rater/Verifier Confirmed	N/A	PROG REQ.
2.1.5	**Ventilation Auxiliary Systems:**			
2.1.5.1	If installed, enter type of ERV/HRV defrost - electric, hot water loop from DHW tank, ground loop into the Ventilation tab of the Workbook.	☐	☐	Phius
2.1.5.2	Project team has demonstrated the defrost control logic is set up properly.	☐	☐	

		Rater/Verifier Confirmed	Builder Confirmed	N/A	PROG REQ.
2.1.6	**Ventilation System Airflow Testing:**				
2.1.6.1	**ERV/HRV Ventilation System Airflow Testing:** Conduct ventilation system airflow testing. Enter data into Ventilation tab of QA Workbook, and if available, provide testing report into project folder: 4. PHIUS+ On-Site Verification.	☐	☐	☐	Phius
2.1.6.2	**Auxiliary Exhaust Ventilation System Airflow Testing:** Conduct ventilation system airflow testing, enter data into Ventilation tab of QA Workbook, and if available, provide testing report into project folder: 4. PHIUS+ On-Site Verification.	☐	☐	☐	
Notes:					

phius Quality Control Field Checl

(September 2025)

Project # Project Name City

3 – Heating & Cooling

3.0	**Site Photos** *Scan QR Code to view examples of site photos, Don'ts and Do's:*
3.0.1	**Site Photos of Heating & Cooling Systems:**
	Take photos of each installed heating & cooling system and nameplate (manufacturer, model number). nameplate. Save photos into project folder: 4. PHIUS+ On-Site Verification.
3.0.1.1	**Heating & Cooling System**
Notes	

3.1	**Field Verification** *Rater/Verifier is responsible for verifying the tasks below have be*
3.1.1	**Combustion Equipment:**
3.1.1.1	If combustion equipment for space heating is included in the project, provide a dedicated branch circuit, in compliance with DOE ZERH v2 NPR Exhibit 1, Item 11. Branch circuit shall be labeled "For Future Heat Pump Space Conditioning."
3.1.1.2	Combustion furnaces, boilers and/or water heaters located within the buildings' pressure boundary are sealed combustion, direct-vent appliances.
3.1.1.3	Natural draft fireplaces are not installed.
3.1.1.4	Installed woodstoves have a combustion air inlet connected to the firebox.
3.1.2	**Controls:**
3.1.2.1	Heating/Cooling System Fan - air flow is produced when thermostat is set to "fan on", Heated air flow is produced when thermostat is set to "Heat", Cooling air flow is produced when thermostat is set to "Cool".
3.1.3	**Condensation Management:**
3.1.3.1	Ensure condensate drain provided for cooling system evaporator coil or a condensate drain is located within 3 feet.
3.1.3.2	Corrosion-resistant drain pan, properly sloped to drainage system is included with each HVAC component that produces condensate.
3.1.4	**Distribution System Layout:**
3.1.4.1	Duct installation reasonably matches design layout.
3.1.5	**Heating/Cooling Distribution System Testing:**
3.1.5.1	**Ducted Heating/Cooling Distribution System Testing:** Conduct leakage testing and balancing of ducted heating/cooling distribution system, enter data into Heat & Cool tab of QA Workbook. Provide TAB report into project folder: 4. PHIUS+ On-Site Verification.
3.1.5.2	**Hydronic Heating/Cooling Distribution System Testing:** Collect documentation of testing of hydronic heating/cooling distribution system, enter data into Heat & Cool tab of QA Workbook, and provide report into project folder: 4. PHIUS+ On-Site Verification.
Notes:	

ity Control Field Checklist, v24.1.1

(September 2025)

	Rater/Verifier Confirmed	N/A	PROG REQ.
utdoor air to all bedrooms in dwelling units and comply with either plying with 2.1.3.1.1, skip to 2.1.3.2.			
oor air supply ventilation ductwork installed to all	☐	☐	
ply ventilation ductwork integrated with ductwork and is connected directly to the return r handler (also complies with 2.1.3.1.2.1 and	☐	☐	
nains in balance under all fan speeds of the ing air handler.	☐	☐	Phius
an designed to run continuously by default. Air er (Watts) added to ventilation power (Watts), in f W/cfm, and meets DOE ZERH efficacy s.	☐	☐	
ced to achieve a Rater/Verifier measured pressure pect to the main body of the dwelling unit when all d only the ventilation system is operating at design	☐	☐	

	Rater/Verifier Confirmed	N/A	PROG REQ.
st rates meets one of the following (select one):			
ous.	☐	☐	Energy Star
tent.	☐	☐	
ystems:	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
HRV defrost - electric, hot water loop from DHW ntilation tab of the Workbook.	☐	☐	Phius
ed the defrost control logic is set up properly.	☐	☐	

flow Testing:	**Rater/Verifier Confirmed**	**Builder Confirmed**	**N/A**	**PROG REQ.**
n Airflow Testing: Conduct ting. Enter data into Ventilation tab ble, provide testing report into Site Verification.	☐	☐	☐	Phius
on System Airflow Testing: rflow testing, enter data into ok, and if available, provide testing PHIUS+ On-Site Verification.	☐	☐	☐	

phius Quality Control Field Checklist, v24.1.1

(September 2025)

Project # Project Name City State

3 – Heating & Cooling

3.0	**Site Photos** *Scan QR Code to view examples of site photos, Don'ts and Do's:*	
3.0.1	**Site Photos of Heating & Cooling Systems:**	Rater/Verifier Confirmed / N/A
	Take photos of each installed heating & cooling system and nameplate (manufacturer, model number). Include photos that show equipment and nameplate. Save photos into project folder: 4. PHIUS+ On-Site Verification.	
3.0.1.1	**Heating & Cooling System**	☐
Notes		

3.1	**Field Verification** *Rater/Verifier is responsible for verifying the tasks below have been completed:*			
3.1.1	**Combustion Equipment:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
3.1.1.1	If combustion equipment for space heating is included in the project, provide a dedicated branch circuit, in compliance with DOE ZERH v2 NPR Exhibit 1, Item 11. Branch circuit shall be labeled "For Future Heat Pump Space Conditioning."	☐	☐	Phius
3.1.1.2	Combustion furnaces, boilers and/or water heaters located within the buildings' pressure boundary are sealed combustion, direct-vent appliances.	☐	☐	
3.1.1.3	Natural draft fireplaces are not installed.	☐	☐	
3.1.1.4	Installed woodstoves have a combustion air inlet connected to the firebox.	☐	☐	
3.1.2	**Controls:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
3.1.2.1	Heating/Cooling System Fan - air flow is produced when thermostat is set to "fan on", Heated air flow is produced when thermostat is set to "Heat", Cooling air flow is produced when thermostat is set to "Cool".	☐	☐	Phius
3.1.3	**Condensation Management:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
3.1.3.1	Ensure condensate drain provided for cooling system evaporator coil or a condensate drain is located within 3 feet.	☐	☐	Phius
3.1.3.2	Corrosion-resistant drain pan, properly sloped to drainage system is included with each HVAC component that produces condensate.	☐	☐	
3.1.4	**Distribution System Layout:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
3.1.4.1	Duct installation reasonably matches design layout.	☐	☐	Phius
3.1.5	**Heating/Cooling Distribution System Testing:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
3.1.5.1	**Ducted Heating/Cooling Distribution System Testing:** Conduct leakage testing and balancing of ducted heating/cooling distribution system, enter data into Heat & Cool tab of QA Workbook. Provide TAB report into project folder: 4. PHIUS+ On-Site Verification.	☐	☐	Phius
3.1.5.2	**Hydronic Heating/Cooling Distribution System Testing:** Collect documentation of testing of hydronic heating/cooling distribution system, enter data into Heat & Cool tab of QA Workbook, and provide report into project folder: 4. PHIUS+ On-Site Verification.	☐	☐	
Notes:				

phius Quality Control Field Che

(September 2025)

Project # Project Name City

4 – Domestic Hot Wate

4.0	**Site Photos** *Scan QR Code to view examples of site photos, Don'ts and D*
4.0.1	**Site Photos of Domestic Hot Water System:**
	Take photos of each installed domestic hot water system and nameplate (manufacturer, model nu photos into project folder: 4. PHIUS+ On-Site Verification.
4.0.1.1	**Domestic Hot Water Heater**
4.0.1.2	**Recirculation Pump and Controls (if applicable)**
Notes:	

4.1	**Field Verification** *Rater/Verifier is responsible for verifying the tasks below ha*	
4.1.1	**Domestic Hot Water System:**	
4.1.1.1	Pipe installation **and** insulation reasonably matches design layout. Describe differences below:	
Notes:		
4.1.1.2	An on-demand recirculation system for DHW was installed per DOE ZERH hot water efficiency requirements. Describe any differences below:	
Notes:		
4.1.1.3	**If combustion water heating and water heater capacity is less than or e kW) the following are met:**	
	4.1.1.3.1	Complies with DOE ZERH Single Family Homes National Program Requirements or DOE ZERH Multifamily National Program Requirements, Sections 10.1 and 10.2 in the Rater Field Checklist.
4.1.1.4	**If combustion water heating and water heater capacity is greater than 3 following is met:**	
	4.1.1.4.1	Provided a branch circuit sized for an electric appliance, equipmen end use with an equivalent capacity that terminates within 6 feet the appliance or equipment.
Notes:		

ity Control Field Checklist, v24.1.1

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e City State

3 – Heating & Cooling

Site Photos

QR Code to view examples of site photos, Don'ts and Do's:

& Cooling Systems:	Rater/Verifier Confirmed	N/A
& cooling system and nameplate (manufacturer, model number). Include photos that show equipment and folder: 4. PHIUS+ On-Site Verification.		

Field Verification

Verifier is responsible for verifying the tasks below have been completed:

nt:	Rater/Verifier Confirmed	N/A	PROG REQ.
space heating is included in the project, provide a compliance with DOE ZERH v2 NPR Exhibit 1, Item beled "For Future Heat Pump Space Conditioning."			Phius
s and/or water heaters located within the y are sealed combustion, direct-vent appliances.			
ot installed.			
combustion air inlet connected to the firebox.			
	Rater/Verifier Confirmed	N/A	PROG REQ.
- air flow is produced when thermostat is set to roduced when thermostat is set to "Heat", Cooling ermostat is set to "Cool".			Phius
ement:	Rater/Verifier Confirmed	N/A	PROG REQ.
ovided for cooling system evaporator coil or a within 3 feet.			Phius
n, properly sloped to drainage system is included that produces condensate.			
ayout:	Rater/Verifier Confirmed	N/A	PROG REQ.
matches design layout.			Phius
ibution System Testing:	Rater/Verifier Confirmed	N/A	PROG REQ.
stribution System Testing: Conduct leakage ted heating/cooling distribution system, enter data Workbook. Provide TAB report into project folder: 4.			Phius
Distribution System Testing: Collect hydronic heating/cooling distribution system, tab of QA Workbook, and provide report into -Site Verification.			

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Project # Project Name City State

4 – Domestic Hot Water

4.0 Site Photos

Scan QR Code to view examples of site photos, Don'ts and Do's:

	Site Photos of Domestic Hot Water System:	Rater/Verifier Confirmed	N/A
	Take photos of each installed domestic hot water system and nameplate (manufacturer, model number). Include photos that show context. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
4.0.1.1	Domestic Hot Water Heater	☐	☐
4.0.1.2	Recirculation Pump and Controls (if applicable)	☐	☐
Notes:			

4.1 Field Verification

Rater/Verifier is responsible for verifying the tasks below have been completed:

4.1.1	Domestic Hot Water System:	Rater/Verifier Confirmed	N/A	PROG REQ.
4.1.1.1	Pipe installation **and** insulation reasonably matches design layout. Describe any differences below:	☐	☐	Phius
Notes:				
4.1.1.2	An on-demand recirculation system for DHW was installed per DOE ZERH hot water efficiency requirements. Describe any differences below:	☐	☐	ZERH
Notes:				
4.1.1.3	**If combustion water heating and water heater capacity is less than or equal to 300,000 Btu/hr (88 kW) the following are met:**			Phius
4.1.1.3.1	Complies with DOE ZERH Single Family Homes National Program Requirements or DOE ZERH Multifamily National Program Requirements, Sections 10.1 and 10.2 in the Rater Field Checklist.	☐	☐	
4.1.1.4	**If combustion water heating and water heater capacity is greater than 300,000 Btu/hr (88 kW) the following is met:**			
4.1.1.4.1	Provided a branch circuit sized for an electric appliance, equipment or end use with an equivalent capacity that terminates within 6 feet of the appliance or equipment.	☐	☐	
Notes:				

phius **Quality Control Field Che**

(September 2025)

Project # Project Name City

5 – Appliances & Electrical L

5.0 Site Photos

Scan QR Code to view examples of site photos, Don'ts and D

5.0.1	Site Photos of Appliances
	Take photos of each installed appliance and nameplate (manufacturer, model number). Include project folder: 4. PHIUS+ On-Site Verification.
5.0.1.1	Refrigerator/Freezer/Wine Cooler
5.0.1.2	Dishwasher
5.0.1.3	Clothes Washer
5.0.1.4	Clothes Dryer
5.0.1.5	Range/Oven Combination
5.0.1.6	Wall Oven
5.0.1.7	Cooktop
5.0.1.8	Exhaust Range Hood
5.0.1.9	Miscellaneous (e.g., Dehumidifier)
5.0.1.10	**Non-residential project or non-residential portion of a mixed-use proje Take photos of equipment and nameplate of all office equipment, kitc equipment, and process loads listed during design certification in the Certification Feedback Form (consult with CPHC), documenting any ch additions, or deletions.**
Notes:	

5.1 Field Verification

Rater/Verifier is responsible for verifying the tasks below ha

5.1.1	Combustion Appliances & Equipment:
5.1.1.1	**Combustion Clothes Dyer:** If combustion clothes drying. A dedicated 240-volt branch circuit with a minimum capacity of 30 amps shall terminate within 6 feet of natural gas clothes dryers and shall be accessible with no obstructions. Both ends of the branch circuit shall be labeled with the word "For Future Electric Clothes Drying" and be electrically isolated.
5.1.1.2	**Combustion Cooking:** If combustion cooking. A dedicated 240-Volt, 40A branch circuit shall terminate within 6 feet of natural gas ranges, cooktops and ovens and be accessible with no obstructions. Both ends of the branch circuit shall be labeled with the words "For Future Electric Range" and be electrically isolated.
5.1.1.3	**Other Combustion Equipment:** All combustion equipment shall be provided with a branch circuit sized for an electric appliance, equipment or end use with an equivalent capacity that terminates within 6 feet of the appliance or equipment.
Notes:	

ty Control Field Checklist, v24.1.1

(September 2025)

City State

– Domestic Hot Water

Site Photos

Code to view examples of site photos, Don'ts and Do's:

Hot Water System:	Rater/Verifier Confirmed	N/A
hot water system and nameplate (manufacturer, model number). Include photos that show context. Save -Site Verification.		
	☐	☐
rols (if applicable)	☐	☐

Field Verification

ifier is responsible for verifying the tasks below have been completed:

tem:	Rater/Verifier Confirmed	N/A	PROG REQ.
reasonably matches design layout. Describe any	☐	☐	Phius
stem for DHW was installed per DOE ZERH hot Describe any differences below:	☐	☐	ZERH
and water heater capacity is less than or equal to 300,000 Btu/hr (88			Phius
ZERH Single Family Homes National Program DE ZERH Multifamily National Program ons 10.1 and 10.2 in the Rater Field Checklist.	☐	☐	
and water heater capacity is greater than 300,000 Btu/hr (88 kW) the			
ircuit sized for an electric appliance, equipment or uivalent capacity that terminates within 6 feet of uipment.	☐	☐	

phius Quality Control Field Checklist, v24.1.1

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Project # Project Name City State

5 – Appliances & Electrical Loads

5.0 Site Photos

Scan QR Code to view examples of site photos, Don'ts and Do's:

5.0.1	Site Photos of Appliances	Rater/Verifier Confirmed	N/A
	Take photos of each installed appliance and nameplate (manufacturer, model number). Include photos that show context. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
5.0.1.1	Refrigerator/Freezer/Wine Cooler	☐	☐
5.0.1.2	Dishwasher	☐	☐
5.0.1.3	Clothes Washer	☐	☐
5.0.1.4	Clothes Dryer	☐	☐
5.0.1.5	Range/Oven Combination	☐	☐
5.0.1.6	Wall Oven	☐	☐
5.0.1.7	Cooktop	☐	☐
5.0.1.8	Exhaust Range Hood	☐	☐
5.0.1.9	Miscellaneous (e.g., Dehumidifier)	☐	☐
5.0.1.10	**Non-residential project or non-residential portion of a mixed-use project: Take photos of equipment and nameplate of all office equipment, kitchen equipment, and process loads listed during design certification in the Design Certification Feedback Form (consult with CPHC), documenting any changes, additions, or deletions.**	☐	☐
Notes:			

5.1 Field Verification

Rater/Verifier is responsible for verifying the tasks below have been completed:

5.1.1	Combustion Appliances & Equipment:	Rater/Verifier Confirmed	N/A	PROG REQ.
5.1.1.1	**Combustion Clothes Dyer:** If combustion clothes drying. A dedicated 240-volt branch circuit with a minimum capacity of 30 amps shall terminate within 6 feet of natural gas clothes dryers and shall be accessible with no obstructions. Both ends of the branch circuit shall be labeled with the words "For Future Electric Clothes Drying" and be electrically isolated.	☐	☐	Phus
5.1.1.2	**Combustion Cooking:** If combustion cooking. A dedicated 240-Volt, 40A branch circuit shall terminate within 6 feet of natural gas ranges, cooktops and ovens and be accessible with no obstructions. Both ends of the branch circuit shall be labeled with the words "For Future Electric Range" and be electrically isolated.	☐	☐	
5.1.1.3	**Other Combustion Equipment:** All combustion equipment shall be provided with a branch circuit sized for an electric appliance, equipment or end use with an equivalent capacity that terminates within 6 feet of the appliance or equipment.	☐	☐	
Notes:				

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5.1.2	All Other Appliances and Electrical Equipment
5.1.2.1	**Appliances:** Record Manufacturer and Model Number in the Appliances & Electrical tab of the QA Workbook.
5.1.2.2	**Direct Exhaust Range Hood:** Measure exhaust cfm and record this value int the Ventilation tab of the QA Workbook.
5.1.2.3	**Electrical:** Record any other significant energy use loads in the Appliances & Electrical Loads tab of the QA Workbook.
Notes:	
5.1.3	**Lighting**
5.1.3.1	**Lighting:** Installed lighting matches lighting plan - describe variations, if applicable.
Notes:	

y Control Field Checklist, v24.1.1

(September 2025)

City State

liances & Electrical Loads

Site Photos

de to view examples of site photos, Don'ts and Do's:

s	Rater/Verifier Confirmed	N/A
nd nameplate (manufacturer, model number). Include photos that show context. Save photos into ion.		
oler	☐	☐
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	☐	☐
	☐	☐
	☐	☐
	☐	☐
fier)	☐	☐
n-residential portion of a mixed-use project: d nameplate of all office equipment, kitchen listed during design certification in the Design consult with CPHC), documenting any changes,	☐	☐

Field Verification

r is responsible for verifying the tasks below have been completed:

& Equipment:	Rater/Verifier Confirmed	N/A	PROG REQ.
ombustion clothes drying. A dedicated 240-um capacity of 30 amps shall terminate es dryers and shall be accessible with no branch circuit shall be labeled with the words ng" and be electrically isolated.	☐	☐	Phus
ustion cooking. A dedicated 240-Volt, 40A thin 6 feet of natural gas ranges, cooktops h no obstructions. Both ends of the branch words "For Future Electric Range" and be	☐	☐	
: All combustion equipment shall be zed for an electric appliance, equipment or city that terminates within 6 feet of the	☐	☐	

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5.1.2	All Other Appliances and Electrical Equipment	Rater/Verifier Confirmed	N/A	PROG REQ.
5.1.2.1	**Appliances:** Record Manufacturer and Model Number in the Appliances & Electrical tab of the QA Workbook.	☐	☐	DOE ZERH
5.1.2.2	**Direct Exhaust Range Hood:** Measure exhaust cfm and record this value into the Ventilation tab of the QA Workbook.	☐	☐	Phius
5.1.2.3	**Electrical:** Record any other significant energy use loads in the Appliances & Electrical Loads tab of the QA Workbook.	☐	☐	
Notes:				
5.1.3	**Lighting**	Rater/Verifier Confirmed	N/A	PROG REQ.
5.1.3.1	**Lighting:** Installed lighting matches lighting plan - describe variations, if applicable.	☐	☐	Phius
Notes:				

phius Quality Control Field Che

(September 2025)

Project # Project Name City

6 – Renewables & Electrifica

6.0	Site Photos *Scan QR Code to view examples of site photos, Don'ts and D*
6.0.1	**Site Photos of Renewables & Electrification:**
	Take photos that document the renewables and electrification. Include photos that show context Site Verification.
6.0.1.1	**Solar PV Installed (take photos of inverters and panels).**
6.0.1.2	**Electric Vehicle Ready (take photos of electric service panel identifying branch circuit as "Electric Vehicle Charging").**
6.0.1.3	**Electric Vehicle Supply Equipment (EVSE) (take photos of EV charger or charging station(s)).**
Notes:	

6.1	Field Verification *Rater/Verifier is responsible for verifying the tasks below ha*
6.1.1	**Renewable Energy Systems:**
6.1.1.1	**Solar Thermal System:** Installed solar PV system corresponds with shop drawings or purchase order, and document in the Renewables & Electrification tab of the QA Workbook.
6.1.1.2	**Solar Photovoltaic System:** Installed solar PV system corresponds with shop drawings or purchase order, and document in the Renewables & Electrification tab of the QA Workbook.
6.1.2	**Electric Vehicle (EV) Charging Infrastructure:**
6.1.1.2	**Electric Vehicle (EV) Charging Infrastructure:** Where parking spaces are provided, installed electric vehicle infrastructure corresponds with shop drawings and achieves the requirements listed in Section 1.3.4.3 of the Phius Guidebook v 24.1.0.
6.1.1.3	For non-residential projects and non-residential parts of mixed-use project, document EV Charging Infrastructure in the Renewables & Electrification tab of the QA Workbook.
Notes:	

Rater/Verifier Name (Printed):	
Signature:	X
Date:	

y Control Field Checklist, v24.1.1

(September 2025)

nd Electrical Equipment	Rater/Verifier Confirmed	N/A	PROG REQ.
rer and Model Number in the Appliances & ok.	☐	☐	DOE ZERH
Measure exhaust cfm and record this value into rkbook.	☐	☐	Phius
nificant energy use loads in the Appliances & orkbook.	☐	☐	

	Rater/Verifier Confirmed	N/A	PROG REQ.
ches lighting plan - describe variations, if	☐	☐	Phius

phius Quality Control Field Checklist, v24.1.1

(September 2025)

Project # _____ Project Name _____ City _____ State ____

6 – Renewables & Electrification

6.0 Site Photos

Scan QR Code to view examples of site photos, Don'ts and Do's:

6.0.1	Site Photos of Renewables & Electrification:	Rater/Verifier Confirmed	N/A
	Take photos that document the renewables and electrification. Include photos that show context. Save photos into project folder: 4. PHIUS+ On-Site Verification.		
6.0.1.1	**Solar PV Installed (take photos of inverters and panels).**	☐	☐
6.0.1.2	**Electric Vehicle Ready (take photos of electric service panel identifying the branch circuit as "Electric Vehicle Charging").**	☐	☐
6.0.1.3	**Electric Vehicle Supply Equipment (EVSE) (take photos of EV charger or EV charging station(s)).**	☐	☐
Notes:			

6.1 Field Verification

Rater/Verifier is responsible for verifying the tasks below have been completed:

6.1.1	Renewable Energy Systems:	Rater/Verifier Confirmed	N/A	PROG REQ.
6.1.1.1	**Solar Thermal System:** Installed solar PV system corresponds with shop drawings or purchase order, and document in the Renewables & Electrification tab of the QA Workbook.	☐	☐	Phius
6.1.1.2	**Solar Photovoltaic System:** Installed solar PV system corresponds with shop drawings or purchase order, and document in the Renewables & Electrification tab of the QA Workbook.	☐	☐	
6.1.2	**Electric Vehicle (EV) Charging Infrastructure:**	**Rater/Verifier Confirmed**	**N/A**	**PROG REQ.**
6.1.1.2	**Electric Vehicle (EV) Charging Infrastructure:** Where parking spaces are provided, installed electric vehicle infrastructure corresponds with shop drawings and achieves the requirements listed in Section 1.3.4.3 of the Phius Guidebook v 24.1.0.	☐	☐	Phius
6.1.1.3	For non-residential projects and non-residential parts of mixed-use project, document EV Charging Infrastructure in the Renewables & Electrification tab of the QA Workbook.	☐	☐	Phius
Notes:				

Rater/Verifier Name (Printed):	
Signature:	X
Date:	

CONSTRUCTION VERIFICATION

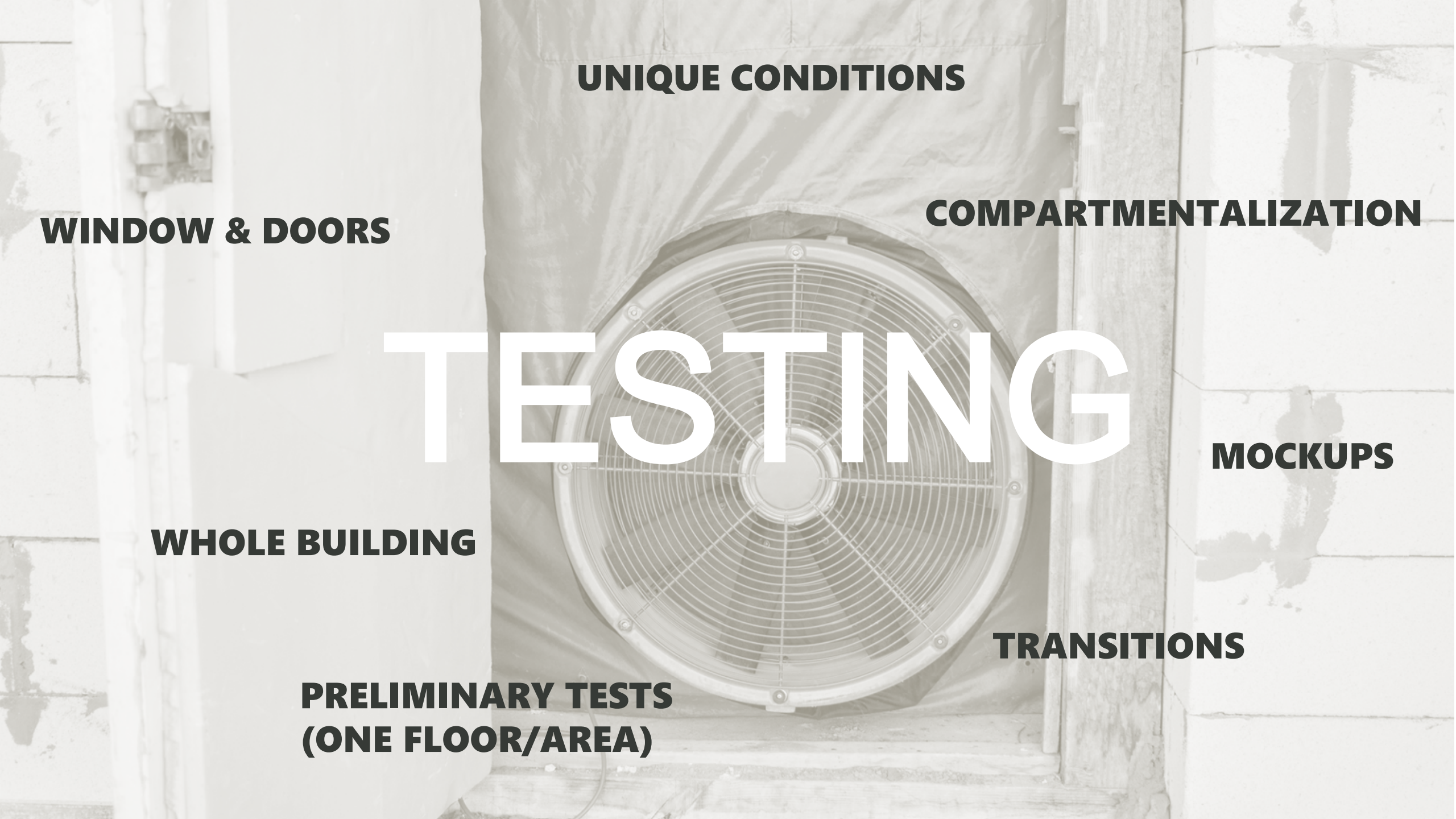
DHW

Ducts/Ventilation

Air Leakage

Who is responsible for the blower-door testing specification?

1. What Blower-Door Testing Specification?!
2. Architect
3. Phius Certified Consultant (CPHC)
4. Phius Certified Verifier


UNIQUE CONDITIONS
WINDOW & DOORS
COMPARTMENTALIZATION
TESTING
MOCKUPS
WHOLE BUILDING
TRANSITIONS
PRELIMINARY TESTS
(ONE FLOOR/AREA)

TAKEAWAYS

- Use WUFI Passive as a Guide
- Avoid repetition
- Perform due diligence:
  - Prescriptive vs. Performance Requirements
  - CoRequisite Programs
- Engage the Phius Verifier early

Thank You

Maria Raggousis, P.E., CPHC

(she/her/hers)

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Senior Consulting Engineer

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