

PhiusCon 2021

Phius QA

Things You Need To Know as a Phius Rater & Verifier

- **Isaac Elnacave – Phius Certification Staff**
- **James Ortega, RA Phius Certification Manager**
- **Anthony Lisanti, CEM CPHC Phius QA/QC Manager**

Things You Need To Know as a Phius+ Rater & Verifier

- **Agenda**
 - **PHIUS Updates**
 - **Phius 2021**
 - **Air Tightness Testing**
 - **Energy Star & IAP Updates**
 - **Summary**
 - **Questions, comments, feedback?**

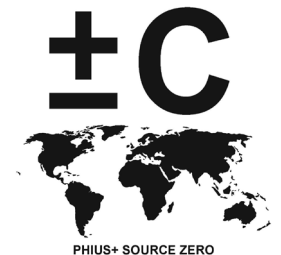


Things You Need To Know as a PhiUS+ Rater & Verifier

- **QA/QC Process**
 - Thank you to PHIUS Staff (Lisa, James & Isaac)- it is a Team effort!
 - Isaac continues to expand QA Review process
 - QA/QC Process:
 - **Certification Process:**
 - Pre-screening PHIUS submissions for document completeness
 - On going updates with Certification Team
 - QA Workbooks for SF & MF & Non-Res

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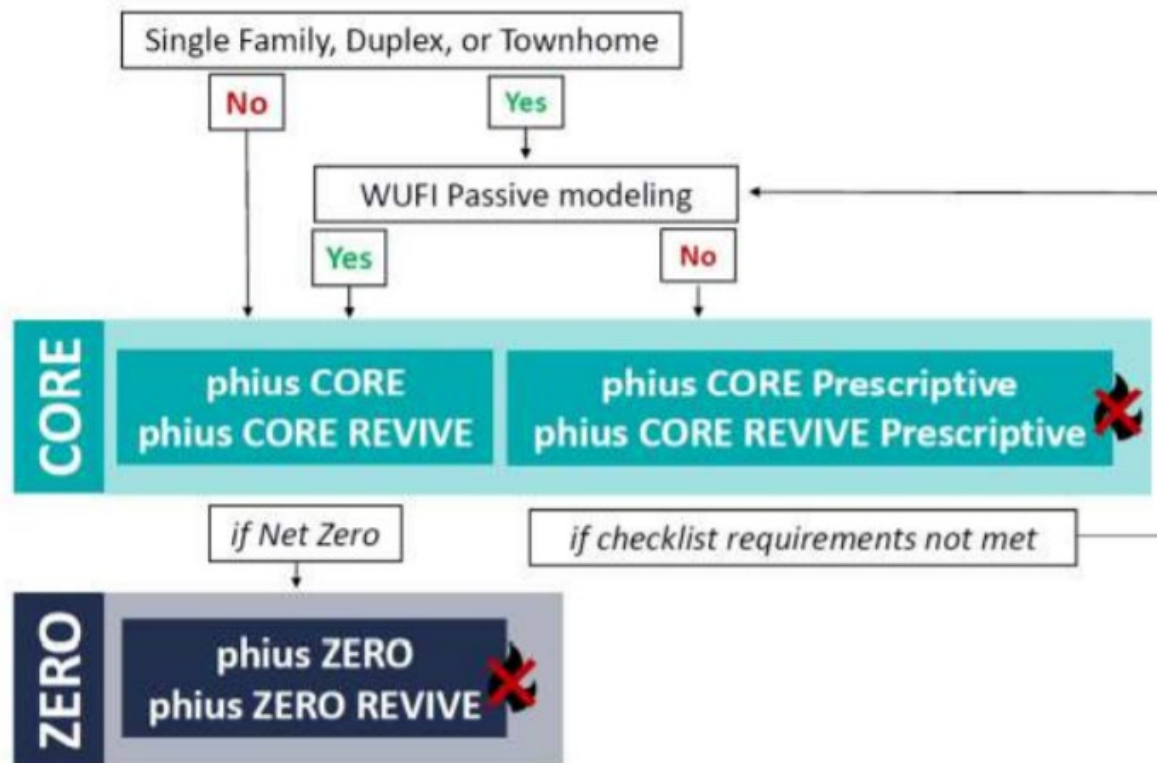
- For 2021 there are 3 options:
 - Phius 2021 CORE (formerly known as PHIUS+ Core) – All Bldgs
 - Phius 2021 CORE Prescriptive (Single Family Only)
 - Phius 2021 ZERO (formerly known as PHIUS+ Source Zero) – All Bldgs













Things You Need To Know as a Phius Rater & Verifier

- **Phius 2021 CORE Prescriptive Path**
 - **Single Family and Townhomes only**
 - **Not qualified for Phius ZERO**
 - **No WUFI Modeling required**
 - **CPHC not required (recommended)**
 - **Project Specific Prescriptive Checklist need to be met**

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						Source Zero Renewable Energy System
					Balanced Ventilation HRV/ERV	Balanced Ventilation HRV/ERV
				SOLAR READY Depends on climate	SOLAR READY ALWAYS	SOLAR READY ALWAYS
				Eff. Comps. & H ₂ O Distrib	Eff. Comps. & H ₂ O Distrib	Eff. Comps. & H ₂ O Distrib
				 EPA Indoor airPLUS	 EPA Indoor airPLUS	 EPA Indoor airPLUS
				Ducts in Condit. Space	Ducts in Condit. Space	Ducts in Condit. Space
		HVAC QI w/WHV	HVAC QI w/WHV	HVAC QI w/WHV	Micro-load HVAC QI	Micro-load HVAC QI
		Water Management	Water Management	Water Management	Water Management	Water Management
		Independent Verification	Independent Verification	Independent Verification	Independent Verification	Independent Verification
IECC 2009 Enclosure	IECC 2012 Enclosure	IECC 2009 Enclosure	IECC 2012 Enclosure	IECC 2012/15 Encl./ES Win.	Ultra-Efficient Enclosure	Ultra-Efficient Enclosure
HERS 85-90	HERS 70-80	HERS 65-75	HERS 55-65	HERS 48-55	HERS 35-45	HERS < 0
 IECC 2009	 IECC 2012	 ENERGY STAR v3	 ENERGY STAR v3.1	 ZERO	 PHIUS+ PHIUS+	 PHIUS+ SourceZero

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- **January 1, 2022: All new projects must follow Phius 2021**
 - **EPA Energy Star MFNC Required beginning July 1, 2021 (includes PHIUS 2018 projects)**
 - **All MF Projects must be certified under EPA MFNC**
 - **All SF Projects and/or Townhomes Certified under EPA SF Homes**
 - **All Dwellings Certified/or follow EPA Indoor airPLUS**
 - **DOE ZERH**

Things You Need To Know as a Phius Rater & Verifier

- **Phius 2021 Quality Assurance**
 - **SF QA Workbook for Prescriptive and ZERO**
 - **EPA Energy Star Single-Family New Homes**
 - **EPA Indoor airPLUS V1 Rev 4.0**
 - **New version out for comment – 2021/2022**
 - **DOE ZERH Rev 7 - May 2019**
 - **MF QA Workbook- new version based on EPA MFNC v1/1.1 (Rev 02)**
 - **Non-Residential QA Workbook**

Things You Need To Know as a Phius Rater & Verifier

- **Phius 2021 Quality Assurance**
 - SF Prescriptive or Source Zero
 - **MF QA Workbook- new version with EPA MFNC**
 - EPA Energy Star Multifamily New Construction Program – July 1, 2021
 - EPA Indoor airPLUS V1 Rev 4.0
 - » Certification required for all Bldg 5 stories & below
 - » Checklist applied to all Bldgs greater than 5 stories
 - DOE ZERH Rev 7
 - DWH Temp Rise/Performance applied to all dwelling units
 - PV Ready Checklist applied to building
- **Non-Residential QA Workbook**

Things You Need To Know as a Phius Rater & Verifier

- Energy Star & IAP Updates
 - ENERGY STAR PROGRAM
 - HERS Raters Must complete Mandatory Energy Star MF Training through a RESNET Training Provider

Things You Need To Know as a Phius Rater & Verifier

- Phius 2021
 - Air-Tightness:

Performance			Prescriptive		
Building Type	50 Pa	75 Pa	Building Type	50 Pa	75 Pa
≥5 Stories & Non-combustible*	$q \leq 0.080$ CFM ₅₀ /ft ²	$q \leq 0.110$ CFM ₇₅ /ft ²	Single-family detached, attached and townhomes	$q \leq 0.040$ CFM ₅₀ /ft ²	$q \leq 0.053$ CFM ₇₅ /ft ²
All other buildings	$q \leq 0.060$ CFM ₅₀ /ft ²	$q \leq 0.080$ CFM ₇₅ /ft ²			

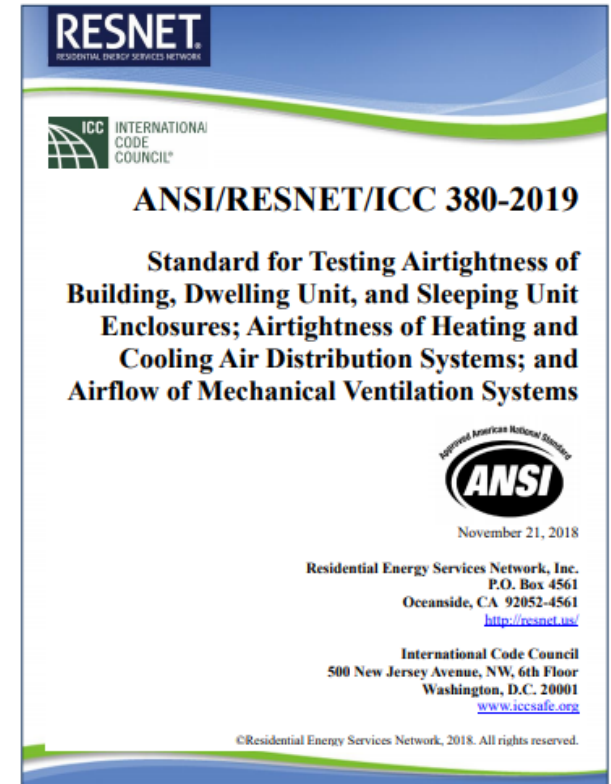
**Non-combustible in this sense is construction that is not subject to mold and rot. This would mean no wood-based framing members or sheet goods, and no wood-based or paper-based insulation.*

Phius 2021 CORE Prescriptive: Requires Preliminary Blower Door Test!

- Please indicate Building Configuration On the Report
 - taped/untaped
- Dwelling Unit Compartmentalization = 0.30 CFM/SF

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- **Air Tightness Testing - ANSI/RESNET/ICC STANDARD 380-2019, November 21, 2018**



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- **Air Tightness Testing**
 - **Pressurization**
 - **Depressurization**
 - **Avg. of both multi-point tests**
 - **Test reports to be provided for both**
 - **Test Reports shall document a passing score based on PHIUS Air tightness limits**
 - **Correlation Coefficient no worse than 0.95**
 - **Projected Accuracy of +/- 10%**
 - **please check before submitting data for review**
 - **Envelope Areas to be consistent**

Things You Need To Know as a Phius Rater & Verifier

- **Air Flow Measurement**
 - **Preliminary & Final Air Tightness Test reports provided**
 - **TAB & Air flow verification reports provided**
 - **Indicate Vent. Speed Setting (Low, Med, High) for Verification**
 - **Room Pressure Differential measured at Design Vent. Rate**
 - **Power Measurements- post balancing with clean filters**
 - **PHIUS + QA Workbook (SF or MF)**

Things You Need To Know as a Phius Rater & Verifier

- **Summary**

- **Mandatory program prerequisites are not being completely met or being questioned**
- **PHIUS is left with difficult choice:**
 - **Overlook non-compliant items; undermine our agreement with DOE**
 - **Fail otherwise compliant homes for “relatively small” issues**
- **Complicates and extends QA review time**
- **It’s project team’s responsibility to deliver compliant project**
 - **You are responsible for verifying compliance**
 - **You also should be an asset in identifying potential non-compliance as early as possible**
 - **Issues with Underpinning Programs are best directed to those Programs and/or your QA Provider**



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qa@phius.org

Thank you for attending!