New ENERGY STAR Multifamily Program & What it means for Low-Rise Builders

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September 7, 2018
Agenda

• Review of the CURRENT Multifamily programs
• Specification development timeline
• Overview of the new **MFNC** program
  – Eligibility
  – Certification Paths:
    • ERI, ASHRAE, Prescriptive
  – Mandatory Requirements:
    • In-unit & Common area items
  – Verification & Oversight
  – Partnership and Training Requirements
  – Labels, Website, & Next Steps
ENERGY STAR Multifamily New Construction Programs (current)

Guidelines that apply to new or gut rehab:

- Single Family Homes
- Factory Built Homes
- Low Rise Multifamily Buildings
- Mid and High Rise Multifamily Buildings
  - Covers buildings previously ineligible for Certified Homes
  - Launched in June 2011

Certified Homes

MFHR
Eligibility (current)

Complex, rigid line, with significant programmatic differences causes:

• Confusion/Frustration
• Inconsistency with code/incentive program eligibilities
• Designing to program, instead of what’s best for the building
• Requirements not optimized for project
Goals for the New Multifamily Program

• Appropriate eligibility
• Technical requirements governed by building features, not by height
• Common areas addressed
• Flexibility for participants and program administrators
• Well-defined verifier requirements
  – Including multifamily training
• Market-based oversight
ENERGY STAR MFNC Specification Development Timeline

- **October 2016**: Presented concept at Stakeholder meeting
- **February 2017**: Presented concept at RESNET Conference in Arizona
- **Nov/December 2017**: Webinar on draft requirements, 1st comment period & subsequent revisions
- **Spring 2018**: Webinar on updated technical requirements, 2nd comment period & more revisions
- **June 2018**: 3rd (and final) comment period & final revisions
ENERGY STAR MFNC **Implementation** Timeline

- Post final documents and launch website by late Fall
- **MFNC** webinar on November 28th
- Final specification *available* for use January 1, 2019
  - A building that complies with all MFNC requirements, regardless of building permit date, can be certified
- Specification **required** for buildings with permit dates **January 1, 2021** and later
  - Consider length of design development in choice
Concurrent ANSI Standard Development

- ANSI/RESNET/ICC 301-2014 governs how energy ratings are performed
- Currently allows energy ratings on units in multifamily buildings UP to 3 stories
- No specific accommodations for multifamily units/systems
Concurrent ANSI Standard Development

Standards Development Timeline

• 2013: EPA chairs MFWG to create MF Guidelines; published in 2014
• 2016-7: RESNET MF Committee works to turn those into a Standard
• October 2018: ANSI 301-2019 starts 3rd round of public comment
• Will allow energy ratings on units in any height building

Implementation Timeline

• January 2019: Anticipated publication
• July 2019: Anticipated ‘adoption’ by RESNET
• January 2020: Required for energy ratings (based on bldg. permit)
The NEW
Multifamily New Construction Program
New Premise
Delineation between SF and MF

One MF program for all building heights with common space requirements

Single-Family:
• Detached homes
• Two-family dwellings
• Townhomes (IRC definition)
New Premise

Multifamily:

- Townhomes too, with some revised/added requirements & SF Reference design
- Mixed use, if residential is more than 50%
- Most other attached housing
  - Not hotels, dorms, skilled nursing, or assisted living
New eligibility tree

Is the building new construction AND residential?

- YES
  - Is the building a motel/hotel, dormitory, skilled nursing facilities, or assisted living facility?
    - NO
      - Does the building have one or two units, or is it a townhome?
        - YES
          - ENERGY STAR Certified Homes
        - NO
          - ENERGY STAR Multifamily New Construction
    - YES
      - ENERGY STAR Buildings and Plants
Building Types Eligible for New ENERGY STAR MFNC Program

What about a duplex or 1-over-1?
- Certified Homes

What about Townhomes?
- Certified Homes or MFNC*

What about garden style?
- Multifamily New Construction

What if it just has 3 or 4 units?
- Multifamily New Construction

What about 3, 4, or 5 story with in-unit systems that once did Certified Homes?
- Multifamily New Construction
Overview of the New Multifamily New Construction Program Requirements
Key Components to Program Requirements

Performance Target + Mandatory Features + Verification & Oversight
Key Components to Program Requirements

Performance Target → Mandatory Features → Verification & Oversight

ENERGY STAR. The simple choice for energy efficiency.
ASHRAE Path

Whole-Building Modeled Energy Savings
• 15% above ASHRAE 90.1 (the year is based on the state code)
• 10% above Title 24-2016 in California

Notes
• Low-rise projects follow same modeling rules except have wood-framed baseline
Prescriptive Path

- No energy modeling
- Available for all projects (except CA)
- ENERGY STAR Multifamily Reference Design specifications is required (in-unit and common areas)
- Additional req’ts beyond ENERGY STAR Multifamily Reference Design (e.g. in-unit lighting power density, building level window-to-wall ratio)
Energy Rating Index (ERI) Path

- ENERGY STAR Multifamily Reference Design
  - Version “1” and “1.1” to match Version “3” and “3.1” states based on Certified Homes Reference Design (generally modeling more stringent)
  - Also developed regional “1.2” for OR & WA
  - Not used for Townhomes!!!
- Available for units in any height bldg, but timing delayed until ANSI 301-2019 adopted
- Prescriptive common area measures
Key Components to Program Requirements

- Performance Target
- Mandatory Features
- Verification & Oversight
Checklist Item/Prerequisite Summary

- Developed by evaluating req’ts from ESCH & MFHR and combining/adjusting as appropriate (both more and less stringent)
- Added req’ts for central HVAC & HW systems
- Added req’ts in common areas
- Added req’ts to reduce hot water energy use
Example:
3 story multifamily, ERI Path

What are the major changes from Certified Homes?
MFNC Rater Design & Field Checklists

What’s different from Certified Homes?
• Two separate PDF checklists, also available in Excel
• Licensed professional can verify some of the new items

Thermal Enclosure (Sections 1-4)
• Fenestration & Insulation for dwelling units & common spaces (based on commercial code)
• Minimum insulation req’ts for projected balconies, elevated podiums, heated plenums, heated garages
• Compartmentalization test requirement: 0.30 cfm50/ft² of enclosure area (~6 ACH50 per dwelling unit)
MFNC Rater Design & Field Checklists (continued)

What’s different from Certified Homes?

HVAC System & Duct Quality Installation (Sections 5-10)

• Bedrooms $\geq 150$ cfm, pressure balanced (-5 Pa to 5 Pa)
• Added Central Exhaust Duct Leakage test and HVAC Equipment Control & Hydronic Distribution req’ts (similar to code/MFHR requirements)
• DLTO still required for Townhomes; Total DL for others (exempt if in conditioned space with less than 10ft supply)
• Lower leakage allowance if returns are NOT ducted
MFNC Rater Design & Field Checklists (continued)

What’s different from Certified Homes?

*NEW* Sections 11-14

- Domestic Hot Water req’ts (heat traps on in-unit storage, inspect R-3 on piping, Rater-measured HW temperature)
- Common Area Lighting Power Density Maximums (W/ft²), efficient fixtures/bulbs, automatic lighting controls
- Whole Building Energy Data Acquisition Strategy (buildings > 50,000 ft²)
  - Lease agreements, monitors, utility aggregated data
MFNC HVAC Design Report

What’s different from Certified Homes?

• One HVAC design report per building, instead of per system
• Design common areas to ASHRAE 62.1 (units to 62.2)
• Report common area heating & cooling loads and equipment selection
• Room-by-room load calcs required for Townhomes, but unit-level for other MF
• New inputs/ranges on dwelling unit load calcs (ie. internal gains, infiltration)
• Items to be verified by Rater, shown on Design Report
MFNC HVAC “Functional Testing” Checklists

What’s different from Certified Homes?

• Not ‘Commissioning’….it’s ‘Functional Testing’
• Credentials to be able to fill out Functional Testing Checklist include, but are not limited to H-QUITO Credentialed Contractor
• New Section 5 covers ALL dwelling unit systems, but Rater can verify these items
• New Sections 6-9 cover central VRF heat pumps, boilers, chillers, pumps
MFNC Water Management System Requirements

What’s different from Certified Homes?

• Kept the Water Management System Builder Requirements from Certified Homes program
  – Applies to the building/project
  – Exemption for capillary break under open or ventilated garage slabs
  – New for MFHR projects
Multifamily New Construction Requirements Overview

Performance Target
- ASHRAE (Current MFHR)
- ERI (Current Homes)
- Prescriptive (Both)

Unified Mandatory Features

Aligned Verification & Oversight
- ENERGY STAR
Verifiers and Oversight Organizations

- Different Oversight Organizations for different pathways
  - ERI Path:
    - Verification Oversight Organization (VOO)
  - ASHRAE and Prescriptive Paths:
    - Multifamily Review Organization (MRO)
Partners and Training

ENERGY STAR Partners

• Builders & Developers (online orientation being updated)
• Raters (MFNC training being developed)
  – Need to complete in order to certify units as of 1/1/2020
  – Similar format as current Certified Homes Rater training

Other program participants

• Functional Testing Agents & ASHRAE modelers
  – Prior to certification, they will need to complete the online video and appear online in the directory
Labeling (required)

Labeling (optional)
Multifamily New Construction Program Website
ENERGY STAR. The simple choice for energy efficiency.

Energy Efficient New Homes

Energy Efficient New Homes Program Requirements

Energy Star Certified Homes Program Requirements

Program Versions at a Glance

Select State or Territory

Program Requirements

National Program Requirements
National Program Requirements Version 3
(PDF, 210 KB)
ENERGY STAR CERTIFIED HOMES & APARTMENTS PROGRAM REQUIREMENTS

PROGRAM VERSIONS AT A GLANCE

STEP 1: SELECT A PATH
- HERS and Prescriptive
- ASHRAE

STEP 2: Select State or Territory

ELIGIBILITY

These requirements apply to multifamily buildings except duplexes and townhomes. See flowchart (PDF, 28 KB) for all multifamily projects that may be eligible.

PROGRAM REQUIREMENTS
Next Steps

• Post documentation online in the Fall
• Develop training and guidance documents/tools
• Update website and notify stakeholders in November

Goal:
• Specification **available** January 2019
  – Buildings 6 stories and higher cannot use ERI path until ANSI/RESNET/ICC 301-2019 is available (mid to late 2019)
• Specification **required** for building permits January 1, 2021 and later
Summary

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Resources

Draft program documentation currently posted at www.energystar.gov/mfspec

Webinar scheduled for November 28th

Contact mfnc@energystar.gov with any questions, for webinar recordings, or to be added to the stakeholder list for multifamily updates

Current programs:
Certified Homes: www.energystar.gov/homes
Multifamily High Rise: www.energystar.gov/mfhr