



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

OVERVIEW

The U.S. Environmental Protection Agency has established the requirements for new or substantially rehabilitated multifamily high rise (MFHR) buildings to earn the ENERGY STAR. To protect the integrity of the ENERGY STAR brand, a licensed professional (See Appendix A for qualifications) working on behalf of the ENERGY STAR MFHR Developer Partner, must provide EPA or its designated agent with program specific submittals. These submittals are used to demonstrate that the program's requirements have been met, that all prerequisites are included, and that each energy conservation measure is installed to specification.

The licensed professional engaged by the developer for this purpose must possess a current license in any U.S. state, and should follow the guidance provided in this document. Licensed professionals are bound by ethical standards imposed on them by state licensing boards and are expected to only certify documents that fall within their range of expertise. EPA expects these standards to be upheld when verifying a building for the ENERGY STAR label.

REQUIRED DOCUMENTATION FOR EARNING THE ENERGY STAR

To qualify a MFHR building as ENERGY STAR, EPA or its designated agent must approve a complete Proposed Building Submittal and a complete As-Built Building Submittal. EPA or its designated agent will not approve incomplete submittals, but will communicate with Developer Partners and licensed professionals on which requirements must be met to bring the submittal into compliance with program requirements. To learn more about how MFHR buildings earn the ENERGY STAR see Appendix B.

Proposed Building Submittal

The Proposed Building Submittal is used to ensure that the project design meets the requirements based on the Path selected and that they have been included in the construction documents. The licensed professional is responsible for submitting a Proposed Building Submittal, with an *ENERGY STAR MFHR Submittal Validation Form* to EPA (See Appendix D for sample), or its designated agent for approval, prior to beginning construction. See Table 1 for a list of documents required for the Proposed Building Submittal.

As-Built Building Submittal

The As-Built Building Submittal is used to ensure that the energy conservation measures chosen by the design team are installed to specification. After the final inspection, the licensed professional is responsible for submitting an As-Built Building Submittal, with an *ENERGY STAR MFHR Submittal Validation Form*, to EPA or its designated agent for approval. Once EPA has determined that the project has fulfilled all of the program requirements, the Developer Partner will be notified that the building has earned the ENERGY STAR and that it can be



Licensed Professional’s Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

marketed and promoted per the ENERGY STAR Logo Identity Guidelines. See Table 1 for a list of documents required for the As-Built Building Submittal.

Table 1 – ENERGY STAR MFHR Submittals (Note: There are two paths that may be followed by the Developer Partner to ensure program requirements are met; the Performance Path and the Prescriptive Path. These paths are considered equivalent.)

Performance Path	Prescriptive Path
Proposed Building Submittal - Each of the documents below should be submitted to EPA or its designated agent for approval	
<ul style="list-style-type: none"> - Proposed Building Reporting Summary - Testing and Verification Worksheets - ENERGY STAR MFHR Submittal Validation Form 	<ul style="list-style-type: none"> - Testing and Verification Worksheets - ENERGY STAR MFHR Submittal Validation Form
As-Built Building Submittal - Each of the documents below should be submitted to EPA or its designated agent for approval	
<ul style="list-style-type: none"> - As-Built Building Reporting Summary - Testing and Verification Worksheets - Photo Template - ENERGY STAR MFHR Submittal Validation Form 	<ul style="list-style-type: none"> - Testing and Verification Worksheets - Photo Template - ENERGY STAR MFHR Submittal Validation Form

By signing and stamping the *ENERGY STAR MFHR Submittal Validation Form*, the licensed professional is not guaranteeing performance of the operating building nor does it require that the licensed professional certify that the building will perform to any specified level. By validating the submission, the licensed professional is certifying that the information contained within the submitted documents is accurate and in accordance with the program’s guidelines, based on the conditions observed.



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

PROPOSED BUILDING SUBMITTAL DOCUMENTS

Proposed Building Reporting Summary (Performance Path Only)

The Proposed Building Reporting Summary summarizes the modeling results of the proposed building design, and is used to demonstrate achievement of the Performance Target prior to construction. The summary template is included as part of the Performance Path Calculator¹.

Testing and Verification (T&V) Worksheets

The *T&V Worksheets* are used in the Proposed Building Submittal to demonstrate that program prerequisites or Prescriptive Path requirements are specified in the construction documents. Depending on which path is chosen for earning the ENERGY STAR, the licensed professional should ensure that the Prerequisites Checklist or Prescriptive Checklist is complete. Using the T&V worksheets to document compliance with the *ENERGY STAR MFHR T&V Protocols* is mandatory.

- **Proposed Building Prerequisites Checklist (Performance Path Only)**

The Proposed Building Prerequisites Checklist is used to demonstrate that all of the program prerequisites have been properly specified within the construction documents. The checklist is included as part of the Testing and Verification Worksheets².

- **Proposed Building Prescriptive Checklist (Prescriptive Path Only)**

The Proposed Building Prescriptive Checklist is used to demonstrate that all of the program prerequisites and Prescriptive Path requirements have been properly specified within the construction documents. The checklist is included as part of the Testing and Verification Worksheets.

Before submitting the Proposed Building Submittal, the licensed professional should review the 'Verified in Construction Documents for Proposed Submittal' column of the appropriate checklist to ensure there are no cells highlighted in red. A cell highlighted in red indicates that either a prerequisite or prescriptive measure has not been properly specified in the construction documents. EPA or its designated agent will not approve Proposed Building Submittals unless all prerequisites or prescriptive measures have been verified in the construction documents.

ENERGY STAR MFHR Submittal Validation Form (Performance and Prescriptive Path)

¹ The Performance Path Calculator is a set of worksheets in an Excel file designed to provide consistency among modelers by providing the exact calculations described in the Simulation Guidelines. It also provides a consistent format for reporting the results of the Performance Rating. It can be found at www.energystar.gov/mfhr. The use of these worksheets is optional, however submission of the Reporting Summary worksheet is mandatory.

² T&V Worksheets is a set of worksheets in an Excel files designed to provide consistency for documenting that each prerequisite and energy conservation measure included in the project meet all of the requirements of the ENERGY STAR Testing and Verification Protocols. These documents can be found at www.energystar.gov/mfhr



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

The Submittal Validation Form is used by the licensed professional to validate submittals. This form must be signed and stamped by a professional engineer or registered architect and submitted to EPA for approval with each submittal.

AS-BUILT BUILDING SUBMITTAL DOCUMENTS

As-Built Building Reporting Summary (Performance Path Only)

The As-Built Building Reporting Summary summarizes the modeling results of the As-Built Building, and is used to demonstrate achievement of the Performance Target. Any modifications to the project's energy conservation measures during construction must be reflected in the As-Built Building Reporting Summary. The summary template is included as part of the Performance Path Calculator.

Testing and Verification Worksheets and Photo Template (Performance and Prescriptive Path)

The *Testing and Verification Worksheets* and *Photo Template* are used to demonstrate that each prerequisite and each energy conservation measure (or prescriptive measure) is included in the As-Built building and meet all requirements of the *ENERGY STAR Testing and Verification Protocols*³.

Before submitting the As-Built Building Submittal, the licensed professional should review the 'Verified for As-Built Submittal' column of the appropriate checklist to ensure there are no cells highlighted in red. A cell highlighted in red indicates that either a prerequisite or prescriptive measure has not been verified per the *ENERGY STAR MFHR Testing and Verification Protocols*. EPA or its designated agent will not approve As-Built Building Submittals unless all prerequisites or prescriptive measures have been verified.

ENERGY STAR MFHR Submittal Validation Form (Performance and Prescriptive Path)

The Submittal Validation Form is used by the licensed professional to validate submittals. This form must be signed and stamped by a professional engineer or registered architect and submitted to EPA for approval with each submittal.

³ The ENERGY STAR MFHR Testing and Verification Protocols are mandatory requirements for the inspection, testing, and verification of components related to the building's energy performance. All inspections and diagnostic tests described within these protocols are required for each of the energy-related components and systems that exist in the participating building. The document can be found at www.energystar.com/mfhr



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

HOW TO SUBMIT DOCUMENTS

To ensure that EPA or its designated agent has a complete file for each project participating in the program The Proposed and As-Built Building Submittals should be submitted as indicate below.

1. The following documents must be submitted in Portable Document Format (PDF)
 - Proposed Building Reporting Summary
 - As-built Building Reporting Summary
 - ENERGY STAR MFHR Submittal Validation Form
 - Photo Template
2. The Testing and Verification Worksheets Excel file must be submitted in its entirety

All documents should be emailed as an attachment to mfhr@energystar.gov with the following the subject line, **[Proposed] or [As-Built] Building Submittal (Project Name, Address, City, State)**.

Contact information for questions:

- **Email:** mfhr@energystar.gov
- **Website:** www.energystar.gov/mfhr

If the licensed professional chooses to submit hard copy documents to EPA they should be sent to the following address

Mailing Address

ENERGY STAR Label for Multifamily High Rise Buildings
U. S. Environmental Protection Agency (6202J)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Express Mail and Courier

ENERGY STAR Label for Multifamily High Rise Buildings
Room 927P
1310 L Street, NW
Washington, DC 20005



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

Appendix A: Qualifications for Licensed Professionals

To validate the documents in the Proposed and As-Built Building Submittals, a licensed professional must be a professional engineer or registered architect and possess a current license and be in good standing. The licensed professional should also have:

- A license in a discipline related to residential and/or commercial building systems (e.g. mechanical engineering or commercial/residential architecture)
- Working knowledge of building systems, ASHRAE Standard 90.1-2007, ASHRAE Standard 62.1-2007, and ASHRAE Standard 62.2-2007.

Territorial engineering and architecture licensure laws and regulations vary from jurisdiction to jurisdiction. Before offering or performing services, it is recommended that professional engineers and registered architects understand the professional practice of their respective disciplines and the ethics requirements contained in the state and territorial laws and regulations.



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

Appendix B: How Multifamily High Rise Buildings Earn the ENERGY STAR

To earn the ENERGY STAR, a new or substantially rehabilitated Multifamily High Rise (MFHR) building must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency (EPA), making them designed to be at least 15% more energy efficient than MFHR buildings built to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2007.

Step 1: Developer Chooses to Partner with ENERGY STAR

Through a Partnership Agreement with EPA, a developer agrees to develop projects that are verified by a licensed professional to meet program guidelines.

Step 2: Developer submits an ENERGY STAR MFHR Project Application

An *ENERGY STAR MFHR Project Application* must be submitted for each project. Once a project application is approved, the project will be held to the specified versions of the requirements as noted in the application.

Step 3: Developer finalizes a set of designs that conform to the program's prerequisites and incorporates the recommended measures contributing to the achievement of the Performance Target OR the Prescriptive Path requirements.

Once the project is approved, there are two paths to earning the ENERGY STAR. Developers may choose a prescriptive package developed by EPA, or a customized approach using ASHRAE approved energy modeling software.

Prior to construction, the licensed professional working on behalf of the ENERGY STAR MFHR Developer Partner, must submit a complete Proposed Building Submittal to EPA or its designated agent to ensure that the proposed building design meets program requirements.

Step 4: Developer constructs the project with the prerequisites and energy conservation measures as described by the Proposed Building Submittal or commits to make no changes during construction that would cause the as-built project to fail to comply with the program's prerequisites, the Prescriptive Path or cause the modeled consumption of the as-built project to fall below the Performance Target.

Throughout the construction process, a number of inspections and diagnostic tests are required to verify proper installation of the selected energy-efficient features and overall energy performance of the project. Testing and verification requirements are found in the *ENERGY STAR Testing and Verification Protocols* and are documented in the *Testing and Verification Worksheets*.

After the final inspection, the licensed professional working on behalf of the ENERGY STAR MFHR Developer Partner must submit a complete As-Built Building Submittal to EPA or its



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

designated agent to ensure that the program prerequisites and energy conservation measures are installed to specification. Once the submittal has been approved, EPA will provide documentation to the developer that the building has earned the ENERGY STAR.

Step 5: The developer or property owner assesses the energy performance of the project using ENERGY STAR's Portfolio Manager for a minimum period of 2 years following the date of receipt of the Certificate of Occupancy.

Although the ENERGY STAR label is attained by completing steps 1 through 4, building performance is as much a function of proper building management as the energy conservation measures designed into the structure. Therefore, after the project has earned the ENERGY STAR, the developer/owner must commit to benchmarking their building in Portfolio Manager for a period of two years.



Licensed Professional’s Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

Appendix C: ENERGY STAR MFHR Building Eligibility

ENERGY STAR Multifamily High Rise (MFHR) guidelines apply to projects that meet the following criteria:

1. The intended use of the building must be for residential purposes. Commercial facilities such as motels/hotels, nursing homes, assisted-living facilities, and dormitories are not eligible for the program⁴
2. If the building includes both residential and commercial space:
 - a. The residential and residential-associated common space must consist of more than 50% of the occupiable square footage of the entire building; and
 - b. The residential space must be separately metered from the commercial space

Additionally, the building(s) must meet the requirements of either Building Type 1 or Building Type 2. The requirements of Building Types 1 and 2 are summarized in Table 1. You can also use the *MFHR flowchart* to help determine if your multifamily building is eligible.

Table 1: Multifamily Buildings Eligible to Earn the ENERGY STAR

Building Type 1	
New construction or substantially rehabilitated multifamily buildings with:	
<ul style="list-style-type: none"> • 5 or more dwelling units; and • 4 or 5 stories; and • Has a central heating, cooling or hot water system⁵ 	OR
	The space occupied by dwelling units is less than 80% of the occupiable residential square footage of the building ⁶
Building Type 2	
New construction or substantially rehabilitated multifamily buildings with:	
<ul style="list-style-type: none"> • 5 or more dwelling units; and • 6 or more stories 	

⁴ As of March 2011, long term care facilities over 5,000 ft² and with at least 51% of units designated as assisted living and/or skilled nursing will be able to earn the ENERGY STAR using Portfolio Manager. All other long term care facilities, such as independent senior living and group homes, can earn the ENERGY STAR in the New Homes or MFHR program.

⁵ Four (4) and five (5) story buildings with in-unit heating and cooling and a central domestic hot water system where solar thermal delivers at least 50% of the building’s domestic hot water needs, must be qualified through the ENERGY STAR New Homes program as long as all other eligibility requirements of that program are met.

⁶ If the project includes both residential and commercial space, exclude the square footage of the commercial space when calculating the occupiable residential square footage of the building.



Licensed Professional's Guide to the ENERGY STAR Label for Multifamily High Rise Buildings, Version 1.0

Appendix D: Sample ENERGY STAR MFHR Submittal Validation Form

ENERGY STAR Multifamily High Rise Submittal Validation Form

INSTRUCTIONS
 The ENERGY STAR Multifamily High Rise Submittal Validation Form is used by the licensed professional to validate submittals. This form must be signed and stamped by a professional engineer or registered architect and submitted to EPA or its designated agent for approval. For more information on program submittals see the *Licensed Professional's Guide to the ENERGY STAR Label for MFHR Buildings*.

BUILDING INFORMATION

Building Address	ENERGY STAR Developer Partner	Licensed Professional
Project Name: _____	Company Name: _____	Company Name: _____
Street: _____	Contact Name: _____	Contact Name: _____
City, State: _____	Phone: _____	Phone: _____
ZIP: _____	Email: _____	Email: _____

SUBMITAL VALIDATION
 This building is earning the ENERGY STAR using the following (Please check the appropriate box):

Performance Path

Prescriptive Path

This validation form pertains to the following (please check the appropriate box)

Proposed Building Submittal (The following documents must be included as part of the submittal)

1. Proposed Building Reporting Summary (Performance Path Only)
2. Testing and Verification Worksheets

As-Built Building Submittal (The following documents must be part of the submittal)

1. As-Built Building Reporting Summary (Performance Path Only)
2. Testing and Verification Worksheets
3. Photo Template

Licensed Professional Stamp

Signature: _____

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within these documents is accurate and in accordance with the MFHR Licensed Professional Guide

By signing and stamping this form the licensed professional is not guaranteeing performance of the operating building nor does it require that the licensed professional certify that the building will perform to any specified level. By validating the submission, the licensed professional is certifying that the information contained within the submitted documents is accurate and in accordance with the program's guidelines, based on the conditions observed.