



**NGBS
GREEN™**

NGBS GREEN CERTIFICATION PROGRAM POLICIES

*Based on:
ICC 700 National Green Building Standard® (NGBS)*

REVISED April 2024

This document replaces in full, the VRG Part I, Appendix A, NGBS Green Certification Program Policies, last revised January 2024.

This document outlines current policies of the NGBS Green certification program and is designed to be a reference document for all active NGBS Green Partners, including architects, builders, developers, and Verifiers. (original release March 2015)

See also the *Verifier's Resource Guide: Part I General Instructions* (VRG) for projects seeking certification to ICC/ASHRAE 700-2015 *National Green Building Standard™* (2015 NGBS); or ICC 700-2020 *National Green Building Standard®* (2020 NGBS) and the *VRG Part II Verification Instructions*, which is available in two NGBS version specific documents. Ensure the correct VRG *Verification Instructions* version is used for certification.

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For more information on the NGBS Green program, visit www.homeinnovation.com/Green.

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1. NGBS GREEN CERTIFICATION POLICIES

1.1 Applicable Buildings

(Effective April 2013; Revised Nov 2021; Jun 2023; Feb 2024)

The National Green Building Standard (NGBS) specifically addresses single-family homes, multifamily buildings, the residential portions of mixed-used buildings, mixed-use buildings where the non-residential portion of the building is less than 50% of the gross floor area, land developments, and remodeling projects, but the definitions of dwelling unit and sleeping unit allows for broader use beyond these types of residential construction. There are no restrictions based on end-use, height, or construction type.

The 2015 NGBS covers buildings with units that meet the definition of a dwelling unit—i.e., “a single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living sleeping, cooking, and sanitation.”

The 2020 NGBS covers buildings with units that meet the definition of a dwelling unit or sleeping unit—i.e., “a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities, but not both.”

Home Innovation has established the following rules regarding applicable buildings. NGBS Green Verifiers should be aware of these requirements and communicate these requirements to all builder/developer clients.

Building Definition

(Revised December 2023)

Every building must earn its own NGBS Green certificate. For projects with multiple buildings, each building must be verified to be NGBS compliant, and Home Innovation will issue one certificate per building.

A project’s building count should be based on the project **when complete**. If multiple existing buildings are renovated to become one building that meets our definition, the building should be registered, verified, and certified as one building. Local zoning definitions or building permit decisions are largely immaterial. ***If in doubt, [contact us](#)***. Verification report notes can help clarify what is invisible in the photo or unusual circumstances.

A duplex is **one multifamily building** with two units unless it is using the Chapter 12 Certified Path. Typically, a duplex has one owner responsible for renting out and maintaining the property. Duplexes should use Section 1002 for compliance.

A “twin home” (two-family home) is two homes separated vertically that share a party wall with each dwelling unit, is on a separate lot and individually owned. Twin homes are **two single-family homes**. A twin home will be certified as two separate single-family homes and use Section 1001 for compliance.

Townhomes or rowhomes are a row of 3 or more vertically attached houses with each home individually owned (rentals see below). Townhomes constructed for homeownership are certified as **single-family homes**.

Townhomes intended for renters can be certified as **Build-to-Rent (BTR)**. BTR homes are scored and certified as single-family homes and have special certification fees.

Attached Multifamily Buildings

(Revised January 2024)

If the wall between buildings is a **party wall**, the structure is definitively two buildings. Firewalls, particularly in new construction, can help determine the number of buildings, but there are exemptions. For new construction, buildings are separate and distinct from another attached building by a fire wall which breaks the thermal envelope.

Exemptions:

- A structure that visually appears to be multiple buildings can be certified as a single building if the buildings are connected by programmable space, other than parking or circulation, and/or have a shared physical connection greater than 50%.
- A podium wrap building, with shared internal corridors, is one building, despite having multiple firewalls. Other large buildings that have fire separations but share programmable space and have internal connections are also considered one building.

If the only connection is a basement or a covered walkway that is not dispositive then the structure is one building.

Multifamily & Mixed-Use Buildings

(Effective March 2015)

There is no height limit for buildings seeking NGBS Green certification. All units within the building, and the residential common areas, must comply with the NGBS, as certification is issued for the entire building, not individual units.

Existing buildings can also attain one of the four levels of certification when units and the residential common areas are remodeled according to the NGBS requirements.

The residential portions of mixed-use buildings can earn NGBS Green certification.

Townhouses

(Effective March 2015; Revised Jan 2024)

Home Innovation defines multifamily buildings as those where several units share common areas, as well as common foundation and roof. Townhouses, duplexes, triplexes, rowhouses, and quads must be scored and certified as single-family homes, unless they are permitted locally as multifamily. Home Innovation requires that all buildings consisting of eight units or less submit a copy of the local building permit.

When townhouses are certified as multifamily, one certificate is provided and it contains a group of addresses (e.g., 100, 102, 104, 106 Main Street).

Townhouses permitted as multifamily can be certified as single-family if desired and each unit will get a certificate.

Hotels, Assisted Living Facilities, Residential Board and Care Facilities, & Group Homes

(Effective March 2015; Revised Jan 2024)

The 2020 NGBS has revised scope and definitions that allow hotels and other buildings to seek NGBS Green certification. The 2020 NGBS Section 101.2.1 defines what occupancies are considered residential for purposes of the NGBS. A definition of “sleeping unit” is added to the “dwelling unit” definition. Buildings that can meet both Section 101.2.1 and either the definition of sleeping unit or dwelling units can seek NGBS certification.

Buildings in any of the above categories are certified following the verification and certification rules for multifamily buildings.

Multifamily certification fees apply.

In some unique circumstances, such as a smaller group home or shelter where the units do not have a separate kitchen area but has shared kitchen facilities accessible for the occupants of the units without an additional fee, the building should be verified as if it were a single-family home. When in doubt, [contact us](#).

Existing Buildings Less than Five Years

(Effective March 2015; Revised Jan 2024)

The 2020 NGBS has an eligibility gap for existing high performing buildings occupied less than five years. NGBS Section 305.2.1 states that “Projects that would be eligible [for certification] must have their Certificate of Occupancy at least 5 years prior to NGBS registration.”

As a result, a three-year old building constructed to be 2020 NGBS compliant would have to wait two-years until it was more than 5 years old to seek an NGBS Green certificate of conformance. Home Innovation believes this restriction to belie the overall intent of the NGBS *to serve as a national benchmark for green residential construction*.¹

Home Innovation will allow existing buildings from one-to-five years old to seek NGBS Green certification using the Chapter 11 compliance path. Eligible buildings must have a Certificate of Occupancy for more than one-year, but less than five-years, at the time of NGBS Green registration. This is consistent with the proposed change that, as of this writing, was accepted by the 2024 NGBS Consensus Committee. Buildings following Chapter 11 proceed with the normal certification process.

Existing building(s) less than 5 years old that wish to follow the new construction certification path (Chapters 5 through 10) to earn certification must follow the NGBS Green **Administrative Appeals Process**.

1.2 Team Verification

(Revised Jan 2024)

NGBS Green Verifiers may verify projects as a team. Home Innovation allows multiple accredited Verifiers to perform Rough and Final inspections and documentation collection for a single building. Only fully-accredited Verifiers are permitted to perform verification inspections for any project seeking NGBS Green Certification. Home Innovation recognizes one “Verifier of Record” per building, the Verifier who signs the Final verification report, and Home Innovation holds the Verifier of Record responsible for the accuracy of the compliance report.

NGBS Green Verifiers or the verifier’s company may choose to establish a sub-contract agreement with accredited NGBS Green Verifier(s) to provide verification services.

1.3 Field Inspections Dates

(Revised November 2014)

The date on the verification report (either Rough or Final) should be the date of the site visit, not the date when the report is submitted, even if the Final report submission is delayed by documentation collection or payment. For multifamily buildings, the date should be the date of the last inspection for that stage (Rough or Final). Verifiers are expected to keep their own records regarding inspection dates when multiple visits are required for large multifamily projects. If there is a delay in submitting the Final report for any reason, a note explaining the time difference between the Rough and Final inspection dates should be included on the Final signature page. Submission of the Rough report should not be delayed because of pending documentation. The Verifier should not award points, but instead include a note that points will be awarded at Final, pending review and acceptance of the documentation.

¹ ICC 700-2020 National Green Building Standard, page ii

1.4 Document Retention

(Effective October 2009)

Verifiers must maintain inspection documents for a minimum of three years after Final inspection. Verifiers are required to keep a copy of the scoring spreadsheet with Final verification, digital photos, a copy of the energy and/or water analysis, and any information related to uncertain items noted.

Documents can be kept electronically but must be appropriately backed-up and easily retrievable should Home Innovation need to obtain copies during the three-year post-certification period.

1.5 “Verified by City Inspector” Not Acceptable

(Effective September 2010; Revised Sep 2011)

The NGBS Green Accredited Verifier who signs a verification report is responsible for ensuring that the building meets the awarded NGBS practices. Verifiers must not assume that any NGBS practice is met simply because the local building code aligns with the NGBS practice(s).

For example, points are awarded for insulation installation according to the “grade” given during inspection. Building inspectors do not grade insulation according to the NGBS requirements. A Verifier cannot claim that a city inspector performed the third-party insulation grading unless the inspector provides a written statement that includes the grade. Also, the typical jurisdictional plan review by the local Building Department does not qualify to meet the intent of 701.3. Points should be awarded based on first-hand visual inspection when the VRG instructs that the practice be verified by inspection.

1.6 Missing a Mandatory Practice at Rough Inspection

(Effective September 2010; Revised Jan 2024)

If a Verifier misses an NGBS practice during the Rough inspection, it is typically acceptable for him/her to approve the practice at Final inspection, provided s/he can properly inspect the practice during the Final inspection.

Missing a mandatory practice that can only be verified at Rough will cause the building to be ineligible for certification unless the builder is willing to remove drywall and/or siding for inspection. Photos by the builder and other evidence are not acceptable for after-the-fact verification, unless expressly stated in the **Verifier’s Resource Guide (VRG)**.

1.7 Transition to Updated Versions of the NGBS

(Effective July 2013; Revised Jan 2024)

The NGBS is typically updated on a three-year cycle to parallel the building code cycle. ANSI requires that the NGBS be updated at least every five years. When a new version of the NGBS is approved by ANSI, Home Innovation will announce the transition period for projects seeking certification. Typically, builders and developers who wish to transition quickly to the new NGBS version may do so shortly after ANSI approval and as soon as Home Innovation releases the updated NGBS Green Scoring Tools and verification resources.

Whenever the NGBS is updated, Home Innovation will schedule webinars to help architects, builders, developers, and Verifiers make the transition and understand the new practices and requirements. NGBS Green Verifiers will be required to earn accreditation to the new NGBS version prior to conducting inspections to the new version.

Deadlines for NGBS transitions are published in the Verifier Update (VU), Insider Update (IU), and on the Home Innovation website in the “News and Events” section. NGBS Green Verifiers and clients should read program updates from Home Innovation to be kept informed of important transition deadlines.

1.8 Complaints Policy

(Effective March 2015; Revised Oct 2016; May 2018; Feb 2023; Jan 2024; Mar 2024)

Home Innovation (HI) provides the opportunity for NGBS Green Partners, including Verifiers, to submit complaints. Complaints are typically specific to an individual project, Home Innovation staff, builder, or Verifier.

A complaint is valid if it is within the scope of the NGBS Green certification program and/or Home Innovation has authority over the subject issue, individual, or entity.

Complaints can be submitted confidentially through Home Innovation's [online submission form](#), via email, US mail, or other document delivery. If a staff person receives a phone call or verbal complaint, the complainant will be asked to submit it in writing. HI will maintain confidentiality to the extent possible but cannot guarantee "complete" confidentiality because certain disclosures may be necessary in order to conduct a thorough investigation.

The following information must be provided:

- i. COMPLAINTANT CONTACT INFORMATION
- ii. COMPLAINTANT COMPANY
- iii. PROJECT ADDRESS (if relevant)
- iv. PROJECT ID (if relevant)
- v. REASON FOR COMPLAINT

Formal complaints are recorded and responded to promptly following the procedure below. When a complaint is received, the Vice-President, Sustainability will inform the following Home Innovation staff: President/CEO; CFO; and NGBS Green Quality Director. The NGBS Green Quality Director is responsible for investigating the cause of the complaint, initiating any needed corrective action, and responding to the complainant. Home Innovation staff that receive a complaint are expected to document it appropriately and notify their Division Director; and when the complaint is regarding the NGBS Green certification program, the NGBS Green Quality Director must also be notified. Should the specific complaint concern the NGBS Green Quality Director, the complaint should be sent to the VP, Sustainability for investigation.

Complaint Procedure:

- 1) Complaint is received.
- 2) Within one business day, the NGBS Green Quality Director will:
 - a. Send an email receipt to the complainant; and
 - b. Forward the full text of the complaint to the President/CEO, CFO, and VP, Sustainability. The NGBS Green Quality Director may include an initial recommendation regarding the validity of the complaint.
- 3) The NGBS Green Quality Director will notify the person or organization that is subject to the complaint that a formal complaint has been filed and is awaiting assessment.
- 4) The NGBS Green Quality Director will review the complaint to assess its validity relative to the work and responsibility of Home Innovation.
 - a. Invalid submissions will be addressed by the NGBS Green Quality Director with a written reply to the complainant to explain why their concern is not within the scope or responsibility of Home Innovation. The individual or organization that is subject of the complaint will also be notified.
 - b. Valid submissions will receive an acknowledgement that it has been received and is being investigated. The NGBS Green Quality Director will forward formal notice and relevant

documents to the individual or organization that is subject of the complaint. The subject will have 30 days to respond in writing to the NGBS Green Quality Director to refute or confirm the allegations.

- 5) The NGBS Green Quality Director will investigate the cause, impact, and appropriate corrective actions. As part of the investigation, he/she will schedule separate meetings with the complainant and appellant and the NGBS Green Appeals Board. During these meetings, the Appeals Board will hear about the reasons for the complaint and the appellant's response. Following the meetings, the Vice-President, Sustainability and Appeals Board members will discuss the investigation and initiate the appropriate corrective actions to resolve the issue.

Decisions regarding a complaint will be recorded in the Complaints log and in the appropriate Project/Client/Verifier/Staff files(s), as relevant.

1.9 Appeals Policy

(Revised Mar 2024)

Home Innovation provides the opportunity for NGBS Green Partners, including Verifiers, to submit appeals. Appeals may be specific to a project's compliance, or they can be a request for a new interpretation, policy, or procedure that would apply broadly to the NGBS Green certification program.

There are two types of appeals, with separate submission requirements and processes.

IMPORTANT: Neither process guarantees a project will earn NGBS Green certification. Documentation for administrative appeal may be deemed inconclusive or unacceptable upon review. The Appeals Board may judge in a manner that is unacceptable to the Appellant.

For appeal fees, see [certification fee schedule](#).

1.9(a) Administrative Appeals Process:

Standardized appeal path for buildings where pre-drywall inspection(s) are missed.

Projects where the Verifier has a signed verification services contract dated before February 1, 2024, and the project is registered in AXIS, are grandfathered under the previous policy. Contact us for a copy of this policy.

OVERVIEW:

Home Innovation will allow buildings to seek NGBS Green Certification via a waiver of the mandatory visual inspection(s) when all or part of the building misses the pre-drywall inspection(s). The Verifier must be able to determine the building is NGBS compliant using the verification methods described below.

VERIFIER RESPONSIBILITY:

The streamlined administrative process does not change a Verifier's duty to confirm NGBS compliance beyond any doubt. Verifiers must consider, if based on their review of the building plans and specs and all other available documentation (e.g., photos, scopes of work, invoices), that the building is compliant in their professional judgment.

Because the NGBS Green pre-drywall inspection is waived, documentation and proof of compliance requirements are more stringent than that required for buildings that can be fully visually inspected.

This alternative verification process may require drywall removal to confirm proper insulation installation. Before starting this process, confirm with the project team that this is acceptable.

Projects following this process are subject to a higher rate of audit.

ELIGIBILITY:

Buildings are eligible for up to one-year post-occupancy. Buildings must seek certification to the NGBS version(s) for which Home Innovation is currently accepting registrations.

The AA process does not work for all buildings/projects/clients. The cost can be prohibitive and the disruption untenable. Home Innovation understands the value of NGBS Green certification and the integrity of NGBS Green Certification is at stake with every building that earns certification outside of the normal process. Therefore, Master Verifiers should select projects carefully for the AA process and recognize that it will not be a good fit for all projects. Fees, as always, are non-refundable. The NGBS Green team is always available to speak directly with clients should there be any concerns or questions.

Documentation to determine conformance must prove definitive in determining conformance, or it ultimately may be deemed inconclusive or unacceptable during review. If the building is deemed ineligible to earn certification using the administrative process, the client may submit a full appeal of this decision for an additional fee.

POLICY:

The AA process is a last resort for buildings unable to use the typical certification process; it should **NOT** be used as a substitute for the normal NGBS verification process.

If a building misses one or more Rough inspection(s), the client should immediately schedule the remaining inspections with an Accredited Verifier. The project team may **NOT** wait until construction is complete and then initiate the AA process. If Home Innovation and/or any Verifier has evidence that a project intentionally uses the AA process as an alternative certification path, that project will be ineligible for NGBS Green certification.

Home Innovation has a three-strike policy for multifamily clients. This is a forward-looking change to our policy and, as such, it applies only going forward from the effective date above. A multifamily client may avail themselves of the AA policy no more than three times for three different projects², regardless of the number of buildings. After the third AA, the client is ineligible to use the AA process and must request a meeting with the Appeals Board.

Master Verifiers Only

The Administrative Appeal process is restricted to Master Verifiers. Accredited Verifiers can assist with the verification, while working under the supervision of a Master Verifier, but a Master Verifier must sponsor the Administrative Appeal and function as Verifier of Record.

Verification Requirements

Verification requirements for projects seeking 2020 NGBS compliance using the administrative appeals process are found in the VRG Part I, Appendix A.

This alternative verification process may require drywall removal to confirm Grade I insulation installation. Before starting the administrative appeals process, confirm with the client that this is acceptable. Drywall removal instructions are detailed in the verification guidance.

PROCESS:

1. Register the project.

² For NGBS Green purposes, a “project” is a multifamily building or buildings that are part of the same community. A project typically has one owner entity, and the residents share amenities. Commonly, but not always, the project is on one development lot.

2. **Clients need an AXIS account.** New clients must [register for an AXIS account](#) and complete an NGBS Green client agreement. Existing clients should confirm their client agreement and proof of insurance are current.
3. **Pay the Administrative Appeals Fee.** The Verifier or the Client (if they have an AXIS account) should generate the Appeals fee invoice and call [301.430.6315] [or email](#) Home Innovation with payment **or** submit the credit card authorization form on Verifier Central.
4. **Submit via AXIS the preliminary compliance documentation for an initial staff review.** Upload the preliminary documentation demonstrating compliance **and** a Scoring Tool that scores the building to the AXIS Rough Documentation QA tab. See required documentation below. The Scoring Tool should indicate that the building has the potential to earn enough points for certification at the desired level, but we are not expecting every practice to be verified at this time. Home Innovation will assign a reviewer and either permit the project to proceed or deem the documentation insufficient.
 - a. **NOTE:** *Once the Rough documentation is submitted, AXIS will automatically generate and send an invoice. Notify your clients they should NOT pay the certification fees until and if Home Innovation approves the Rough submission. Fees are non-refundable.*
5. **If Home Innovation approves the preliminary compliance documentation, pay the Certification Fee.** The Verifier or client should also generate a certification fee invoice and pay the fee. Certification fees are non-refundable. There must be a complete Client Agreement (CA) in AXIS for the certification fee invoice to be generated.
6. **Upload Verification Report and Documentation.** Verifier uploads verification report (must include completed Rough and Final worksheets) and all alternative verification documentation (those noted in the attached file) to AXIS Final Documentation QA tab.
7. **Project Review.** Project is assigned to a Reviewer who undergoes the review process. As usual, projects will not be reviewed until Home Innovation has a complete CA, a current Certificate of Insurance (COI), and the certification fee is paid. (The review for projects following an appeal will take longer to process and clients should expect one week minimum for review.)
8. **Certification Decision.** Verifier and client are notified via AXIS if the project earns certification.
 - a. **RECOURSE:** If a Verifier is unable to collect sufficient documentation to meet the Administrative Appeal requirements OR the building is deemed ineligible to earn certification using the Administrative Appeal process, the Verifier or client may submit a full appeal. If the building decides to pursue a full appeal before any verification documentation is uploaded, no additional fee will be charged. If the project decides to pursue a full appeal after uploading verification documentation, an additional per-building appeal fee is required.

PRELIMINARY COMPLIANCE DOCUMENTATION:

1. **NGBS Green Scoring Tool.** Within the Design tabs, score the building as best as you can to show what points the building is seeking. Practices do NOT have to be all verified as is normally done at Rough.
2. **Radon reduction measures.** If the project is in Radon Zone 1, the Verifier must confirm that, at a minimum, a passive radon system is installed in compliance with 902.3.1. Upload to AXIS documentation of the current passive system, if relevant, and plan to show how an active system could be added.
3. **Building envelope testing.** For completed buildings 3 stories or less, the Verifier must perform blower door testing on at least 10% of the units spread across the buildings **for the preliminary documentation**. If the testing results trigger the NGBS requirement for mechanical ventilation, then the building must have an NGBS-compliant ventilation system either installed or planned for installation. Testing previously completed by a

credentialed energy professional meets the requirement. Upload to AXIS the test results, and, as necessary, documents to confirm ventilation compliance.

a. **Note:** *This sample set is only for the preliminary documentation. Before the Final verification report is submitted, the building must fully comply with NGBS requirements for testing.*

4. **Fenestration air leakage.** Documentation demonstrating that applicable windows *and doors* meet the fenestration air leakage requirement when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory. ENERGY STAR labeled windows are deemed to comply. Upload documentation to demonstrate fenestration compliance.
5. **Verification plan for insulation compliance and sample set if relevant.** Using the insulation compliance options, please either submit the third-party inspection report **OR** submit photos of the locations where drywall was removed **OR** submit a sample set of photos you believe are representative of the insulation installation. A combination of photos and drywall removal is allowed if photos are available but insufficient to demonstrate compliance on their own. When the Verifier is submitting photos to AXIS for documentation, each photo should be labeled so that the reviewer knows where in the building the drywall was removed and what the photo shows. [Label should indicate building #, apartment #, direction, and location/type. For example, Photo A is exterior west wall of bedroom in Apartment 102, Building 1; Photo B is exterior south wall in kitchen in Apartment 409, Building 3]

INSULATION COMPLIANCE:

Verification: There are three insulation verification options. The Verifier must confirm that the insulation installation is [NGBS Grade I compliant](#). [Watch this video guidance](#).

1. **Written report.** If the building or project was subject to a third-party inspection, done by a qualified professional that included insulation installation, the final written report can be used as evidence of NGBS compliance. It is expected that the written report contains at least a few representative sample photos. Building code official inspections for code compliance are not eligible unless the code official is willing to submit a statement in writing on official letterhead that their inspection determined the building met a Grade I insulation installation. Upload the written report to AXIS.
2. **Photo Evidence.** This option is only available if there are numerous photos available for the Verifier to review. Numerous implies several photos representative of various parts of the building including wall, ceiling, roof, and other relevant areas. While project teams often have photos for an investor or bank, Home Innovation is looking for photos taken for QA purposes. While this could mean reviewing hundreds of photos, the Verifier must complete this process to determine compliance and upload a sample set of photos to AXIS including the Verifier's comments on how the insulation meets NGBS Grade I installation. The sample set should include at least **two photos for each assembly/location photographed (as applicable)** and a total of 10% of the units that have missed drywall inspection(s). Upload insulation photos with the verification report and use verification report notes column to confirm compliance.
3. **Visual Inspection via Drywall Removal.** As a last resort, drywall must be removed **in the presence of** an NGBS Green Accredited Master Verifier or in the presence of an Accredited Verifier working under the supervision of a Master Verifier. A sample set consisting of three different locations of insulation, as relevant, must be confirmed: wall, ceiling, and rim joist. Different sized projects require different sample sets of drywall removal. See below. The Verifier inspects and grades the sample set(s). Document all drywall removal with photos.

Regardless of which option above is selected, the Verifier must be confident that the insulation installation meets the NGBS's requirements for the building to proceed with certification. The Verifier should also note in the verification report comments area, the observed quality of insulation installation.

INSTRUCTIONS FOR DRYWALL REMOVAL FOR VISUAL INSPECTION

Every component needs visual inspection. Regardless of which insulation verification option is selected, the Verifier must be confident that the insulation installation meets the NGBS's requirements for the building to proceed with the certification process.

Drywall openings are expected to yield Grade I insulation per NGBS 701.4.3.2(2) for batt insulation or the manufacturer's installation instructions when NGBS 701.4.3.2(2) is not relevant (e.g., spray foam). The Master Verifier is the decisionmaker regarding insulation grading at this stage. The Verifier will attest in the verification report that the photos submitted from the drywall removal constitute Grade I in their professional opinion.

The Verifier can request more drywall to be removed above the minimum requirements; however, at least one of the first two sample sets must reveal NGBS Grade I insulation installation. If not, the project cannot be certified.

Sample Set Definition: A sample set includes verification for the **wall, the ceiling, and the rim joist insulation**. See below. Depending on the building, drywall removal might need to occur in all three locations. Drywall removal for a sample set does **NOT** have to all be in one unit/location within the building. However, there should be a complete sample set for any building selected.

There are alternate verification instructions for ceiling and rim joist insulation as relevant.

It is the Verifier's responsibility to ensure that all three building components (rim joist, ceiling, and wall) can be suitably verified.

1. **WALL. Required.**

One section on an exterior wall, either in a common area or an apartment (apartment is preferred, if possible) extending four feet wide by ceiling height on an exterior wall. Ideally, the GC should remove drywall from a wall section where there is an electrical box and running cables. The Verifier should verify that the open wall sections comply with all applicable NGBS practices and document with photos of every section where drywall is removed. Upload the photos to AXIS.

2. **CEILING. One selection below is required.**

- a. In building(s) with rigid insulation in the roof deck, photos and/or plan review is sufficient. An interview with the construction management team is useful additional documentation; **or**
- b. In building(s) with attic access, Verifiers should confirm ceiling insulation and take photos for documentation and upload photos to AXIS; **or**
- c. If there is no attic access, and/or there is a low-slope roof, the Verifier should have a drywall section of the ceiling removed in a top floor unit to verify insulation.
- d. For inaccessible ceilings, Home Innovation is open to alternative technology to verify ceiling insulation, such as scope cameras as a verification tool, if the images are clear and they reliably illustrate the construction conditions. A Verifier must request prior approval before using any alternative verification technology.

3. **RIM JOIST INSULATION. Required, if applicable.**

- a. To verify rim joist insulation, remove a section of ceiling four feet wide by a sufficient depth from the exterior wall so that the Verifier can verify the rim joist insulation.
- b. Upload photos to AXIS.

- i. As a pilot, we will accept scope camera images if the Verifier can obtain a good image. We reserve the right to revoke this option should scope cameras prove unhelpful or unreliable for verification.

Required Number of Sample Sets

SF Home or Townhome: One sample set.

1. **≤ 100 total units:** Two sample sets.
2. **> 100 total units.** Two sample sets as above, PLUS an additional sample set for each additional 50 units.

When there are multiple buildings, the following procedure must be followed:

1. Number of sample Sets \geq Number of Buildings – One set for each building; remaining sets are Verifier choice.
2. Number of sample sets $<$ number of buildings – No more than one set per building; not all buildings will be verified for insulation compliance.

Mixed-use buildings with commercial spaces. If the commercial space is seeking certification, one drywall panel (4' wide x 8' tall) on an exterior wall of the commercial space must be removed to expose the insulation. The Verifier may also need to remove an additional section of drywall to inspect rim joist area, as applicable. If the opening(s) yields Grade I insulation, this is sufficient to demonstrate compliance.

Projects with multiple SF homes and/or townhome projects. Drywall removal sampling is not allowed for projects with multiple SF homes or townhomes, even for BTR. SF Homes and townhomes require one sample set per home. This includes communities that include both multifamily buildings and homes and/or townhomes that have registered or would likely register as all multifamily buildings. For an AA, the homes and townhomes **cannot** be part of the sampling process.

1.9(b) Full Appeals Process:

Appeals regarding all other issues and situations where standardized administrative appeal path is not appropriate; non-administrative appeals are addressed via a live presentation before the NGBS Green Appeals Board

OVERVIEW:

Home Innovation will consider and rule on appeal request. There are two types of appeals: 1) project specific; and 2) general, non-project specific appeals.

For project-specific appeals, the Appeals Board will identify any additional conditions that may be necessary to ensure confidence in the certification decision. These may include additional verification requirements.

For general appeals, the Appeals Board decision will be published as an Interpretation of Clarification and be available for all projects.

VERIFIER RESPONSIBILITY:

Additional conditions requested by the Appeals Board will vary. This alternative verification process may require drywall removal to confirm proper insulation installation. Before starting this process, confirm with the project team that this is acceptable.

Projects subject to an appeal will be audited at a higher rate than non-appeals projects .

ELIGIBILITY:

No restrictions.

PROCESS FOR GENERAL APPEALS

Interpretations / Clarifications

- A. **Submit Appeal Request via [Contact Us](#).**
 - a. COMPANY
 - b. CONTACT INFORMATION
 - c. REASON FOR APPEAL
 - d. VERIFIER OR CLIENT NAME
 - e. NEW POLICY, INTERPRETATION, OR PROCESS
- B. **Pay the Appeal Fee.**
- C. **Schedule & Attend Appeal Hearing.**

PROCESS FOR PROJECT SPECIFIC APPEALS:

- A. **Register the Building.** Verifier registers the building and selects “Full Appeal.”
- B. **Pay the Appeal Fee.** HI assesses a per-building appeal fee, which is separate, and in addition to, the certification fee. Verifier should immediately generate an Appeal invoice. The appeals fee should be paid immediately; discussion of the appeal request will not be scheduled until the fee is paid. The Appeals fee is non-refundable. Note: Invoices can only be generated if a Client Agreement is on file for the Client.
- C. **Submit Appeal Request.** Verifier or client submits the following information via the online contact form at www.HomeInnovation.com/GreenContact.
 - i. COMPANY
 - ii. CONTACT INFORMATION
 - iii. PROJECT ADDRESS(ES), if relevant
 - iv. PROJECT ID(s), if relevant
 - v. REASON FOR APPEAL
 - vi. VERIFIER NAME
 - vii. ACTION REQUESTED (e.g., waiver of a program requirement, probation for a Verifier, or reinspection of a building)

The Vice-President of Sustainability will forward the Appeal Request to all voting members of the Home Innovation NGBS Green Appeals Board – the President/CEO, the CFO, and the NGBS Green Quality Director.

- D. **Schedule & Attend Appeal Hearing.** Provided that the Appeal Request is valid—within the scope of the NGBS Green Certification program—and Home Innovation has authority over the subject issue, an appeal hearing will be scheduled. During the 30-minute video conference, the appellant and other members of the project team will have an opportunity to describe their situation and need for the requested action, and the Appeals Board members will ask clarifying questions.
- E. **Review Appeal Decision.** Following the Appeal Hearing, the Appeals Board will deliberate and vote on the appeal action requested. Within one-business day, Vice-President of Sustainability will communicate the decision to the appellant via email. If the appeal issue is project-specific, the decision will outline whether or not the project is eligible to move forward with certification, action provided, and any additional conditions expected from the project team. Approval of the appeal is not determinant if the building can be certified as NGBS compliant.

- F. **Client Registers for AXIS Account.** Existing clients should confirm their client agreement (CA) and proof of insurance are current.
- G. **Pay the Certification Fee.** If appellant elects to move forward with project certification, Verifier or client should generate a certification fee invoice and pay the fee. There must be a complete CA in AXIS for the certification fee invoice to be generated.
- H. **Proceed Forward with Certification Steps.** Verifier and client proceed with verification report submission and other certification steps while applying any additional conditions expected by the Appeal Board.

1.10 Responding to Homeowner Issues

(Effective November 2014; Revised Jan 2024)

Home Innovation does not have a direct relationship with owners/renters of NGBS Green Certified homes. If a homeowner or renter contacts Home Innovation regarding a specific project or client (builder, developer, or Verifier), Home Innovation will try to understand the specific issue(s). Our policy is to act only if the dispute is directly related to the NGBS Green certification. If the issue is outside the scope of the certification, we will encourage the owner/renter to work with the builder to resolve the issue at hand.

Home Innovation's process for responding to homeowner/renter issues is as follows:

- 1) Gain understanding of the homeowner/renter's issues:
 - a. Obtain building address and builder's name to confirm whether it is an in-process or certified building.
 - b. Ask the buyer/renter for details about their issues, particularly how it relates to NGBS requirements.
 - c. Ask the buyer/renter if they have discussed the problem with the builder and how the builder is addressing the issue.
 - d. If the issue relates to the NGBS Green certification, tell the buyer/renter that we will investigate the situation and get back to them. If the issue is completely unrelated to the NGBS Green certification, we will encourage the buyer/renter to work directly with the builder to address the situation.
- 2) Document the complaint in an internal email to alert management of the issue.
- 3) Contact the builder/developer client and NGBS Green Verifier:
 - a. If the complaint is specific to an NGBS practice, review the verification report to see if the verifier awarded points for that practice (or indicated that a mandatory practice was applicable and met).
 - b. If it appears that the verifier missed something during the inspection process, Home Innovation will contact the verifier to discuss the issue.
 - c. If the issue appears to be the responsibility of the builder/developer client, Home Innovation will contact the builder to discuss the situation.
- 4) Follow-up:
 - a. If the issue is outside of the scope of the NGBS Green certification, Home Innovation will contact the homeowner/renter in writing to explain why the issue is outside the scope of certification. The individual will be encouraged to work with the builder to resolve the issue, if possible.
 - b. If the issue is related to the NGBS Green certification, an internal meeting with the Executive Management Team and the Green Team staff will be arranged to determine the appropriate

response. Once a decision is made, but prior to contacting the owner/renter, Home Innovation will inform the verifier and the builder of how we intend to resolve the issue. We will subsequently contact the owner/renter with our decision.

Home Innovation considers the verification report a document that contains the builder's proprietary information and does not share the report to any outside party without the builder's permission. Verifiers should follow the same policy. The builder can provide the information to anyone at their discretion.

Home Innovation typically does not provide the verifier name and contact information directly to the homeowner/renter except when we are unable to reach anyone at the builder company, required by a court, or permission has been expressly granted by the verifier.

1.11 Deadlines for Final Inspection Package: Single-Family Homes

(Effective February 2012)

Within 30 days after a building's Final inspection, the Verifier must submit the Final inspection package to Home Innovation. If, at that time, the Verifier has unresolved payment or other issues with the client and wishes for Home Innovation to delay processing of the verification report/issuing of the certificate pending resolution, he/she must provide Home Innovation an email explaining the situation. Upon receipt of the Verifier's written request, Home Innovation will contact the client to inform them we have received the Final verification submittal but are delaying processing it at the Verifier's request. We will also remind the client that if 90 days elapses after the date of Final inspection of a building, the project seeking certification will need to be re-inspected before it can be certified.

Verifiers who do not submit the Final inspection package for a home within the 30-day period after completing a Final inspection will jeopardize the building's ability to be certified and will receive a failing grade for the Final inspection package, per the grading rubric. Repeat offenders will be put on probation.

1.12 Energy Modeling Policy

(Adopted January 1, 2020; Revised Jun 2020, Effective July 1, 2020; Revised Mar 2021; Revised Sep 2021, Revised Apr 2024)

Summary: This document identifies the appropriate software programs and modeling approach for each of the energy efficiency compliance pathways in the NGBS.

Effective Date: All projects registered on or after July 1, 2020, must meet the requirements outlined in this policy.

Software Versions: For all "List 1" software programs listed within this document, accepted versions are identified on [this list](#). For all "List 2" software programs listed within this document, accepted versions are identified on [this list](#). Accepted versions of RESNET-approved software programs are identified on this list. The submitted energy performance report should reflect an accepted version at time of project registration.

Note on Eligible Software: Qualifying software programs are those listed within this document. Modeling outputs from other software programs are not accepted.

Ideally, software should be selected that can be used to accurately model both residential and commercial spaces. For software that cannot accurately account for common space/halls uses (i.e., REM, Ekotrope, EnergyGuage, etc.), these spaces should be either a) modeled separately to show equivalent compliance using Commercial software or b) shown to be better than the IECC using REScheck software outputs that show compliance with the requirements of IECC R402 through R406, provided that no equipment is shared across the dwelling units and common areas. In these scenarios, Home Innovation accepts different modeling methods to be applied to the dwelling units and common areas. For example, a performance approach can be pursued for the dwelling units, and a prescriptive REScheck can be reviewed for the common areas.

REScheck reports are the only acceptable documentation for common areas. A REScheck report cannot be substituted for any of the accepted software programs listed within this policy for whole-building modeling.

Notes on Energy Performance Reports: Energy performance reports should reflect as-built conditions.

“Confirmed rating” refers to an energy performance report that is complete and shared with the appropriate oversight body. Where a confirmed rating is required, the energy efficiency performance report should not show language such as “DRAFT” or “Unconfirmed.”

Professional Qualifications for Energy Modelers: The 2020 NGBS Green Scoring Tools include field(s) for the NGBS Green Verifier to identify the name and credential(s) of the professional who generated the energy model.

In general, the following energy modeling credentials are ***encouraged but not required***. However, where a confirmed rating is required, the project team should defer to the credentialing requirements of the oversight body.

For Single-Family Homes and Multifamily Building 3 Stories and Below:

- RESNET Certified Home Energy Rater (“HERS Rater”)

For Multifamily Buildings 4 Stories and above:

- AEE Building Energy Simulation Analyst (BESA)
- BEMP – Building Energy Modeling Professional Certification
- ENERGY STAR Multifamily High Rise Licensed Professional

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NGBS GREEN ENERGY MODELING GUIDELINES

Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
NEW CONSTRUCTION – 2012, 2015, and 2020 NGBS					
Section 702 - Performance Path (2012, 2015, and 2020)	<i>Single-Family & Multifamily 3 Stories and Below:</i> ICC IECC, Section R405	<i>Single-Family & Multifamily 3 Stories and Below:</i> model dwelling units using software from List 1. For common areas, model using software from List 2 or verify common areas using REScheck report.	<i>Single-Family & Multifamily up to 3 stories:</i> whole-building; unitary; unit-by-unit approach, or a building average of a unit-by-unit approach. Sampling of multifamily energy modeling: Please refer to the “Sampling of Multifamily Energy Modeling” instructions below.	Energy performance report showing energy savings at or above baseline. NGBS Green report is utilized when available in selected software program. Energy performance matches value entered in Scoring Tool. <i>Single-Family & Multifamily 3 Stories and Below:</i> model using NGBS Reference Home values included within this Policy.	N
	<i>Multifamily 4+ Stories:</i> ICC IECC Section C407.2 through C407.5, as applied as defined in the ICC IECC	<i>Multifamily 4+ Stories:</i> whole-building modeling using software from List 2.	<i>Multifamily 4+ Stories:</i> whole-building energy modeling Energy modelers can group dwelling units together as “thermal blocks” for the purposes of modeling per ANSI/ASHRAE/IES Standard 90.1-2016.	<i>Multifamily notes:</i> If employing building average or unit-by-unit approaches, submit analysis showing the units modeled and corresponding performance. This can be submitted as an Excel table or another file format.	
Section 703 - Prescriptive Path (2012, 2015, 2020)	N/A – Energy Modeling & Documentation Not Required				

NGBS GREEN ENERGY MODELING GUIDELINES

Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
Section 704 – HERS Index Target Path (2015)	HERS Index Target Procedure for National Program Requirements for ENERGY STAR Certified Homes, Version 3	RESNET Approved Software Programs.	Unitary or unit-by-unit approach. Sampling of multifamily energy model is permitted per RESNET Sampling Guidelines.	HERS report, showing <u>confirmed*</u> features and energy performance. For multifamily, worst-case scenario for the building is submitted. At a minimum, at least one modeled unit (the worst performing unit) is submitted to RESNET for a confirmed rating and QA oversight. HERS score matches value entered in scoring tool. <i>Multifamily notes:</i> submit analysis showing the units modeled and corresponding performance. This can be submitted as an Excel table or another file format.	Y
Section 704 - ERI Path (2020)	National ERI Target Procedures for ENERGY STAR Certified Homes Version 3.0	See List 1.	Unitary or unit-by-unit approach. Sampling of multifamily energy model is permitted per ANSI/RESNET/ICC Standard 301 – 2019 5.1.4.4 Sample Ratings for Attached Dwelling Units.	ERI report, showing as built and field verified features and energy performance. For multifamily, worst case scenario for the building is submitted. ERI score matches value entered in Scoring Tool. <i>Multifamily notes:</i> submit analysis showing the units modeled and corresponding performance. This can be submitted as an Excel table or another file format.	N

NGBS GREEN ENERGY MODELING GUIDELINES

Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
Section 701.1.4 - Alternative Bronze and Silver Path (2015 and 2020)	<p><i>Single-Family Homes and Multifamily 3 Stories or Below:</i></p> <ul style="list-style-type: none"> ENERGY STAR Version 3.0 Certified Homes (2015, 2020 – for Bronze) 2018 IECC (2020 – for Bronze) Chapter 11 of the 2018 IRC (2020 – for Bronze) ENERGY STAR Version 3.1 Certified Home (2015, 2020 – for Silver) 	<p><i>Single-Family Homes and Multifamily 3 Stories or Below:</i></p> <p>For ENERGY STAR, model dwelling units using software from RESNET Approved Software List. For common areas, model using software from List 2 or verify using whole-building REScheck report.</p> <p>For IECC or IRC compliance, verify by review of whole-building REScheck report.</p>	<p><i>Single-Family Homes and Multifamily 3 Stories or Below:</i> unitary; unit-by-unit approach, or a building average of a unit-by-unit approach.</p> <p>Sampling of multifamily energy model is permitted per 2018 IECC R405.4.2.</p>	<p>REScheck report showing IECC or IRC compliance. This includes envelope, interior lighting, exterior lighting, mechanical compliance reports and the completed inspection checklist.</p> <p>OR</p> <p>ENERGY STAR certification and energy performance report documentation, showing <u>confirmed*</u> features and energy performance</p>	<p>N (IECC/IRC)</p> <p>Y (ENERGY STAR)</p>

NGBS GREEN ENERGY MODELING GUIDELINES

Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
Section 701.1.4 - Alternative Bronze and Silver Path (2015 and 2020) (CONTINUED)	<p><i>Multifamily 4+ Stories</i></p> <ul style="list-style-type: none">• 2018 IECC (2020 – for Bronze)• ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (2015, 2020 – for Bronze)• ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 with a baseline at ASHRAE 90.1-2010 (2020 – for Silver) <p>For more details on eligibility, visit the ENERGY STAR website.</p> <p><i>(ENERGY STAR Multifamily New Construction can be sought in lieu of ENERGY STAR Multifamily High Rise for comparable energy efficiency levels.)</i></p>	<p><i>Multifamily 4+ Stories:</i></p> <p>For IECC compliance, verify by review of whole-building COMcheck report.</p> <p>For ENERGY STAR, see List 2.</p>	<p><i>Multifamily 4+ Stories</i></p> <p>whole-building energy modeling</p> <p>Follow ENERGY STAR Multifamily High Rise Simulation Guidelines, available here.</p> <p><i>(If following ENERGY STAR Multifamily New Construction, see guidance documents here.)</i></p>	<p>COMcheck report showing IECC compliance. This includes the compliance certificate, envelope, interior lighting, exterior lighting, mechanical compliance reports and the completed inspection checklist.</p> <p>OR</p> <p>ENERGY STAR certification and energy performance report documentation, showing <u>confirmed*</u> features and energy performance</p>	<p>N (IECC/IRC)</p> <p>Y (ENERGY STAR)</p>
	<p><i>Any Building Size:</i></p> <ul style="list-style-type: none">• IECC Section R401.2.1 (Tropical Zone) (2020 – for Silver)	N/A – Energy Modeling & Documentation Not Required			
701.5 Alternative Gold Level Compliance (2020)	N/A – not accepting compliance via this option				
701.1.6 Alternative Gold Level Compliance for Tropical Zones (2020)	N/A – Energy Modeling & Documentation Not Required				

NGBS GREEN ENERGY MODELING GUIDELINES

Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
EXISTING BUILDINGS – 2012, 2015, and 2020 NGBS					
Chapter 11 Energy Consumption Reduction Path	Reduction in annual energy cost savings or source energy as determined by a third-party energy audit or utility consumption data. Project teams can demonstrate compliance via either modeling or utility documentation.	<p><i>Single-Family Homes and Multifamily 3 Stories or Below:</i> model dwelling units using software from List 1. For common areas, model using software from List 2.</p> <p><i>Multifamily 4+ Stories:</i> whole-building modeling using software from List 2.</p>	<p>Entire building, not just altered portions, should be modeled.</p> <p>Same assumption and modeling configurations should be used for both the ‘before’ and ‘after’ analysis. If applicable, the ‘after’ remodel analysis should reflect any additions or other changes to the configuration of conditioned space.</p> <p>Sampling of multifamily energy model is permitted per 2018 IECC R405.4.2 or ANSI/ASHRAE/IES Standard 90.1-2016.</p>	<p>Energy performance reports showing energy savings above pre-renovation conditions OR utility bill documentation for a specific building (as opposed to project-wide calculations, if multiple buildings within a project).</p> <p>Report(s) should clearly show pre- and post-renovation conditions.</p> <p>Energy consumption reduction matches values entered in Scoring Tool.</p> <p>For more guidance on establishing energy performance baselines for adaptive reuse projects, see the Whole Building Renovations section of VRG Part I.</p> <p>For 2020 NGBS, existing buildings must have their certificate of occupancy issues at least 5 years prior to NGBS Green registration. Pre-renovation document must reflect conditions no more than three years prior to registration.</p>	N

NGBS GREEN ENERGY MODELING GUIDELINES					
Compliance Pathway	Baseline/Reference Documents	Eligible Software	Approach	Documentation	Confirmed* Rating Required? Y/N
CERTIFIED PATH – 2020 NGBS					
Section 1203.11 - Energy Performance Pathway	IECC Section R405	See List 1 or REScheck.	Whole-building approach Sampling is not permitted.	Energy performance report showing energy savings (minimum 7.5%) above IECC. NGBS Green report is utilized when available in the selected software program. <i>Note: the NGBS report include lighting, appliances, and on-site renewables into the energy savings calculations.</i> Energy savings matches values entered in Scoring Tool.	N
Section 1203.12 – Prescriptive Path	N/A – Energy Modeling & Documentation Not Required				
Section 1203.13 - ERI Target Pathway	National ERI Target Procedures for ENERGY STAR Certified Homes Version 3.0	See List 1.	Whole-building approach Sampling is not permitted.	ERI report showing ERI value at least 8 points less than reference home. ERI score matches value entered in Scoring Tool.	N
COMMERCIAL SPACES – 2020 NGBS					
Reference code is 2018 IECC commercial code.					
<i>Energy performance:</i> Projected energy use is based on verified as-built values. Energy demand for commercial spaces should be reflected in the analysis for the broader residential mixed-used building and submitted as part of documentation for New Construction or Renovation certification.					
<i>Other energy efficiency requirements:</i> Verifier should confirm that building features are in compliance with requirements of Section 13.105. Verifiers are expected to confirm that building features, including maximum UA, matches those shown on COMcheck report provided by the Architect or Engineer of Record. Reports should be retained by verifier but does not need to be submitted with verification packet.					

** When sampling is permitted, Sampled ERI or HERS reports can be submitted in lieu of Confirmed ERI reports.*

Eligible Software

List 1: Unitary Modeling Software

1. Ekotrope
2. EnergyGauge USA
3. EnergyPro
4. REM/Rate

List 2: Whole-Building Modeling Software

1. DesignBuilder
2. DeST
3. DOE-2.2
4. EnergyGauge
5. EnergyPlus
6. eQUEST
7. Hourly Analysis Program (HAP)
8. IES<Virtual Environment>
9. Open Studio with EnergyPlus
10. TAS
11. TRACE 3D PLUS
12. TRACE 700
13. TRNSYS

Note: Treat software, both single-family and multifamily options, are accepted for Renovation projects.

Sampling of Multifamily (< 4 stories) Energy Modeling

- 1) A unique dwelling unit shall have the same construction type using the same envelope systems, equipment, and appliances. The dwelling unit shall also have the same number of bedrooms, same conditioned floor area ($\pm 10\%$), same infiltration volume ($\pm 10\%$), and same fenestration area ($\pm 10\%$).
- 2) For each unique dwelling unit type, the features, inputs, and specifications that produce the highest energy consumption shall be entered into the approved energy modeling software.
- 3) For each unique dwelling unit type, the exposure, boundary conditions, orientations, and levels within the building that produces the highest energy consumption shall be entered into the approved energy modeling software.
- 4) The energy performance for each unique dwelling unit type must be based on 2 & 3. This energy performance report shall be applied to all dwelling units of that same unit type.
- 5) For common areas, verify using REScheck reports as applicable.

NGBS REFERENCE HOME VALUES (SINGLE-FAMILY & LOW-RISE MULTIFAMILY MODELING)			
Category	Reference		
Building Envelope	2012 NGBS	2015 NGBS	2020 NGBS
Slab	2009 IECC Table R402.1.1	2015 IECC Table R402.1.2	2018 IECC Table R402.1.2
Floor	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Ceiling	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Door	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Insulation Rim/Band	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Insulation Walls	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Windows	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Air Infiltration	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Heating System Efficiency	Federal Minimums published June 27, 2011	Federal Minimums published March 12, 2015	Federal Minimums published March 12, 2015
Cooling System Efficiency	Federal Minimums published June 27, 2011	Federal Minimums published March 12, 2015	Federal Minimums published March 12, 2015
Ventilation System Efficiency			
Energy Use of Ventilation Equipment	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Duct Sealing			
Duct Air Leakage Testing	2009 IECC Table R405.5.2(1)	2015 IECC Table R405.5.2(1)	2018 IECC Table R405.5.2(1)
Water Heating System Efficiencies	Federal Minimums effective October 25, 2011	Federal Minimums published March 12, 2015	Federal Minimums published March 12, 2015
Lighting	Default lighting and appliance values from ANSI/RESNET 301-2014	Default lighting and appliance values from ANSI/RESNET 301-2014	Default lighting and appliance values from ANSI/RESNET 301-2019
Appliances	Default lighting and appliance values from ANSI/RESNET 301-2014	Default lighting and appliance values from ANSI/RESNET 301-2014	Default lighting and appliance values from ANSI/RESNET 301-2019

Demonstrating Performance Using Alternative Baselines

Ideally, building(s) seeking NGBS Green Certification will be modeled against the energy performance baseline referenced within the standard text. However, we recognize that sometimes it will be more efficient and cost-effective to submit energy performance documentation that is based on an older baseline or another industry code/standard.

Home Innovation accepts energy modeling based on currently accepted versions of the IECC, ASHRAE 90.1, Florida Code, and Title 24.

It is the verifier's responsibility to clearly show his/her calculations of how the modeled performance relates to the specific energy performance baseline within the NGBS. Home Innovation's reviewers will confirm/evaluate performance claims using the comparison tables below.

For example, if a building is built exactly to the ASHRAE 90.1 2013 standard, it would be 2% less energy efficient than the 2018 IECC and 10% more energy efficient than the 2009 IECC. To demonstrate compliance to the 2020 NGBS using ASHRAE 90.1 2013 documentation, the NGBS Green Verifier would subtract 2% from the ASHRAE 90.1 2013 energy performance and include a note on the verification report.

OLDER OR MORE RECENT IECC BASELINES

IECC PERFORMANCE LEVELS COMPARED TO THE 2018 IECC				
	2021 IECC	2018 IECC	2015 IECC	2009 IECC
Residential	9	0	-2	-27
Commercial	11	0	-3	-12

ASHRAE 90.1

ASHRAE 90.1 COMPARED TO NGBS ENERGY PERFORMANCE BASELINES				
	Percent Above 2021 IECC	Percent Above IECC 2018	Percent Above IECC 2015	Percent Above IECC 2009
ASHRAE 90.1 2022	1	11	14	23
ASHRAE 90.1 2019	-4	6	9	18
ASHRAE 90.1 2016	-7	3	6	15
ASHRAE 90.1 2013	-12	-2	1	10
ASHRAE 90.1 2010	-18	-8	-5	4
ASHRAE 90.1 2007	-26	-16	-13	-4
ASHRAE 90.1 2004	-31	-21	-18	-9

FLORIDA CODE

FLORIDA CODE RESIDENTIAL CODE COMPARED TO NGBS ENERGY PERFORMANCE BASELINES				
	Percent Above 2021 IECC	Percent Above 2018 IECC	Percent Above 2015 IECC	Percent Above 2009 IECC
Florida Code 2020 Residential	-6	0	3	22
Florida Code 2017 Residential	-9	-3	0	19

FLORIDA CODE COMMERCIAL CODE COMPARED TO NGBS ENERGY PERFORMANCE BASELINES				
	Percent Above 2021 IECC	Percent Above 2018 IECC	Percent Above 2015 IECC	Percent Above 2009 IECC
Florida Code 2020 Commercial	-8	0	3	24
Florida Code 2017 Commercial	-11	-3	0	21

TITLE 24

Title 24 2019 RESIDENTIAL COMPARED TO IECC ENERGY PERFORMANCE BASELINES				
	Percent Above 2021 IECC	Percent Above 2018 IECC	Percent Above 2015 IECC	Percent Above 2009 IECC
Title 24 2022 Residential				
WITHOUT PV	23	32	34	59
WITH PV	84	93	95	122
Title 24 2019 Residential				
WITHOUT PV	27	36	38	63
WITH PV	72	81	83	110

TITLE 24 COMMERCIAL COMPARED TO NGBS ENERGY PERFORMANCE BASELINES				
	Percent Above 2021 IEC	Percent Above 2018 IECC	Percent Above 2015 IECC	Percent Above 2009 IECC
Title 24 2022 Commercial	59	70	73	82
Title 24 2019 Commercial	49	60	63	72
Title 24 2016 Commercial	19	30	33	42

[Energy Efficiency Comparison Tool](#)

Use this tool to compare two energy performance baselines and identify the difference. NGBS Green Partners can use this tool to estimate how close they will be to complying with their target certification level based on local code requirements and/or the builder's past energy achievement.

REFERENCES

California Energy Commission. (2022, December). Energy Efficiency Comparison: California's 2022 Building Energy Efficiency Standards and International Energy Conservation Code.

California Energy Commission. (2017, June). *Energy Efficiency Comparison: California's 2016 Building Energy Efficiency Standards and International Energy Conservation Code.*

V Robert Salcido, Yan Chen, YL Xie, ZT Taylor. (2021, June). National Cost Effectiveness of the Residential Provisions of the 2021 IECC. U.S. Department of Energy, Pacific Northwest National Laboratory.

Mendon V., Lucas, R., Goel, S. (2013, April). *Cost-Effectiveness Analysis of the 2009 and 2012 IECC Residential Provisions*. U.S. Department of Energy, Pacific Northwest National Laboratory.

V Robert Salcido, Yan Chen, YL Xie, ZT Taylor. (2021, July). 2021 IECC: Energy Savings Analysis. U.S. Department of Energy, Pacific Northwest National Laboratory

Mendon, VV., ZT Taylor., SU Rao., YL Xie. (2015, May). *2015 IECC: Energy Savings Analysis*. U.S. Department of Energy, Pacific Northwest National Laboratory.

RESNET. (unknown). *Over 241,000 Homes HERS Rated in 2019*.

<https://www.resnet.us/articles/over-241000-homes-hers-rated-in-2019/#:~:text=In%202019%2C%20there%20were%20241%2C909,Score%20in%202018%20was%2059.>

Sonne, J. and Robin V. (2017, April). *Residential Code Review for the 2017 Florida Building Energy Code*. FSEC-CR-2061-17. Florida Solar Energy Center/University of Central Florida.

Sonne, J. and Robin V. (2021, June). Comparison of the Residential Provisions of the 2020 Florida Building Code, Energy Conservation, 7th Edition with the 2021 IECC. FSEC-CR-2112-21. Florida Solar Energy Center/University of Central Florida.

Sonne, J. and Robin V. (2020, November). Florida Building Code, Energy Conservation, 7th Edition (2020) vs. 2018 International Energy Conservation Code Residential Stringency Analysis. FSEC-CR- 2102-20. Florida Solar Energy Center/University of Central Florida.

Bereket, N. and Muthusamy S. (2021, June). Comparison of the Commercial Provisions of the 2020 Florida Building Code, Energy Conservation, 7th Edition with 2021 IECC & ASHRAE 90.1- 2019. FSEC-CR-2113-21. Florida Solar Energy Center/University of Central Florida.

U.S. Green Building Council. (2019, July). *LEED v4 Homes and Multifamily Midrise – current version*. <https://www.usgbc.org/resources/leed-v4-homes-and-multifamily-midrise-current-version>.

U.S. EPA. (unknown). *Features & Benefits of ENERGY STAR Certified Homes & Apartments*. ENERGY STAR. https://www.energystar.gov/newhomes/explore_features_benefits#:~:text=ENERGY%20STAR%20certified%20homes%20and,homes%20on%20the%20market%20today.

ACEEE. Residential Codes. <https://database.aceee.org/state/residential-codes>

Salcido VR., Chen Y., Taylor ZT., YL Xie. (2021, July). Energy Savings Analysis: 2021 IECC for Residential Buildings. U.S. Department of Energy, Pacific Northwest National Laboratory.

Energy Codes. Status of State Energy Code Adoption – Residential. <https://www.energycodes.gov/status/residential>

Hart R., McNeill., Tillou M., Franconi E., Cejudo C., Nambiar C., Hagda H., Maddox D., Lerond J., Rosenberg M. (2022, January). 90.1 Energy Credits Analysis Documentation. U.S. Department of Energy, Pacific Northwest National Laboratory.

Zhang J., Rosenberg M., Lerond J., Xie Y., Nambia C., Chen Y., Hart R., Halverson M., Maddox D., Goel S. (2021, July). Energy Savings Analysis: ANSI/ASHRAE/IES Standard 90.1-2019. U.S. Department of Energy, Pacific Northwest National Laboratory.

Athalye R., Halverson M., Rosenberg M., Liu B., Zhang J., Hart R., Mendon V., Goel S., Chen Y., Xie Y., Zhao M. (2017, October). *Energy Savings Analysis: ANSI/ASHRAE/IES Standard 90.1-2016*. U.S. Department of Energy, Pacific Northwest National Laboratory.

Maddox D., Zhang J., Xie Y., Xu W., Liu X., Wang S., Rosenberg M. (2022, September). Energy and Energy Cost Savings Analysis of the IECC for Commercial Buildings. U.S. Department of Energy, Pacific Northwest National Laboratory.

Athalie R., Rosenberg M., Liu B., Zhang J., Hart R., Mendon V., Goel S., Xie Y. (2013, August). *Energy and Energy Cost Savings Analysis of the IECC for Commercial Buildings*. U.S. Department of Energy, Pacific Northwest National Laboratory.

Athalie R., Rosenberg M., Liu B., Zhang J., Hart R., Zhuge J., Xie Y. (2015, August). *Energy and Energy Cost Savings Analysis of the 2015 IECC for Commercial Buildings*. U.S. Department of Energy, Pacific Northwest National Laboratory.

California Energy Commission. (2016, September). *Energy Efficiency Comparison: California's 2016 Building Energy Efficiency Standards and ASHRAE/IESNA Standard 90.1-2013*.

Office of Energy Efficiency and Renewable Energy. (2021, July). ANSI/ASHRAE/IESNA Standard 90.1-2019 Final Determination Quantitative Analysis. U.S. Department of Energy, Pacific Northwest National Laboratory.

Halverson M., Richman E., Liu B., Winiarski D. (2011, May). *ANSI/ASHRAE/IESNA Standard 90.1-2007 Final Determination Quantitative Analysis*. U.S. Department of Energy, Pacific Northwest National Laboratory.

Halverson M., Rosenberg M., Hart R., Richman E., Wang W., Xie, Y., Zhang J., Goel S., Mendon V., Athalie R., (2014, August). *ANSI/ASHRAE/IES Standard 90.1-2013 Determination of Energy Savings: Quantitative Analysis*. U.S. Department of Energy, Pacific Northwest National Laboratory.

Thornton B., Rosenberg M., Liu B., Richman E., Wang W., Xie, Y., Zhang J., Cho H., Mendon V., Athalie R., (2011, May). *Achieving the 30% Goal: Energy and Cost Saving Analysis of ASHRAE Standard 90.1-2010*. U.S. Department of Energy, Pacific Northwest National Laboratory.

U.S. EPA. (unknown). *Residential New Construction Program Requirements*. ENERGY STAR. https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfhr/program.

U.S. Green Building Council. (2019, July). *LEED v4 for Building Design and Construction*. <https://www.usgbc.org/resources/leed-v4-building-design-and-construction-current-version>.

ACEEE. Commercial Codes. <https://database.aceee.org/state/commercial-code>

Energy Codes. Status of State Energy Code Adoption – Commercial. <https://www.energycodes.gov/status/commercial>

1.13 Energy Efficiency Testing Policy

(Adopted January 2020; Revised March 2023)

Effective Date: All projects registered on or after January 1, 2020 must meet the requirements outlined in this policy.

Energy efficiency testing should be conducted in accordance with the following. When tests are performed by someone other than the NGBS Green Verifier, the verifier should collect and retain proof of the professional's credentialing information.

Reference Standards for Energy Efficiency Testing					
Test	Relevant 2020 NGBS Practices	Reference Standards	Qualified Professional	Guidance/Areas to Test	Sampling Allowed for Multifamily Buildings
Building Envelope Tightness / Air Leakage Validation of Building or Dwelling Unit or Sleeping Units (Blower Door Test)	703.4.3.2(1)* 11.701.4.3.2(1)* 705.6.2.1(1) 703.2.4 11.703.2.4 11.705.6.2.1 11.705.6.2.1 1203.7(A)*	ASTM E779 or ASTM E1827 or ANSI 380**	<p>Qualified professional has received infiltration and duct leakage training and certification from one of the following organizations:</p> <ul style="list-style-type: none"> • <u>Building Performance Institute (BPI)</u> • <u>Building Science Institute (BSI) Quality Assessor / Quality Assessment Designee, ENERGY STAR Verifier, ENERGY STAR Field Specialist, Energy Code Compliance Verifier</u> • <u>Residential Energy Services Network (RESNET)</u> 	<p>Building, groups of dwelling units, dwelling unit, or sleeping unit.</p> <p>Air leakage testing should only be conducted after all elements of the thermal envelope, including windows, have been fully installed. While many assume that air leakage results will only stand to improve after additional features are installed, that may not always be true.</p> <p>Where any air leakage result is less than 0.1 over the limit (5ACH or 3ACH, depending on the project's climate zone), it is acceptable to round down to the nearest tenth. For example, a value of 3.06 would round down to 3.0. Where any air leakage result is more than 0.1 over the limit, verifiers are encouraged to improve the air sealing and trouble-shoot to get the number down before retesting.</p> <p><i>Single-family homes:</i> mandatory</p> <p>For the 2012 NGBS, testing <u>OR</u> visual inspection is required. For the 2015 and 2020 version, both are mandatory.</p>	Y

Reference Standards for Energy Efficiency Testing					
Test	Relevant 2020 NGBS Practices	Reference Standards	Qualified Professional	Guidance/Areas to Test	Sampling Allowed for Multifamily Buildings
				<p><i>Multifamily:</i> required, unless building is classified as commercial by IECC, and building is in compliance with IECC C402.5 (Air Leakage-thermal envelope). Commercial buildings have option to comply via testing or per C402.5. Also see Multifamily Air Leakage Alternative on page 3 below.</p> <p>If the party performing the testing is not an accredited verifier, a written report of the results should be signed by the party conducting the test and provided to the NGBS Green Verifier.</p>	

Reference Standards for Energy Efficiency Testing					
Test	Relevant 2020 NGBS Practices	Reference Standards	Qualified Professional	Guidance/Areas to Test	Sampling Allowed for Multifamily Buildings
Duct Testing / Duct Leakage	703.1.3 703.4.4 705.6.2.3(2) 11.703.1.2 11.703.4.4 11.705.6.2.3(2) 1203.4* 1203.14*	<i>Mandatory Duct Leakage (703.1.3):</i> ICC IECC R403.3.2 through R403.3.5, as applicable <i>HVAC Duct Leakage Testing (705.6.2.3):</i> IECC R403.3.3 and R403.3.4	<p>Qualified professional has received infiltration and duct leakage training and certification from one of the following organizations:</p> <ul style="list-style-type: none"> • <u>Building Performance Institute (BPI)</u> • <u>Building Science Institute (BSI) Quality Assessor / Quality Assessment Designee, ENERGY STAR Verifier, ENERGY STAR Field Verifier, Energy Code Compliance Specialist, Energy Code Field Verifier</u> • <u>Residential Energy Services Network (RESNET)</u> <p>The person performing the test must be a third-party. The HVAC contractor would not qualify if they are directly involved with installing the system being tested.</p>	<p>Mandatory for all 2015 and 2020 NGBS projects complying with Chapter 7 via the Prescriptive Path, if some or the duct system or air handler is in unconditioned space.</p> <p>Where duct testing is not required nor conducted (i.e., low-rise multifamily projects pursuing performance path), an entry of exempt/untested are to be utilized in the building energy model, if available. Where such entry is unavailable in the modeling software, the threshold percent leakage value should be utilized.</p> <p>Under certain conditions, testing of common areas may be required. See additional guidance.</p> <p>For renovation, duct leakage testing is required if the ducts are being modified or replaced.</p> <p>A written report of the results shall be signed by the party conducting the test and provided to the NGBS Green Verifier.</p> <p><i>For HVAC Duct Leakage Testing:</i> points available under 705.6.2.3 where duct testing is not required by IECC. Sampling is permitted.</p>	Y

Reference Standards for Energy Efficiency Testing					
Test	Relevant 2020 NGBS Practices	Reference Standards	Qualified Professional	Guidance/Areas to Test	Sampling Allowed for Multifamily Buildings
HVAC Airflow Testing	705.5.1 705.5.2 705.6.2.2(1) 705.6.2.2(2) 11.705.6.2.2	ACCA 5 QI-2010, Section 5.2	<p>705.5.1(1-2) awards points when the following professionals are involved with HVAC design and installation:</p> <ul style="list-style-type: none"> • HVAC contractor certified by the Air Conditioning Contractors of America Quality Assured Program (ACCA/QA) or equivalent; • EPA-recognized HVAC Quality Installation Training Oversight Organization (H-QUITO) or equivalent; • HVAC installation technician(s) certified by North American Technician Excellence, Inc. (NATE) or equivalent. <p>Home Innovation recognizes the following multifamily/commercial sector credentials as equivalent to those under 705.5.1(1).</p> <ul style="list-style-type: none"> • Associated Air Balance Council (AABC) Test and Balance Technician; • Associated Air Balance Council (AABC) Test and Balance Engineer; and • National Environmental Balancing Bureau (NEBB) Personnel Certification. 	<p>Testing and balancing demonstrated via flow hood or other acceptable flow measurement tool. Test should be performed within multifamily common areas, unless there are extenuating circumstances (e.g., location of ducts) that make testing difficult. When testing is not performed, an explanation is provided within verification.</p> <p>Verifiers should review and retain testing and balance report for all areas tested.</p>	Y
*=Mandatory Practice **=only referenced in Renovation chapter					

Additional Guidance

Multifamily Air Leakage Alternative

701.4.3.3 states that multifamily buildings four stories or more in height and in compliance with IECC Section C402.5 are automatically in compliance with 701.4.3.1 (building thermal envelope air sealing) and 701.4.3.2 (air sealing and insulation).

This alternative is available for buildings that are 4+ stories and permitted as commercial. If the building is permitted as residential, testing is required per the IECC and NGBS.

If there is a question about how a particular building is classified, verifiers should discuss with the builder/developer. Home Innovation is not expected to respond to questions about code eligibility.

Multifamily Common Area Duct Testing

The following guidance should be followed for multifamily common areas (see NGBS definition) but does not necessarily apply to accessory structures or commercial space.

Where low-rise (up to 3 stories) multifamily buildings are complying via the Prescriptive Path and ducts are outside of conditioned space, duct leakage testing is required for multifamily common areas.

In a scenario where units have ductless systems and common areas have ducted systems (or vice versa), testing is required when common areas comprise a significant portion (~30% or more) of the building. The verifier should use their best judgment to determine when to test. Where there are extenuating circumstances (e.g., duct location, room configuration, etc.) that make testing difficult, a verifier may elect not to test. If testing is not completed, an explanation is provided within the verification report.

Regardless of whether testing is completed, visual inspection for sealing is required.

If the units and common areas have any mix of ductless and ducted systems, points cannot be claimed for both completing duct leakage testing (705.6.2.3) **and** having ductless systems (703.4.1 and/or 703.4.2). Points should be awarded for the predominant system.

1.14 Multifamily Building Radon Testing Protocol

(Adopted September 2020; effective for all projects registered for 2020 NGBS certification)

Radon testing is mandatory in the 2020 NGBS for buildings in Zone 1 **unless** the occupied space is located above an unenclosed open space.

The radon testing conducted must meet the requirements of 902.3.2 Radon Testing. However, a representative sample is permitted for multifamily buildings in accordance with the sampling protocol below.

Ground-contact occupied areas. At least 25% of ground-contact dwelling or sleeping units must be tested.

Ground-contact units are any unit that has floor(s) and/or wall(s) in contact with the ground or is over crawlspaces, utility tunnels, or parking garages. Within each dwelling, test a room located in the lowest livable level that is in contact with the ground or above a crawlspace, utility tunnel or garage. If the lowest level is not currently used but could serve as a den, playroom, office, work area or an additional bedroom at some time in the future, conduct a test in this level.

Measurements must also be collected in non-residential ground contact rooms or areas (e.g., common areas, amenity spaces, utility rooms, storage rooms, exercise rooms, and maintenance rooms) that: a) are occupiable with little or no modification; or b) have air communication with occupiable areas by way of stairwells, elevator shafts or other unoccupied location that may serve as a pathway for radon into occupied spaces on upper floors.

When in doubt, it is recommended to test the area. These unoccupied areas may serve as a pathway for radon into apartments and offices of upper floors.

Upper Floors. On the upper floors, conduct a measurement in at least one apartment on each floor; include measurements in at least 10% of the dwellings on each of the higher floors. It is recommended that the upper floor test locations be selected so that units on one floor are not directly above or below units being tested on other floors.

Exemptions: Home Innovation always encourages testing in Zone 1 or for buildings in any location where the developer/owner would like the certainty that testing can provide – NGBS Green is intended as an above-code, high performance building standard. However, there are a few exemptions we recognize. If the garage area is the podium for the residential portion, and the floor above is concrete, the building is exempt from testing. These spaces act more like carports and are open to natural ventilation. Wood framed space over enclosed garages need to be tested. There is some discretion involved here on the part of the Verifier. If you are unsure about a specific building's configuration, take the more conservative approach with the project and/or [contact us](#).

Commercial Spaces. If the retail or other commercial space within a mixed-use building is pursuing NGBS Green Commercial Space certification, radon testing must also be performed in the non-residential areas of the building per 902.3.

For more information and detailed instructions, See ANSI/AARST MAH-2019 [Protocol For Conducting Measurements Of Radon And Radon Decay Products In Multifamily Buildings](#).

2. NGBS GREEN PROGRAM – PROCESS-RELATED GUIDANCE

2.1 Mandatory, Free Registration

(Effective November 2012; Revised Nov 2021)

NGBS Green certification has a mandatory online registration process. Registration is free.

Only accredited NGBS Green Verifiers and Verifier Admins can register projects for certification.

Projects are registered at <https://axis.pivotalenergy.net/>.

A project, for purposes of registration, is defined as one of the following:

- a. A single-family home
- b. A stand-alone multifamily building
- c. One phase of a residential land development
- d. Development/community of multiple multifamily buildings
- e. A development/community of mixed multifamily and single family, or
- f. A small remodeling project

Single-family homes must all be registered separately, even if all homes within a community will seek certification.

A verifier can register a project any time after he/she has a formal commitment with a client for verification services.

Registration provides each project with a unique Project ID. The Project ID is required at: (1) Rough verification report submission; and (2) Final verification report submission.

2.2 Rough/Final Verification Reports

(Effective August 2008)

There are two verification inspections for most projects: Rough and Final. The same spreadsheet is used for recording both the Rough and Final inspections. The verification report includes a cell to indicate if the submission is for a Rough or Final inspection. Please accurately note the inspection phase being conducted. The Rough/Final report type controls which items are mandatory based on the verification phase. Mandatory items for a Final inspection will not be highlighted if the report still says Rough. Do not change any entry in the Rough column when preparing the Final. If something was incorrectly recorded or missed, correct it in the Final column and add a note of explanation.

2.3 Alternatives for Builder Signature

(Effective October 2011, Deleted November 2021)

As of November 2021, Home Innovation no longer requires builder and verifier signatures on submitted verification report.

The signature fields have been removed from the Rough and Final Summary tabs (previously titled “Rough Signature” and “Final Signature” within the NGBS Green Scoring Tools. Builder and verifier contacts, inspection date/time, team verification, batch submission, and sampling section should still be completed.

2.4 Project Address Changes

(Effective June 2013; Revised Nov 2021; Revised Jan 2024)

Home Innovation does not need to be notified of an address change if the home was registered with a lot number (if the lot number was correct) when the Final report has a postal address. Verifiers should ensure the address is correct in AXIS.

The address on the verification report must match the address for the building that was inspected. The Final report must contain the physical address of the project. The NGBS Green certificate cannot be issued with a Lot # or PO Box.

2.5 Certificate Reissuance

(Effective March 2015; Revised Nov 2014; Mar 2019, Nov 2021; Jan 2024)

Clients can reprint NGBS Green certificates on the AXIS portal as many times as necessary for no additional fee. But a \$50 administrative fee will be charged for a correction of a certificate that is not the result of a Home Innovation error. This includes instances where the builder company name in our database is different than how the builder wants to be listed on the NGBS Green certificate. Ample opportunity is provided for the builder to confirm the correct company name prior to the certificate being sent. NGBS Green Verifiers are responsible for informing clients of this administrative fee.

Anyone may request an NGBS Green certificate for a home, multifamily building, or land development provided the administrative fee is paid.

2.6 Certificate Reissuance for New Certification Level

(Effective January 2022; Revised Mar 2024)

If, upon re-evaluation, a building has sufficient points to earn a higher certification level than the level that was initially reviewed and certified, the Verifier can re-submit the verification report(s) following the process below.

- Email Lynda with the Project ID/address or certificate number
- Pay the administrative review fee
- Re-submit the corrected Final verification report with detailed notes as to where the additional certification points came from
- Home Innovation will review and, if approved, re-issue a new certificate – please note this review might take up to a week as it is required to be reviewed by a senior reviewer

2.7 Verifier Changes / Reassignment

(Effective March 2015; Revised Mar 2019)

If a Client would like to change the Verifier hired to provide verification services after a project has been registered (and the Verifier is from a different company), the client must email Home Innovation to notify us of that change. If we have already received the Rough inspection documentation for the project, and upon request of the Client, we will provide the new verifier with the Rough documentation submitted for review so that it can be used for the Final inspection. Verifiers within the same company can switch between projects without notifying Home Innovation.

2.8 Overnight Delivery

(Effective March 2015; Revised Nov 2014)

NGBS Green certificates are delivered online. However, if a Client needs a hard copy for whatever reason, Home Innovation offers overnight delivery for an additional fee.

2.9 NGBS Version Transition

(Effective August 2014; Revised Oct 2016)

No fee is charged for a project to transition from one NGBS version to another NGBS version **before the Rough inspection** and before the completion deadline has passed.

A \$50 review fee is charged when a building seeks to transition from an earlier version of the NGBS to a newer version **after the completion deadline has passed** and **if the Rough inspection has already been completed and verification report submitted**.

2.10 Batch Submission Protocol

(Effective May 15, 2015; Revised Aug 2015; Revised Mar 2017; Revised Jan 2020; Revised Nov 2021; Revised Apr 2022; Revised Sep 2022; Revised Aug 2023)

Scope: Batch Submission Protocol is an alternative submission process for verification reports to the standard process outlined in the **Verifier's Resource Guide (VRG)**. Batch submission is intended to reduce paperwork associated with verification, but not reduce verification stringency.

Batch submission is available for the New Construction, Renovation, Single-Family Certified, and Commercial Space pathways. Batch submission is not available for Accessory Structures.

Single-family Batch submission is available for use by any NGBS Green Verifier with multiple single-family homes constructed by the same builder (other restrictions apply depending on scoring pathways pursued, see below).

Multifamily Batch Submission is available for multifamily buildings within the same registered project. *Only Master Verifiers can utilize batch submission for multifamily buildings.*

Intent: The Batch Submission Protocol allows accredited NGBS Green Verifiers to submit one verification report for multiple homes/buildings built by the same builder. Each building must be fully-inspected per the VRG and the relevant NGBS practices verified at Rough and Final. Homes/buildings included in the batch must comply with the same practices, which are reflected on the verification report.

Objectives:

- Streamline documentation by reducing the number of verification reports that must be completed.
- Reduce the time and cost for the NGBS Green Verifier to manage verification documentation.

How It Works:

- The Verifier must register the homes or buildings.
- Batches can be between 2 and 50 homes/buildings.
- Buildings included within a batch must be located within the same county.
- All homes/building within a batch must have the same type of heating and cooling systems.
- Single-family homes can be detached or attached (e.g., townhouses, row-houses). A batch can include a mix of attached and detached homes, provided that the features are similar enough to be scored the same.
- For multifamily, buildings of varying heights and unit counts can be grouped. However, a batch should NOT include a mix of both low-rise (up to 3 stories) and high-rise buildings (4+ stories), as those buildings are subject to distinct code requirements.
- All Single-family homes within a batch must have the inspections completed within a 60-day period. There is no time limit for multifamily projects. The NGBS Green Verifier performs full verification, as outlined in the **Verifier's Resource Guide (VRG)**, on each building. Verification of buildings must be complete before the batch is submitted.
- For points to be awarded, every building in the batch must comply with the relevant practices. If the point level for NGBS practices varies between homes/buildings, the verifier should either (a) submit a report

claiming the fewest points for practices in all the homes/buildings, OR (b) submit a separate verification report for each home/building; the homes/buildings will then no longer be reviewed as a batch.

- The NGBS Green Scoring Tools include additional fields to convey the project numbers, addresses, and inspection dates of all homes within a batch.
- Each batch submission should include the following:
 - One Batch Submission Verification Report.
 - Photos of each home, with files named to properly identify which photos correspond to each building address. When submitting a batch, consider utilizing the “Description” box (shown as part of the File Upload menu) to identify the address that corresponds to each building photo. This will help our Green Reviewers feel confident that a photo of each building was submitted, with no duplicates or missing items.
 - A single energy report or certificate that reflects the worst-case for the buildings within the batch (dependent on the Energy Efficiency compliance path pursued).
 - A single WRI tool that reflects the worst-case for the buildings within the batch (dependent on the Water Efficiency compliance path pursued).
- Additional requirements by certification pathway:
 - *New Construction*: The energy efficiency report for the worst-case in the batch must be submitted and values entered within the verification report.
 - *Renovation*: if pursuing energy and/or water performance pathways, details of the worst-case scenario should be documented in the Scoring Tool, in the separate Optional Remodel Performance Tool, or in a separate analysis.
 - *Single-Family Certified*: all energy efficiency testing values must be entered on Summary pages for all homes within batch.
- Home Innovation will issue an individual NGBS Green certificate for each home/building in the batch.

2.11 Alternative Multifamily Verification Protocol (Sampling)

(Updated January 2020; May 2023; Jun 2023)

Note: The May 2023 update to this protocol expanded sampling application to build-to-rent (BTR) single-family homes. Home Innovation recognizes that BTR development typically employs a higher level of quality assurance and crew consistency than for-sale homes. Sampling remains **unavailable** for for-sale home construction or renovation.

Verifiers Accreditation Criteria

- a. Any NGBS Green Verifier can employ the following protocol when performing Energy Efficiency Testing (for specific practices, see policy) on multifamily buildings or build-to-rent single-family homes. If employing an NGBS Green Field Inspector or HERS Rater to conduct testing, those individuals are allowed to sample under the direction/supervision of the verifier.
- b. NGBS Green Master Verifiers can employ the protocol for all other NGBS practices, except those identified as exceptions under **Application of Sampling**, below. A Master Verifier can work in partnership with another accredited NGBS Green Verifier on the inspection of sampled units, provided that the procedure outlined above is fully executed, and the NGBS Green Master Verifier is the Verifier of Record for the Project.

Responsibilities of NGBS Green Verifiers

- a. NGBS Green Verifiers are responsible for ensuring that all Alternative Verifications conducted and issued comply with the **Verifier’s Resource Guide (VRG)** and NGBS Green Program Policies. Abuse of this

protocol and/or any other additional relevant NGBS verification policies may result in the Verifier's accreditation being revoked and may jeopardize the building's certification.

Technical Protocols

- a. **Note:** This protocol provides an alternative verification approach for units within a multifamily building or set of multifamily buildings where verification is only performed on a set of sampled units. This protocol is distinct from the Batch Submission Protocol, where full verification is performed across multiple single-family homes or multifamily buildings but only one verification packet is submitted.
- b. The protocol can be employed at Rough and/or Final inspection at the NGBS Green Verifier's discretion.
- c. **Units Eligible to be Sampled**

Building or project with 20 or more multifamily units. Where a community of single-family units are designed as rentals, sampling is permitted, regardless of whether they are registered as multifamily or single-family.

Units sampled shall be of the same construction type, using the same envelope systems.

- d. **Acceptable Sample Set**

Sampling can be employed across units within the same multifamily building and/or across multifamily buildings within the same community. Sample sets need not be the same at Rough inspection and at Final inspection; sample sets can be entirely different.

Units chosen for verification from within a sample set should be chosen at random to the extent practical. A sample set should include a proportional number of each unit type (e.g., 1-bedroom; 2-bedroom, one bath; 2-bedroom, 2 bath, etc.).

Where features (i.e., appliances, fireplaces, decorative elements) vary based on the residents/owners/users, such as for top (penthouse) or first floors (lobby, common areas), full verification is required for the NGBS practices associated with those features.

If the construction superintendent and/or trade foremen change during construction, NGBS Green Verifiers are encouraged to share their plan for sampling with the new personnel.

The following sample set sizes are allowed, based on verifier experience and credentials:

- 1 in 5 units – NGBS Green Verifiers with less than 2,000 verified multifamily units (*Sampling of Testing Practices Only*)
- 1 in 7 units – NGBS Green Verifiers with 2,000 or more verified multifamily units; NGBS Green Master Verifiers (*Full Verification Sampling, with Exceptions*)

Verified units are based on total verified units of Verifier of Record (individual signing signature pages) at time of inspection notification.

Sample set is made up of 5 or 7 units (depending on verifier's experience/credentials) or more at the same stage of construction (e.g., ready for a Rough or Final inspection) on the inspection date. Sample sets need not be carried through from Rough inspection to Final inspection.

At least 1 in 5 or 7 (depending on verifier's experience/credentials) units must be inspected per sample set and per the entire project.

Eligibility

To qualify for sampling, a verifier shall conduct a complete verification of all NGBS practices on the first seven (7) units within the first building without any incidence of failure. Successful verification of the initial units will allow the Verifier to use sampling throughout building and/or community until a “failure” occurs on any NGBS practices. Complete verification of 7 units is not required for each subsequent building within the same community constructed by the same builder.

Application of Sampling

Verification should be performed at a minimum ratio of one (1) test or inspection per 5 or 7 units within a given sample set.

If individual units have optional design elements (appliances, fireplaces, cabinets, etc.) and points are claimed for practices associated with those design elements, full verification of these NGBS practices must be completed on all units or verified through documentation (e.g., order slips, delivery tickets) following standard VRG protocol.

Multifamily common areas, including amenity areas like gyms and clubrooms, should not be sampled. All spaces should be visually inspected to ensure that installed features meet the same NGBS practices as the dwelling units. Where necessary, energy efficiency testing may be required per Energy Efficiency Testing policy.

For single-family build-to-rent: construction superintendent or another on-site professional must collect photo evidence that the following mandatory practices are met in every home, even those not selected for inspection. Verifier must review and approve provided photos. If any photos show non-compliance, corrective action is required, and full verification is required for next seven (7) homes. Full visual inspection per the VRG is required for all homes selected for inspection.

602.1.9 Flashing

701.4.3.2.1 Grade I Insulation Installation

901.3(1) Garages

902.3(1a) Radon Reduction Measures

1202.7 Flashing

1205.3(1a)

1205.9 Radon Control

Exceptions:

- If complying with the Energy Efficiency chapter via either the HERS or Alternative Bronze/Silver paths, the project team should adhere to all policies and protocols of the selected program to achieve a confirmed rating or certification from the oversight body.
- 2012 NGBS 703.1.2 – Sampling is not permitted; every unit should be inspected to confirm insulation installed exceeds Grade III.
 - **Note:** sampling of insulation installation is permitted under the 2015 and 2020 NGBS versions.
- 2020 NGBS 705.6.1 – Per the 2020 NGBS, a representative sample inspection of a minimum of 15% of the buildings or dwelling units or sleeping units is permitted.

- 2020 NGBS 902.3.2 – Per Multifamily Building Radon Testing Protocol, a representative sample is permitted. At least 25% of ground-contact dwelling or sleeping units must be tested and at least 10% of dwelling units on each higher floor.
- 2020 NGBS 1203- Per the 2020 NGBS, no sampling allowed for any Certified Path Energy Efficiency practices.

Verification of Units

Interpretation of the practices and documentation requirements must otherwise follow the VRG.

When sampling begins, the Verifier may either verify all claimed practices on a single unit OR distribute the practices across multiple units within a given sample set, provided that the all claimed practices are verified at a frequency that meets or exceeds the 1:5 or 1:7-unit ratio outlined above.

Failure

“Failure” is defined by inability for a Verifier to confirm compliance with any mandatory practice or award points for any claimed optional practice.

Should failure occur for an optional practice, the Client has a choice between (1) the Root Cause Analysis & Preventive Action procedure outlined below to address failed item(s) or (2) not receiving NGBS points for failed practice(s) for the entire building.

Should failure occur for a mandatory practice, the following procedure must be followed.

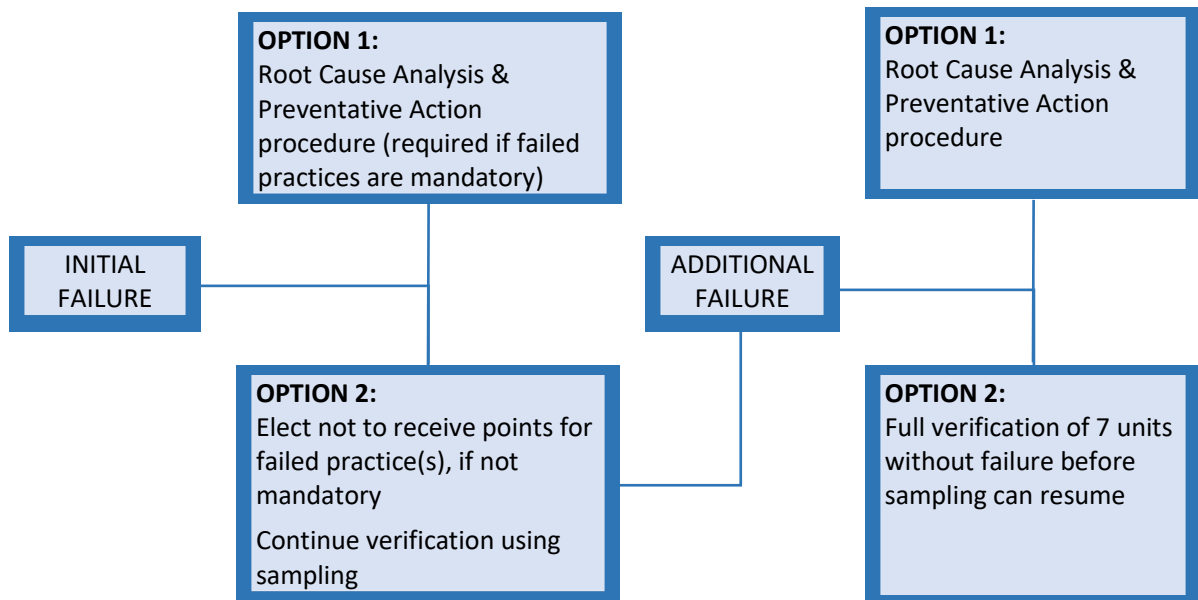
When an “initial failure” occurs, the failed practices(s) shall be verified in two additional units selected from the same sample set during the same inspection. If the failed practices are successfully verified in the additional two units, then sampling can proceed for the building/community.

If an “additional failure” occurs in one or more of the two additional units, two options are available to remedy the issue: (1) completion of a Root Cause Analysis & Preventive Action analysis outlined below and successful implementation of preventative action plan; or (2) Full verification of seven (7) units without failure before sampling can be re-instituted. The general contractor and/or construction superintendent should sign the root cause analysis document. The verifier should retain any root cause analysis reports in project files for a minimum of three (3) years.

Regardless of the option selected, all units within the sample set that identified the failure must be 100% verified per the VRG for the failed practice(s), and any issue(s) identified must be corrected by the builder and re-inspected by the Verifier.

If no additional failures are identified, sampling may continue once that issue has been corrected by the builder.

Addressing Failure



Root Cause Analysis & Preventive Action

Should the builder or verifier decide not to fully inspect seven additional units to address a failure as noted above, the builder/developer must conduct a “root cause analysis” on the NGBS practice(s) that resulted in failure before sampling can resume. The builder/developer should submit a written explanation of the failure and the plan to prevent any reoccurrence to the Verifier. Sampling may resume, provided that the Verifier has confirmed that the analysis and preventive actions appear to be appropriate and effective.

The “root cause analysis” report, at a minimum, shall contain:

- A written description of the problem(s) covered by the analysis;
- A written explanation of the underlying reason(s) that the problem(s) occurred (e.g., inadequate training of subcontractor(s) or site supervisors, insufficient information or inadequate detail in the plans or specifications, etc.);
- A written description of a clearly defined process to correct the underlying cause(s); and
- A written description of when and how that preventive action has been implemented.

Root cause analysis reports do not need to be uploaded to AXIS. However, they should be retained as they may be requested as part of a desktop audit.

Administration

Verifiers should identify at registration that the inspection will be verified via the NGBS Alternative Multifamily Verification Protocol.

On the Verification Report, the Verifier must identify the sample set range and units sampled, as well as the specific roles of the Verifier(s) involved with the project (if multiple verifiers inspected the project).

Single-family build-to-rent projects have two options for documentation and submission:

- Batch submission of all homes within a given sample set; sampling table is completed within the batch workbook
- Each home is submitted individually

Communication with the Builder/Developer

Use of sampling is always at the Verifier's discretion. For any specific project, the Verifier should only employ it when they have confidence that the builder will be able to construct an NGBS compliant building. Regardless of whether a Verifier selects to use the sampling protocol or not, Verifiers should clearly communicate to their clients that corrective action, unexpected inspections, and even delays, may be necessary to attain NGBS Green certification if compliance issues arise during the construction process. Verifiers should communicate to clients that units selected for sampling must be random and cannot be directed by the builder team.

Certification & Marketing Considerations

NGBS Green Certification is granted at the building-level and not to specific multifamily units. Review for certification can only proceed once the sampling protocol is successfully completed for the entire building. No distinction is made between units that underwent inspection and testing and those that did not on green certificates or marketing collateral.

3. NGBS GREEN VERIFIER ACCREDITATION POLICIES

3.1 Maintaining Verifier Accreditation Policy

(Revised November 2014)

NGBS Green Verifier accreditation is specific to an individual; a company or organization is not accredited. If an individual intends to provide verification services on behalf of an organization for which the verifier is not the sole owner, an officer of that company must provide consent.

Verifier accreditation is portable, and a Verifier can maintain their accreditation at no additional cost even if they switch employers, provided that the Verifier re-submits proof of insurance, an application, and a signed agreement prior to the expiration date of their accreditation. If a verifier is unable to submit new insurance and a completed Verifier Agreement prior to the expiration date of their accreditation, s/he will be required to re-submit payment along with a new application. If the application is not renewed within the 30-day grace period, the Verifier must start the accreditation process from the beginning, including the training and exam.

If Home Innovation is informed that a Verifier was removed from his/her job due to reasons that may reflect poor performance and/or lack of compliance with Home Innovation's verification protocols, the Verifier's accreditation will be suspended until Home Innovation completes an audit and is satisfied that the Verifier is competent to provide verification services.

Full terms of NGBS Green Verifier accreditation are outlined in the Verifier Agreement.

3.2 Verifier Termination Policy

(Revised November 2014)

Home Innovation reserves the right to terminate an NGBS Green Verifier for a variety of reasons, including but not limited to:

- Failure to provide accurate, credible, and timely verification inspections and reports
- Failure to remain independent
- Failure to renew the accreditation annually
- Failure to maintain the required insurance
- Lack of verification activity

Verifiers should consult the Verifier Agreement to review all the items that are enforceable with termination.

NGBS Green Verifiers who are terminated due to violation of any of the below requirements are reminded of the provisions of the verifier agreement which are enforceable after termination. These items include prohibition of service to a competing program for one year and the requirement to dispose of any proprietary information about the NGBS Green program.

Violation of the Non-compete Clause

(Paragraph 8.3 of Verifier Agreement)

- Verifiers must not provide services to other NGBS-based programs.

NGBS Green Verifiers are prohibited from providing verification services for a program based substantially on the ICC 700 National Green Building Standard (NGBS). NGBS Green Verifiers are expected to understand the NGBS and other programs that they are participating in well enough to recognize when they violate this clause.

Verifiers may provide verification services for other non-NGBS certification programs.

Home Innovation vigorously protects its intellectual property and believes that an individual or company cannot service a program based on the NGBS without utilizing knowledge gained from participating in the Home Innovation NGBS Green program.

Being listed or advertised, on a website or in other materials, as a verifier/rater for an NGBS-based program is enough evidence for Home Innovation to terminate a verifier. NGBS Green Verifiers who violate the non-compete clause will be notified in writing, along with the associated company management if applicable, that the verifier is immediately terminated.

Verifiers can provide verification services for any other green certification program based on another rating system or standard.

Verifiers terminated for this reason may not reapply for a period of one year. When s/he reapplies, acceptance is at the discretion of Home Innovation.

Conflict of Interest or Failure to Remain Independent

(Paragraph 8.9 of Verifier Agreement)

- Verifiers must remain independent.

NGBS Green Verifiers shall not have any conflicts of interest and must remain independent from the clients whose projects they are verifying such that the credibility of their verification is not open to question.

NGBS Green Verifiers are strongly encouraged to be careful to avoid potential conflicts and to ask Home Innovation for clarification prior to undertaking any activity that might be a conflict or jeopardize their independence.

NGBS Green Verifiers who do not maintain independence will be notified in writing, along with the associated company management if applicable, that the Verifier Agreement has been immediately terminated. NGBS Green Verifiers terminated for this reason may not reapply for a period of one year. When s/he reapplies, acceptance is at the discretion of Home Innovation.

Failure to Complete Annual Renewal

(Paragraph 1.3 of Verifier Agreement)

- Verifiers must renew accreditation annually.
- Failure to renew accreditation in a timely manner requires the verifier to repeat the entire training, testing, and application process.

NGBS Green Verifiers must renew their accreditation annually and are notified on the first of the month when their accreditation is set to expire. A follow up reminder is sent around the 15th of the month. Notification is sent via an email generated by the online Training/Testing Center and directly from Home Innovation.

If the renewal is not completed within the specified time period, verifiers are notified via email that they have been removed from the website for failure to renew their accreditation. This final email includes a 30-day termination notification pursuant to Paragraph 2.2 of the Verifier Agreement. Verifiers who complete the renewal within 30 days will be reinstated and re-listed on the website. If the accreditation is not renewed within that 30-day grace period, then the NGBS Green Verifier (and company management, if applicable) is notified by email that the agreement has been terminated.

NGBS Green Verifiers terminated for this reason may re-apply immediately.

Failure to Maintain Appropriate Insurance

(Paragraph 6.2 of Verifier Agreement) (Replaced 11/19/2023)

- Verifiers/Verifier Company must maintain required insurances (general liability, auto, and professional liability).
- Failure to maintain current insurance on the AXIS portal update insurance with Home Innovation Research Labs will lead to termination.

Should any of the required insurances expire any verifier from verifier company will be unable to submit report documentation.

Lack of Activity

(Paragraph 2.2 of Verifier Agreement)

- Verifiers are expected to stay active in and current with the certification program.
- Verifiers who do not submit at least one verification report in a two-year period may be terminated.

NGBS Green Verifiers who do not submit any verification reports within a two-year period will be reviewed for possible termination. Other required activities, such as opening and reading Verifier Updates, may be considered in this review.

If Home Innovation decides to proceed with termination due to inactivity, the NGBS Green Verifier will be given a 30-day notice prior to termination. At the end of the 30-day period, if the NGBS Green Verifier has not had any new verification activity, the NGBS Green Verifier (and company management, if applicable), will be notified by email that the agreement has been terminated. NGBS Green Verifiers terminated for this reason must re-apply for accreditation, complete the training and testing, and submit a new application, agreement, and evidence of insurance in order to be reinstated.

Poor Performance

(Paragraph 2.3 of Verifier Agreement)

- Client complaints of poor performance may lead to termination.
- Inaccurate verification or lack of compliance with the Home Innovation's protocols may lead to an audit and/or termination.

NGBS Green Verifiers serve as Home Innovation's field agents and are expected to provide accurate, credible, and timely verification inspections and reports. Home Innovation provides specific feedback to verifiers when verification issues are identified, as well as general guidance in monthly *Verifier Updates*.

NGBS Green Verifiers who do not consistently provide acceptable verification reports and verification services may be terminated at Home Innovation's discretion.

Beyond report quality, complaints from clients or homeowners are also factored into Home Innovation's assessment of verifier performance. Home Innovation will fully investigate all complaints received.

Home Innovation will typically provide a 30-day notice of poor performance issue. However, immediate termination is possible. Termination notices are sent in writing. Verifiers (and company management, if applicable) will be notified via email that the agreement has been terminated (company management, if applicable). Verifiers terminated for this reason may not reapply for a period of one year, and acceptance is at Home Innovation's discretion.

Responsibility of Home Innovation

Home Innovation will attempt to contact any builders who have registered projects with terminated verifiers and inform the builder(s) that another accredited verifier will need to be hired to finish the project. Home Innovation

will assist the builder, if needed, in finding another accredited NGBS Green Verifier to complete the verification process.

3.3 Verifier Performance

(Revised December 2023)

The credibility and integrity of the NGBS Green program relies on the performance of Home Innovation's independent agents in the field. NGBS Green Verifiers are expected to fully comply with the **Verifier's Resource Guide (VRG)** regarding inspection of projects seeking certification and completion of verification reports. NGBS Green Verifiers are also evaluated for their investment in staying informed of NGBS Green program policies and key program updates.

Verification Report Review

(Revised January 2024)

Each verification report provides the Home Innovation review team a snapshot of a verifier's:

- Understanding of the NGBS practices and compliance requirements
- Adherence to the verification protocol and certification process outlined in the **Verifier's Resource Guide (VRG)**
- Attention to detail

A verifier can earn an A, B, C, D, or F grade for a given verification report based on accuracy and completeness. Projects seeking higher levels of certification (i.e., Gold or Emerald) will be reviewed with greater stringency. These projects may receive more follow-up questions.

Verifiers are expected to interpret, discuss, and learn the NGBS. A demonstrated misunderstanding of the NGBS practices, verification protocol or failure to adjust verification reports will warrant lower grades on verification reports.

Verifier grades are available for review in the AXIS portal.

Home Innovation reviewers will add notes within the AXIS QA portal in the following scenarios:

- (1) Points incorrectly awarded for a NGBS practice(s) for which there was a recent policy change or interpretation.
- (2) Comments in the verification report that give the perception that the verifier does not understand a NGBS practice.
- (3) Points were incorrectly awarded for NGBS practice(s) where repeated mistakes have been observed (either by a specific verifier on multiple reports and/or repeated mistakes across multiple verifiers within the same company).

An informational email to clarify an interpretation when points denied is <5 – will not affect grade.

Multiple chapters with more than 5 points denial will affect the Verifier grade.

Verifier Organization Admins can view grades for all accredited verifiers employed by their organization.

Verifier Performance Issues

Verifiers receiving a grade of "C" as an average grade are encouraged to discuss verification issues with the Senior Manager, Green Building Programs.

Verifiers receiving a "D" or an "F" as an average grade will enter a 1-year probationary period. Accreditation renewal after the probation period will be contingent upon the verifier's performance and completion of remedial actions.

Effective March 2015, new verifiers to the NGBS Green program and those becoming re-accredited after a 14-month or longer lapse in accreditation enter 1-year probationary period upon accreditation.

Home Innovation may also put a verifier on probation mid-term, should performance issues warrant immediate action.

Verifiers under probation will be expected to discuss performance issues with the Senior Manager, Green Building Programs at time of renewal and submit evidence of at least 4 hours of CEU credits. Verifiers under probation for performance issues will be asked to complete additional CEUs on topics suggested by Home Innovation's review team.

Verifiers under probation will be subject to more frequent Desktop Reviews and Virtual Audits.

Verifiers with performance issues are ineligible to become Master Verifiers until an average grade of "B" or higher is maintained for a minimum of one year.

Master Verifiers receiving a C or below for two consecutive periods will have their Master Verifier credential revoked. Those individuals would need to wait 12 months before reapplying and re-testing for that recognition.

Grade Appeal Process

Home Innovation works to ensure that its Green Reviewer team members consistently issue grades per the Performance Policy Grading Rubric. However, it is possible that grades may be influenced by bias or human error. Given that, Home Innovation affords verifiers the opportunity to appeal a grade for a different result.

- A verifier can appeal a grade decision within 30 days of issuance.
- To appeal a grade, a verifier must submit the following to gbverifications@homeinnovation.com:
 - Verifier Name
 - ProjectID(s) and/or link(s) to AXIS project record
 - Report Phase (Rough/Final)
 - Grade Issued
 - Action Requested
 - Justification
- In preparing their appeal request, we recommend that Verifiers go line-by-line through the grading rubric (see next page) and try to objectively assess their grade as if they were an HI Green Reviewer. The results of that exercise can be included within the Justification section of an appeal request.
- Upon receipt of a verifier grade appeal, the project review files will be provided to another green reviewer for a second opinion.
- The Senior Manager, Green Building Programs (Cindy) will then evaluate the appeal justification against the initial and second review assessments, respond to the verifier, and adjust the grade, if appropriate. [If the Senior Manager, Green Building Programs was the initial reviewer, the evaluation and response will be assigned to another Green Team member.]
- Should the re-evaluation not result in the verifier's requested action, a \$30 appeal fee will be assessed.
- Home Innovation regularly monitors green reviewer grades to ensure consistency. Green reviewers who are subject to multiple appeal requests resulting in adjusted grades will be subject to additional review and mentoring.

NGBS Green Verifier Grading Rubric

VERIFICATION GRADES (Rough Report based on 1-3; Final Report based on 1-5; all 12 considered, as applicable)	A	B	C	D	F
1) Scoring Tool (30% of Rough, 20% of Final) Scoring spreadsheet is current version available on www.homeinnovation.com/GreenScoring .	Current version is used		Tool version number is 3-5 values lower than current version.		Tool version number is 5+ values lower than the current version.
2) Appropriate Practice/ Denial – (30% of Rough score, 20% of Final) Error where practices awarded don't align with project information provided.	<5 pts	5-10 pts	11-20 pts or 1 missed mandatory practice	21-30 pts	>30 pts or 2+ missed mandatory practices
3) Photos – (40% of Rough score, 20% of Final) Photo reflects current verification phase (Rough or Final). Photos are taken from the curb/driveway entrance, show full front elevation and adjacent landscape. Photos are clear, appropriate size/resolution for reviewer to see Lot Design practices- no thumbnail shots. When project design includes atypical features that may prompt reviewer questions, additional photos are included within initial submission.	Good	Adequate	Fair	Poor	Missing
4) Recommendations on Rough report not addressed at Final (20% of Final)	0	1	2	3	4
5) Number of Chapters with Point Shortfalls (20% of Final score) Number of chapters with point shortfalls for minimum certification level.	0		1	2	3

VERIFICATION GRADES (Rough Report based on 1-3; Final Report based on 1-5; all 12 considered, as applicable)	A	B	C	D	F
NOMINAL CONSIDERATION IN GRADING:					
6) Energy Report – (applies to Final Report) An Energy Performance Report must be submitted for most Chapter 7 compliance pathways. Energy modeling should be conducted according to the Energy Modeling Policy. Energy performance should match that claimed in the verification report.	Good		Does not match		Missing
7) Application of Sampling Protocol Where sampling was indicated at registration, details about available and sampled units is completed within verification report. Ratio of available and sampled units should align with protocol. When prepared, root cause analysis is submitted.	No issues		1-2 follow-up questions		3+ questions / issues identified
8) Follow-up Notes	0*	1	2	3	4
9) Verifier follow-up duration	None req*	< 5 days	5-10 days	11-20	> 20 days
10) Failure Cells (red or yellow) Quantity of red or yellow cells on report (e.g., ignoring the scoring sheet cells)	0	1	2	3	4 +
11) Failure to address a recommendation through numerous reports	Good response		Limited		No response

* A higher level certification justifies 1 follow up email with less than a 5-day turnaround by verifier.

Desktop Audits

A desktop audit is a review of plans and other compliance documentation. A desktop audit requires a Verifier to submit to Home Innovation documentation that the Verifier would be required to collect as part of their verification to demonstrate a building's NGBS Green compliance.

Desktop audits do not require Verifiers to collect plans, documentation, or other information that is beyond what they would normally collect. Home Innovation's objective is to confirm a Verifier is collecting the documentation and following the verification guidance outlined in the VRG. Desktop audit submissions should be concise and are evaluated for completeness and alignment with the VRG, as well as the Verifier's responsiveness to questions.

When submitting lengthy plans or reports, please make notations (e.g., circle, highlight, text box) within the document(s) to identify the areas that support your justification for awarding the practice(s). This helps our Reviewers to match the documentation more quickly to the desktop audit items requested and offers additional information about your reasoning for awarding points. It is also acceptable to extract selected pages or provide screengrabs rather than uploading entire plan files to AXIS.

A Verifier can earn an A, B, C, D or F grade for a desktop audit.

Desktop audit grades are available for review in the AXIS portal and are included as part of a Verifier's overall grade average that is reviewed for performance issues.

DESKTOP AUDIT GRADES	A	B	C	D	F
(1) Completeness (30%) All requested documents are included with the submission.	All items provided.	1-2 missing items	3-4 missing items	5+ missing items.	Desktop audit request ignored.
(2) Appropriate Documentation Provided (30%) Documents match those requested in the VRG. Documents demonstrate compliance and align with information included within Scoring Tool.	No issues.		1-2 questions/issues identified		3+ questions/issues identified
(3) Accessibility (10%) Documents are succinct, clearly demonstrating compliance	All items efficiently demonstrate compliance	1-2 items require user input to determine compliance	3-4 items require user input to determine compliance	5+ items require user input to determine compliance	Large manuals, specification sheets, etc. are provided
(4) Follow-Up Notes (15%)	0	1	2	3	4+
(5) Follow-Up Duration (15%)	None required.	<5 days	5-10 days	11-20 days	>20 days

3.4 WRI Grading

(Created May 12, 2022)

A Verifier can earn an A, B, C, D, or F grade for a WRI verification based on accuracy and completeness. Verifier grades are available for review in the AXIS portal. Verifiers can appeal a WRI grade using the process above in Section 3.3.

Stand-Alone WRI Grading Rubric

VERIFICATION GRADES	A	B	C	D	F
1) WRI Calculator Tool (33%) WRI Tool is the current available on Dropbox	Current version is used.		Tool version number is 3-5 values lower than current version. than the current version.		Tool version number is 5+ values lower than current version. cycles.
2) Complete & Appropriate Documentation (33%) Tool is complete, and information appears reasonable based on project details. If also pursuing WaterSense, checklist is also uploaded.	No issues		1-2 issues identified		3+ issues identified
3) Photo (33%) Front elevation photo is included. Photos are clear and appropriate/size/resolution for Reviewer to see building and adjacent landscaping.	Good	Adequate	Fair	Poor	Missing
4) Follow-Up Notes (Nominal Consideration)	0	1	2	3	4
5) Follow-up Duration (Nominal Consideration)	None required	<5 days	5-10 days	11-20 days	>20 days
6) Failure to Address a Recommendation Across Numerous Reports (Nominal Consideration)	Good Response		Limited		No Response

3.5 Virtual Inspection Protocol

(Created March 24, 2020; Updated April 15, 2020; Revised Dec 2021; Revised Apr 2022)

Intent: The virtual inspection process is available for Verifiers to confirm NGBS compliance remotely via video conferencing services under extraordinary circumstances beyond their control. Virtual inspection is intended to be used as a last resort when NGBS Green procedures cannot otherwise be followed. It is likely that a virtual inspection process may take more time and effort than an in-person inspection, which is why it should only be used as a last resort when in-person inspection is not possible.

Scope: This protocol can be used for the Rough and/or Final inspection for single-family homes and multifamily buildings.

The protocol applies to NGBS practices where visual inspection is stipulated, per the **VRG**.

Practices requiring measurements and testing must still be verified on-site. Estimates and predictions cannot be used. If the Verifier cannot complete the testing, they should work with the builder to identify a qualified professional who can perform the necessary tests. Please note that Home Innovation does not accept use of default testing values for any Energy Efficiency compliance pathway, including the Alternative Bronze and HERS Index Target paths.

Project Eligibility: An emergency/extraordinary situation is one where preparation and planning would not have foreseen the inability to get to a jobsite to complete the on-site inspection. This includes, but is not limited to, flight cancellations, travel restrictions, illness, last-minute notification of inspection window and lack of local accredited verifiers in project location.

Conditioned multi-unit or multi-building projects (multifamily and townhome communities) must have at least one on-site inspection. Verifiers should make every effort to conduct the first inspection in-person.

For multi-unit and multi-building projects, virtual inspection may not be used for more than 30% of the total inspection visits. For continued use of virtual inspection beyond 30% of the total expected visits for the building(s), the Verifier must submit an email request to Home Innovation staff and detail the extenuating circumstances that prevent them from performing the inspection themselves or hiring a local Verifier or Field Rep.

Verifiers should keep records regarding their application of virtual inspection and submit to random desktop audits upon request. Abuse of this protocol may result in verifier probation or, in severe cases, a prohibition on use of the virtual inspection protocol.

Exception – Rural Communities: Rural communities often stand to benefit the most from energy efficiency and green building programs due to their less efficient existing building stock and resource-strained populations.

At the same time, on-site inspections in less populated areas can require extensive travel and overnight stays. This can make the provision of green verification services cost-prohibitive.

To better accommodate NGBS Green Certification activity in rural areas, we allow Verifiers to appeal for the use of the Virtual Inspection Protocol in non-emergency scenarios. Verifiers should contact the NGBS Green team with the following information: (1) explanation of project constraints; (2) confirmation that there are few or no viable green professionals within 150 miles of the project site available to serve the project located; and (3) proposed plan for executing a combination of on-site and virtual inspections, including the expected percentage of site inspections that will be conducted virtually. Approval will be granted on a case-by-case basis.

Notification: Verifier must notify the client in writing that a remote inspection will be done in lieu of an on-site inspection.

On-Site Videographer: The on-site videographer should be generally familiar with construction practices and systems, and specifically familiar with the building(s) seeking certification.

A HERS Rater or Rating Field Inspector (RFI) is an ideal videographer to do the remote inspection; however, the Verifier must still supervise the remote inspection. Alternatively, a HERS Rater or RFI can inspect the building for those practices that an NGBS Green Field Rep. can inspect for if their inspection is accompanied with photo documentation and submitted to the verifier (see below for more details).

In implementing this protocol, a project's Verifier of Record cannot relinquish or transfer their responsibility for confirming a building's compliance with the NGBS. The on-site videographer and any verification professionals serve to collect and share information with the Verifier of Record, who ultimately submits the project to Home Innovation for review.

Insurance Requirements: If the videographer is not an employee of the General Contractor or the builder/developer, the Verifier must ensure that that person is sufficiently insured to meet Home Innovation's insurance requirements for verifiers. As an option, if using a HERS Rater or RFI, the Verifier can add the HERS Rater as a covered party to their professional liability and automobile insurance coverage.

Inspection Options: Confirmation of practices by virtual inspection can be performed remotely by using either online or offline video inspection. Online video inspection must be attempted first. Offline video inspection is an option only when an online video inspection is impossible for reasons, such as lack of connectivity. At this time, we will not allow phone/audio-only remote inspections. We believe there is value in the Verifier being able to visually confirm compliance for the practices.

Live Video Inspection: We prefer live video inspections to recorded inspections, but as discussed below, we realize that connectivity may preclude that option. This inspection process utilizes a live video application, including but not limited to Zoom, Microsoft Teams, or Skype.

The live video stream must include the Verifier and the on-site videographer. Home Innovation may request to participate during the live stream or ask the Verifier to record the remote inspection and share the recorded video file for QA purposes.

Offline Inspection: When there are limitations to an online remote inspection, such as internet/network connection issues, the on-site videographer can capture an offline video recording of the entire inspection. The Verifier would guide the on-site videographer on how the process should be performed in advance of the inspection.

Preparation:

- 1) Ideally, before starting virtual inspection on a multi-unit or multi-building project, at least one in-person inspection is conducted.
- 2) Coordinate with the builder:
 - a. Select an inspection date.
 - b. Identify On-Site Videographer.
 - c. Send the completed project Scoring Tool or custom checklist of items to be verified to the on-site videographer in advance of the inspection.
- 3) Obtain the needed technology.
 - a. *For both parties:*
 - i. Phone or tablet with microphone, necessary file storage, and installed video calling application(s)
 - ii. Access to Dropbox, Google Drive, or other file-sharing service to exchange recorded video files after the call
 - b. *For on-site videographer:*
 - i. NGBS Green Scoring Tool or custom checklist of items to be verified during that visit
- 4) Test device functionality:
 - a. Test the Internet signal strength (for live stream inspections).

- b. Test the battery life.
- c. Test the sound, mic, and video quality.

Inspection Process:

1. Note the date and start time on the verification report (and for the video, if recording).
2. The videographer should confirm his/her name and title.
3. The on-site videographer should take a front elevation photo to send to the Verifier to submit with the verification report.
4. The live video must start from the front elevation of the building.
5. The Verifier should establish that the on-site videographer is at the correct location by having the videographer repeat the project address.
6. If live video, the Verifier will verbally guide the on-site videographer during the entire live video on how the process should be performed. For offline, the videographer would be guided by the NGBS Green Scoring Tool and any notes provided by the Verifier in advance of the inspection.
7. The Verifier and videographer should work through the verification report top-to-bottom.
8. Apart from minor internet connection issues, there shall not be any pausing or stopping of the recording during the live stream. If the video needs to be restarted for any reason the videographer should start again by repeating the project address, stating the date and time, and the location in the building where they are restarting (i.e. 4th floor, Unit 4A).
9. The video must clearly show the details needed for confirmation of all the necessary NGBS practices.
10. All NGBS practices that are typically verified at that inspection stage (i.e., Rough or Final) must be completely confirmed before points can be awarded on the verification report.
11. If there are any compliance issues revealed in the video inspection that cannot be corrected during the remote inspection, the Verifier should immediately send an email to the client notifying them of the issue and recommending corrections as needed.
12. Record the ending time for the inspection.
13. For an offline inspection, once the inspection is completed, the videographer must send to the Verifier the completed and signed verification report, the video file, the elevation photo, and a signed Signature Page. Video files can be transferred to Home Innovation using any commonly-accepted file-sharing platform, including but not limited to Dropbox, Google Drive, and Microsoft OneDrive.
14. The Verifier should note on the summary page that the inspection was conducted via virtual inspection protocol and include the name and title of the on-site videographer.
15. For all offline inspections, the Verifier should retain the video file for a minimum of 3 years and be able to produce the file for Home Innovation if requested during a QA audit.
16. If this is the only (for single-family) or last Rough/Final inspection (for multifamily), the Verifier should email a pdf copy of the verification report to the client and then upload to AXIS. per the **VRG** when complete.

Sampling: Where sampling is being performed per the NGBS Green Alternative Multifamily Verification Protocol, the Verifier should identify the units to be sampled among those available. This will require coordination between the builder and Verifier in advance of the inspection.

During the inspection, the on-site videographer should clearly capture evidence of which units were reviewed.

Inspection Issues: If at any point during the online remote inspection or review of the offline video recording, the Verifier believes that the video quality or another aspect is not satisfactory, the Verifier can either reschedule a live online inspection, conduct an offline remote inspection, or, if able, go on-site and conduct a complete inspection.

3.6 Virtual Audit Protocol

(Created August 21, 2020; Revised May 2021; Revised Nov 2021; Revised Apr 2022, Revised Mar 2023)

Intent: The virtual audit is one method of audit that is used by Home Innovation to assess an accredited NGBS Green Verifier's understanding of technical building practices, as well as program policies and protocols.

Selection & Process: Home Innovation seeks to conduct virtual audits on 50 unique Verifiers each year. Verifier selection is largely random but can be influenced by a Verifier's probation status, performance, and Master Verifier credential.

Verifier audits can be conducted at both single-family homes or multifamily projects. For multifamily buildings that require multiple visits, the virtual audit shall be conducted on just one of the visits. The best available date will be selected by Home Innovation staff and the verifier.

Scheduling: Audits are conducted at either Rough or Final.

A Verifier receives an AXIS notification that identifies that they have been selected for a Virtual Audit and must coordinate with Home Innovation to schedule an audit during their next in-field inspection. The AXIS Scheduling dashboard (located under the 'Tasks' dropdown) will be used to coordinate the audit's date/time, address of the project to be audited, and video communication platform that will be used. A precise time does not need to be identified; when possible, Home Innovation's reviewer will make themselves available for a block of time (e.g., morning or afternoon) to accommodate and be reachable by phone when the Verifier is ready to begin the inspection.

We recognize that there is often a tight (often 24-hour turnaround or less) for inspection scheduling. Our reviewers will also be available and responsive throughout the scheduling process. Verifiers will not receive lower grades based on scheduling issues. Beyond scheduling, the preparation required for a virtual audit is minimal and not unreasonable to accomplish with a tight timeline.

Once a date/time has been established, a Virtual Audit QA Module will be set-up for the selected project.

Prior to the virtual audit, the verifier should upload the NGBS Green Scoring Tool for the selected project and any specific notes about the items that will be reviewed during the inspection to the Virtual Audit QA Module.

Within five business days following the virtual audit, Home Innovation's Reviewer and the verifier will debrief the virtual audit and discuss feedback and recommendations by phone or video conference.

Time Commitment: Virtual audits will be limited to 2 hours to limit time investment and battery life. For multifamily, a portion of units available for inspection will be pre-selected for audit.

Team Verification: While we recognize that, in many instances, multiple NGBS Green Verifiers will work cooperatively to provide verification services, we do not allow the Virtual Audit request to be transferred to another individual on the verification team.

The verifier observed during the virtual audit does not need to be the Verifier of Record for the project.

On-site Videographer (Optional): An on-site videographer might assist with capturing live video during the virtual audit. The videographer acts as a helper but does not participate in verifying NGBS practices. Please inform Home Innovation prior to the virtual audit if an on-site videographer will be present and include the name and job title on the Signature Page.

Insurance Requirements: If the videographer is not an employee of the General Contractor or the builder/developer, the Verifier must ensure that that person is sufficiently insured to meet Home Innovation's insurance requirements for verifiers. As an option, if using a HERS Rater or RFI, the Verifier can add the HERS Rater as a covered party to their professional liability and automobile insurance coverage.

Auditing Options: Confirmation of practices during the virtual audit can be performed remotely by using either online or offline method. Online video must be attempted first. The offline video method is an option only when the online video method is impossible for reasons, such as lack of connectivity.

Online Live Video Audit: This inspection process utilizes a live video application, including but not limited to Zoom, FaceTime, Google Meet, Microsoft Teams, or Skype. The live video stream must include the Verifier and the on-site videographer (if any).

Offline Audit: When there are limitations to a live video audit such as internet/network connection issues, the Verifier can capture an offline video recording of the entire inspection and submit the video files to Home Innovation within 2 business days. If offline video quality is deemed too poor for a proper evaluation, Home Innovation may schedule another audit of another upcoming inspection by the same verifier.

Preparation:

- 1) Coordinate with Home Innovation Reviewer:
 - a. Confirm date and time.
 - b. Identify video call platform that will be used.
 - c. Identify the On-Site Videographer if any.
 - d. Upload the completed project Scoring Tool and/or other inspection checklist to Home Innovation and the on-site videographer (if any) to AXIS in advance of the Virtual Audit. If using a custom mobile application, consider sending screenshots of the verification screen(s).
 - e. If multifamily, identify which units are expected to be available for inspection. Home Innovation will respond to requests for a selected number of units (e.g., 5 units total units across floors 3 and 6) that will be audited.
 - f. As a best practice, we recommend informing the Site Superintendent that video will be recorded during the Audit.
- 2) Obtain the needed technology.
 - a. Phone or tablet with microphone, necessary file storage, and installed video calling application(s).
 - b. Access to Dropbox, Google Drive, or other file-sharing service to exchange recorded video files after the call.
 - c. All Testing tools and equipment needed to verify compliance with NGBS Practices.
- 3) Test device functionality on your own:
 - a. Test the Internet signal strength (for live stream inspections).
 - b. Test the battery life.
 - c. Test the sound, mic, and video quality.

Inspection Process:

There are two main approaches for the virtual audit:

- (1) *“Walk-Back”* – verifier sets up all testing equipment and conducts initial testing and visual inspection prior to launching the video call with Home Innovation. On the call, the verifier will show and describe their approach for setting up the dwelling unit and equipment and then demonstrate testing and visual inspection.
- (2) *Live* – all inspection steps, including set-up equipment, are conducted live during the video call with Home Innovation.

Regardless of approach, the following steps must be addressed:

1. Connect with Home Innovation’s reviewer on the specified video chat platform.
2. The Verifier should establish that he/she is at the correct location by repeating the project address and identifying his/her name, date, and time. The Verifier should take a selfie with the building in the background and then pan to show the front elevation and surrounding lot.
3. The Verifier and videographer (if any) should work through the verification report, addressing all items scheduled for inspection during that visit. All NGBS practices that are typically verified must be completely confirmed before points can be awarded on the verification report.
4. Apart from minor internet connection issues, there shall not be any pausing or stopping of the recording during the live stream. If the video needs to be restarted for any reason the Verifier should start again by repeating the project address, stating the date and time, and the location in the building where they are restarting (i.e., 4th floor, Unit 4A).
5. The video must clearly show the details needed for confirmation of all the necessary NGBS practices. The Verifier should narrate the inspection, indicating their location (e.g., unit number, floor number, room within unit, etc.) and demonstrating their understanding of the practices and expected verification steps.
6. If there are any compliance issues revealed in the video inspection that cannot be corrected during the remote inspection, the Verifier should immediately send an email to the client notifying them of the issue and recommending corrections as needed.
7. For an offline inspection, once the inspection is completed, the Verifier must upload the completed and signed verification report, the video file, and the front elevation photo to AXIS. *(If live video inspection, review materials can be held and uploaded during normal sequence).*

Assessing Virtual Audit Performance

The credibility and integrity of the NGBS Green program relies on the performance of Home Innovation’s independent agents in the field. NGBS Green Verifiers are expected to fully comply with the **Verifier’s Resource Guide (VRG)** regarding inspection of projects seeking certification and completion of verification reports. NGBS Green Verifiers are also evaluated for their investment in competence and accuracy during the inspection.

Each virtual audit process provides the Home Innovation review team a snapshot of a verifier’s:

- Understanding of the NGBS practices and compliance requirements
- Adherence to the verification protocol and certification process outlined in the **Verifier’s Resource Guide (VRG)**
- Attention to detail

Grading

Home Innovation reviewers assess the virtual audit according to the rubric below.

A verifier can earn an A, B, C, D, or F grade for a given Audit based on the preparation process, inspection process, testing, visual inspection process, and knowledge of practice. Projects seeking higher levels of certification (i.e., Gold or Emerald) will be reviewed and graded with greater stringency.

Verifiers are expected to interpret, discuss, and know the NGBS. A demonstrated misunderstanding of the NGBS practices during the virtual audit will result in lower grades.

If Home Innovation staff observes a significant departure from program policies during the audit, such as inappropriate application of sampling, the Verifier may be placed on immediate probation, regardless of the Verifier's overall performance.

Verifier earning a C, D, or F grade would be deemed unsatisfactory and would be audited again during the next inspection. This could be the next inspection of the same building/project or another project, depending on scheduling.

Verifier Company Admins can view grades for all accredited verifiers employed by their organization.

Virtual Audit Grading System & Rubric

CATEGORY	A	B	C	D	F
Preparation Process <i>Verifier is prepared for the virtual audit using the guidelines above.</i>	No deviations from protocol		1-2 deviations from protocol		3+ deviations from protocol
Adherence to Virtual Audit Protocol <i>Verifier conducts the audit as outlined above.</i>	No deviations from protocol		1-2 deviations from protocol		3+ deviations from protocol
Testing <i>Verifier performs testing competently and according to the EE Testing Policy. Preparation, set-up, procedure, and analysis are evaluated. Variance in site-collected data should be acceptable per test standards.</i>	0 errors that impact Test Results		1-2 deviations from protocol		3+ errors that impact test results
Verification Competency <i>Verifier demonstrates complete understanding of the NGBS practices, verification requirements, and program policies.</i> <i>*A demonstrated failure to verify mandatory practice(s) can result in a lower grade in this category.</i>	Excellent		Average*		Below Average*

Each grading category is weighted as described below:

VIRTUAL AUDIT WEIGHT: TESTING CONDUCTED	
Category	Weight
Preparation Process	15%
Adherence to Virtual Audit Protocol	15%
Testing	30%
Verification Competency	40%
Scoring Tool	15%

In a scenario where the Verifier is not qualified to perform the necessary testing or is not testing based on selected compliance path, the grading categories would be weighted as described below:

VIRTUAL AUDIT WEIGHT: NO TESTING	
Category	Weight
Preparation Process	15%
Adherence to Virtual Audit Protocol	15%
Verification Competency	70%

3.7 Verifier Candidate Mentoring Policy

(Effective August 2017, Rewritten 01/11/2024)

Home Innovation requires NGBS Green Verifier Candidates to have previous experience and/or training in residential construction, inspections, and green building before accessing the Verifier training. Specific requirements are detailed in the [NGBS Green Verifier Candidates' Handbook](#).

Some Verifier companies have robust internal training programs where candidates can train alongside experienced Accredited Verifiers. In this case, specific onsite NGBS Green verification training with an experienced Verifier can be as good, if not better, than non-NGBS specific experience and training.

Home Innovation will allow a Verifier Candidate to access the NGBS Green accreditation training without meeting the pre-requisites, provided that the Candidate is employed by a company with at least two Accredited NGBS Green Verifiers in good standing, and the Verifier Company has a Home Innovation **approved** internal training protocol specific to NGBS Green verification that includes a field training component. At least one of the Accredited Verifiers at the company must have been accredited for at least 2 years and been actively verifying projects during that time.

How to Apply

Verifier companies that wish to take advantage of this program should submit a written request to gbverifications@homeinnovation.com. The request should include a copy of the internal training that meets the minimum requirements below. If it is not apparent how the internal training meets Home Innovation's requirements, please provide an explanation in the request. The request must explain how Home Innovation will know a Verifier Candidate has successfully completed the internal training (i.e., certificate or email) and who, at the Verifier Company, will submit proof of completion. (The Verifier Candidate may not submit proof of completing the internal training.) Home Innovation will not accredit any Verifier Candidate without meeting these requirements.

Verifier Mentoring Program

Verifier organizations with an approved mentoring plan may apply to have Verifier Candidates access the NGBS Green Verifier training if that individual is concurrently in their internal training program. Verifier Candidates can access NGBS Green verification training as they complete the internal training and take the Verifier accreditation test. Home Innovation will withhold the Verifier candidate's accreditation until we receive documentation that the internal training is successfully completed.

Internal Verification Training

At a minimum, the company's internal training must include an opportunity for the Candidate to observe an Accredited Verifier performing a variety of Rough and Final inspections in-person. During the onsite observations, the supervising Verifier should provide specific verification instructions to the Candidate. During the mentoring period, the Verifier Candidate must observe verification inspections that reflect the typical inspections performed by the Company's Verifiers. For example, if a Verifier Company performs inspections on single-family homes, garden style apartments, and mid-rise multifamily buildings, the Verifier Candidate should have an opportunity to observe an equally diverse number of inspections. Verifier candidates that work for an organization solely focused on single-family homes will base their training and observation on such homes; however, it is highly desirable, if possible, for the Verifier candidate to be exposed to a variety of project types and building science issues.

During the training and mentoring period, the Verifier Candidate must not perform an NGBS Green verification inspection solo. Further, while the Verifier Candidate may assist in the preparation of the documentation and inspection report, an Accredited Verifier must review and sign the report submission as the Verifier of Record. The Verifier of Record is solely responsible for complying with NGBS Green process and policy, responding to any questions or corrections from the Home Innovation reviewer, managing the process and documentation collection should the project be selected for a Desktop Audit, and being responsible for any errors and/or omissions on the

verification package submission. The verification report submission will be graded, and the corresponding grade accrues to the Verifier of Record.

When the Verifier candidate has successfully completed the internal training, the Verifier Company must submit to Home Innovation written documentation that internal training is complete, and the Verifier candidate has passed the internal assessment to confirm competency. No specific documentation for completion is required, but at a minimum it should indicate the name of the Verifier candidate and the date s/he completed the training and competency assessment.

Minimum Internal Training Requirements

- Opportunity to register a project under supervision of Accredited Verifier (see above)
- At least 6 opportunities to review plans for buildings seeking NGBS Green certification score the building using the NGBS Green Scoring Tool
- In-field mentoring on preparation of both Rough and Final reports and verification instructions
- Opportunity to complete Rough and Final verification reports under supervision of Accredited Verifier and to be submitted by Accredited Verifier (see above)
- Assist with documentation collection and review
- In-field training and/or classroom training on at least two of the following subjects:
 - Sustainable land development practices
 - Resource efficient construction
 - Indoor air quality
 - Water efficient practices

Mentoring Plan Validity Period

A company's mentoring plan should be resubmitted to Home Innovation for approval if it is substantively changed. In addition, Home Innovation reserves the right to require a periodic review of the plan to ensure that it remains in compliance with our requirements.

Supplemental Green Building Training

Candidates may be experts in energy efficiency but have less green building expertise. If relevant, the Verifier training should address this either through internal training or supplemental external training. Further, field training should focus on myriad practices to ensure the Verifier candidate understands the practice intent, how to determine successful implementation, and proper NGBS Green verification.

Probationary Period

Verifiers that attain accreditation via the mentoring process will be placed on a 1-year probation like all NGBS Green Accredited Verifiers. (See Policy 3.3 Verifier Performance) The probation period may be extended by Home Innovation should the Verifier exhibit performance issues or not remain in good standing as discussed in the VRG.

3.8 Stay Informed

(Effective June 2011; Revised Apr 2016)

NGBS Green Verifiers must keep Home Innovation informed of their current contact information including primary email, phone number, and mailing address. Verifiers must also ensure their email service will accept email from the @homeinnovation.com domain. Home Innovation's primary means of communicating critical, often time-sensitive, program news, developments, and changes to verifiers is the monthly *Verifier Update (VU)* e-newsletter, which is sent to the primary email address of every accredited Verifier. Each newsletter is archived in Resources/NGBS Verifier Central in AXIS. Failure to keep up with these monthly communications may result in

verifiers missing key program deadlines, thereby jeopardizing the successful certification of their clients' projects. In short, Home Innovation expects verifiers to read the VU.

3.9 Anti-Trust Statement

(Effective November 2014)

Home Innovation's policy is to comply fully with all laws, including federal and state antitrust laws. Compliance with the letter and spirit of the antitrust laws is an important goal of Home Innovation Labs and is essential to maintaining our corporate reputation for the highest standards of ethical conduct. NGBS Green Verifiers must fully support this antitrust mandate, as it is critical to Home Innovation Labs' continued success not only for the NGBS Green certification program but for all our businesses as a whole.

Verifiers who are found to be working in cooperation to allocate or divide service markets or otherwise discourage competition will be terminated. Verifiers terminated for this reason may not reapply for a period of one year. Upon re-application, acceptance is at the discretion of Home Innovation.

3.10 Architects as NGBS Green Verifiers

(Effective April 11, 2014; Revised Feb 2016; Revised Mar 2019)

Home Innovation recognizes that architects may see value in obtaining NGBS Green Verifier accreditation and guiding existing clients through the certification process.

To ensure that verifiers serve as independent, third-party inspectors for NGBS compliance, verifiers cannot be engaged to provide construction contract administration. While AIA Document A201™-2007 **General Conditions of the Contract for Construction** indicates that architects do not have the "authority to act on behalf of the Owner" nor "have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures," Home Innovation recognizes that architects involved in construction phase services have a greater professional and financial stake in the project's construction to the NGBS and may not provide a fair, independent assessment of the home/building features.

Architects who are retained to provide design services, but do not provide construction phase services, are permitted to serve as Verifiers on projects they design. Conducting the Rough and Final inspections of a project as the architect is not considered construction oversight; however, a higher level of involvement in the construction process beyond verification of the NGBS practices would constitute oversight and a conflict of interest. Architects who provide both design and construction phase services are not permitted to verify those projects. Similarly, architects who are employed by a design-build firm are ineligible to verify projects that are built by the firm.

A verifier employed by an architectural firm may verify a project that another employee in the firm is involved with the construction oversight provided the verifier does not report to the staff managing the construction process.

Verifiers are expected to disclose any potential conflicts of interest, *or the appearance of a conflict of interest*, to clients before signing a contract to provide verification services. If the potential conflict, or appearance of a conflict of interest, is not known at the time a verification services contract is signed, the verifier is expected to notify the client as soon as the issue arises.

Verifiers must disclose services provided by their company on the NGBS Green Verification Report, including design services. Verifiers must provide thorough and accurate information for every project. In a situation where the verifier's company is also providing construction oversight, the details of this arrangement need to be clearly disclosed. Failure to properly disclose services provided to a client may result in a suspension of verifier accreditation. If a Verifier is ever presented with a situation where it is unclear if the situation would be acceptable to Home Innovation, the Verifier should seek prior approval from Home Innovation before committing to provide and/or providing verification services.

3.11 Cooperating with Competing Programs

(Effective October 15, 2013)

Home Innovation copyrighted and/or trademarked materials may not be used in connection with a local program or requirement unless the project is seeking NGBS Green certification from Home Innovation.

A growing number of state and local jurisdictions are requiring NGBS compliance. Some jurisdictions accept Home Innovation NGBS Green certification to demonstrate this compliance. Others do not mandate certification but instead accept Home Innovation Scoring Tools as compliance documentation. These jurisdictions may allow a builder to self-score a project on the NGBS Green Scoring Tool. Alternatively, the jurisdiction may require a Home Innovation-accredited NGBS Green Verifier, or even a Certified Green Professional (CGP), to verify compliance.

Several HBAs also offer their own green building certification programs, either based on the NGBS. Some employ their own set of verifiers/raters; others do not. Like the jurisdictions noted above, some HBAs may even specify use of the NGBS Green Scoring Tool to demonstrate compliance with their programs.

Home Innovation's tools and resources developed for NGBS Green certification are copyright protected for the sole use of those seeking certification through Home Innovation Labs. Verifiers are prohibited from using these materials for any other purpose. Verifiers are also prohibited from providing verification or certification services to clients using the NGBS if the project is not seeking Home Innovation certification. Verifiers are expected to notify Home Innovation of any instance where Home Innovation materials are being used improperly.

Services that violate the NGBS Green Verifier agreement include, but are not limited to:

- Providing verification services to a builder to comply with the NGBS for local code compliance, when that project is not seeking Home Innovation Certification
- Submitting Home Innovation NGBS Green materials of any kind to a government agency for a project that will not be certified by Home Innovation
- Serving as a verifier for another NGBS-based green building certification program
- Sharing Home Innovation verification materials (e.g., **Verifier's Resource Guide (VRG)**, agreement forms, study materials, etc.)

Verifiers in violation of their agreements with Home Innovation will be terminated immediately.

3.12 Service Disclosure

(Effective October 2008, Revised July 2023)

Any services provided to a client by an NGBS Green Verifier, aside from verification services, must be disclosed by including a note in any relevant inspection report. Services requiring disclosure include, but are not limited to: consulting, architectural services, design support, HERS or other energy ratings, and serving as a verifier/rater for another non-NGBS-based green program (e.g., ENERGY STAR) on that building. Disclosure of these services is critical to ensure Verifiers are not involved in potentially conflicting activities.

Verifiers must disclose potential conflicts of interest, or the appearance of a conflict of interest, to clients before signing a contract to provide verification services. If the potential conflict, or appearance of a conflict of interest, is not known at the time a verification services contract is signed, the verifier is expected to notify the client as soon as the issue arises.

Verifiers must disclose services provided by their company in the NGBS Green Verification Report. Verifiers must provide thorough and accurate information for every project. Failure to properly disclose services provided to a client may result in a suspension of verifier accreditation. If a Verifier is ever presented with a situation where it is

unclear if the situation would be acceptable to Home Innovation, the Verifier should seek prior approval from Home Innovation before committing to provide and/or providing verification services.

Please note, this process does not absolve a Verifier from the conflicts of interest prohibitions under the Verifier Termination Policy.

3.13 Insurance

(Revised February 2013)

NGBS Green Verifiers are required to maintain minimum insurance coverage (see chart below) for their accreditation. Verifiers are required to submit evidence of their insurance coverage to Home Innovation annually. Failure to demonstrate insurance coverage will result in termination.

“Home Innovation Research Labs” must be listed as the additionally insured.

Minimum required coverage is as follows:

General Liability	\$1,000,000
Automobile Liability	\$500,000
Workers Compensation	As required by law
Employer’s Liability (typically part of Workers Compensation)	\$500,000
Professional Liability	\$500,000
Covers professional for negligence, errors, and omissions that injure clients.	

3.14 Use of Materials

(Revised September 2013)

Copyright Protection of NGBS Green Scoring Documents

The **Verifier’s Resource Guide (VRG)** and the NGBS Green Scoring Tool are protected by United States copyright law. Home Innovation authorizes the use of these materials only to individuals participating in Home Innovation’s NGBS Green certification program. No part of these materials may be reproduced in any form or used without Home Innovation’s prior written consent.

The NGBS Green Scoring Tool spreadsheet has been locked/protected to prevent changes that would affect the logic of the tool. NGBS Green Verifiers should not attempt to alter the format or logic of the spreadsheet. The NGBS Green Scoring Tool is a copyrighted work, and the embedded code is proprietary property of Home Innovation. Unprotecting this document is a violation of copyright law that may result in termination and/or legal action, as outlined in Paragraph 4.6 of the Verifier Agreement.

Proper Program References

(Revised February 2013)

NGBS Green Verifiers are expected to read and adhere to NGBS Green Partner Brand & Marketing Style Guide, downloadable at www.homeinnovation.com/marketgreencertified.

Referring to the NGBS Green certification program as “NAHB Green” or similar is technically inaccurate and misrepresents the program, as the certification program is managed by Home Innovation Research Labs, not the National Association of Home Builders (NAHB).

“Home Innovation Labs” and “Home Innovation” are acceptable alternative references for Home Innovation Research Labs. The company is not identified by an acronym.

