ENERGY STAR Multifamily New Construction
Quality Assurance Checklist (ERI Path), v1 / 1.1 / OR-WA 1.2 (Rev. 02)

An ENERGY STAR Quality Assurance Checklist shall be completed during each quality assurance file review and field review (QA review) of buildings being certified through the ENERGY STAR Multifamily New Construction program's ERI Path in accordance with the policies and procedures of the Home Certification Organization (HCO) [1]. This revision of the QA checklist is mandatory for buildings certified under Version 1 / 1.1 / OR-WA 1.2, Revision 02. QA reviews for buildings certified under Revision 01 may continue to use the prior revision of this document titled "2020 Rater Quality Assurance Checklist", available upon request by email at energystarhomes@energystar.gov. Review complete instructions on page 6 below.

ENERGY STAR Quality Assurance Checklist

Project Name: _____ Number of Units: _____ Permit Date: _____

Building Address: _____ City: _____ State: _____

QA Review Review Type: ☐ File ☐ Field QA Reviewer: _____ Date of Review: _____

Unit Number: _____ Common Spaces: _____

Rater Being QA'd: _____ Status of Project: ☐ Pre-drywall ☐ Final construction or completed

Original Rating Rater Company Name: _____ ☐ Confirmed as ENERGY STAR Partner

Pre-Drywall Inspection: Rater Name: _____ Rater ID #: _____ Date: _____ ☐ MFNC Training Complete

Final Inspection: Rater Name: _____ Rater ID #: _____ Date: _____ ☐ MFNC Training Complete

Action Items / Summary of QA	**Yes**	**No**	**N/A**
If any Item marked "No" or "Not Verified," an action/explanation summary document shall be attached	☐	-	☐
Documentation Collection – Collect these items as part of the QA data file	**Yes**	**No**	**N/A**
A) Energy Rating File collected	☐	☐	☐
B) Documentation collected that demonstrates that all dwelling units in the multifamily building were registered and certified to the same version.	☐	☐	☐
C) National Rater Design Review Checklist collected, with no Items left blank.	☐	☐	-
D) Documentation collected that builder or developer had an ENERGY STAR partnership agreement at the time of certification. If documentation of active partnership cannot be verified, contact energystarhomes@energystar.gov.	☐	☐	-
If Track A – HVAC Grading by Rater was pursued:			
E.a) HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, with the ENERGY STAR MFNC supplement, collected, with no Items left blank.	☐	☐	☐
F.a) ANSI / RESNET / ACCA Std. 310 Rater Design Review Checklist collected, completed for applicable housing type and with all items marked "Rater Verified".	☐	☐	☐
If Track B – HVAC Testing by FT Agent was pursued:			
E.b) ENERGY STAR National HVAC Design Report collected, with no Items left blank.	☐	☐	☐
G) National Rater Field Checklist collected, with no Items left blank or marked Must Correct.	☐	☐	-
List of any exemptions or alternatives used by the Rater.	☐	☐	☐
Per 1.2, 3.5, and/or 3.6, documentation collected on alternative UA calculations, if used for compliance.	☐	☐	☐
Per 5b.1, written approval from designer collected, if installed models do not match Design Report.	☐	☐	☐
Per 7.3 and 8.3, documentation collected of the measured ventilation airflows in common spaces.	☐	☐	☐
Per 12.2 and 12.3, lighting power density calculations collected for common spaces and shared garages. [2]	☐	☐	☐
Per 14.1, for buildings 50,000 ft and larger, documentation collected confirming the strategy used to enable the collection of monthly or annual building-level energy consumption data. [2]	☐	☐	☐
Rater Name, Inspection Dates are recorded.	☐	☐	-
If any Builder Verified Items are used, Builder Employee, Builder Inspection Date and Builder Initials are recorded.	☐	☐	☐
If any LP Verified Items are used, Licensed Professional, LP Inspection Date and LP Initials are recorded.	☐	☐	☐
H) National HVAC Functional Testing Checklist(s) collected for common space systems and Dwelling Unit systems using Track B – HVAC Testing by FT Agent, with no Items left blank and with all HVAC systems in the building / project fully documented. Exception: Where credentialed HVAC Contractor(s) are completing the National HVAC Functional Testing Checklist, the checklist is not required to be collected. [2]	☐	☐	☐
I) Documentation collected that Functional Testing Agent(s) held credential required to complete the National HVAC Functional Testing Checklist(s) and were listed on the appropriate online directory at the time of certification.	☐	☐	-

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Energy Rating File – File is consistent with program requirements, Rater's documentation, and field observations.	Yes	No	N/A
Energy Rating file passes the Home Certification Organization's (HCO's) quality assurance review checklist. [2]	☐	☐	-
ERI of the dwelling unit meets or exceeds the ENERGY STAR ERI Target for the program version applicable at the time of certification.	☐	☐	-
Energy Rating file is consistent with the National Rater Design Review Checklist	☐	☐	-
2.1.2 Modeled dwelling unit fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. [2]	☐	☐	-
3.1.2 Modeled dwelling unit ceiling, wall, floor, and slab insulation levels meet or exceed values from the "Group R" column in the 2009 IECC Commercial chapter. [2]	☐	☐	-
Energy Rating file is consistent with the National Rater Field Checklist	☐	☐	-
1.3 Modeled insulation achieves Grade I installation per ANSI / RESNET / ICC Std. 301. [2]	☐	☐	-
3.1, 3.2 & 3.3 Modeled attic insulation meets minimum R-value at perimeter, platforms and attic covers. [2]	☐	☐	-
3.4 For slabs on grade in CZ 4-8, slab edge modeled with ≥ R-5 insulation at depth specified by the 2009 IECC. [2]	☐	☐	☐
3.7 Modeled above grade walls are consistent with documented thermal bridging strategy (3.7.1, 3.7.2 or 3.7.3). [2]	☐	☐	-
6.3 Modeled supply and return ducts in unconditioned space are insulated to R-6. [2]	☐	☐	☐
6.4 & 6.5 Modeled duct leakage is consistent with total leakage and, in townhouses only, leakage to outdoors limits. [2]	☐	☐	☐
7.1 Modeled ventilation rate is within ± 15 CFM or ± 15% of dwelling unit design value (2.7), and meets or exceeds rates required by ASHRAE 62.2-2010. [2]	☐	☐	-
National Rater Design Review Checklist	**Yes**	**No**	**N/A**
2.2.1 Rater documentation that installed common space fenestration meets or exceeds ENERGY STAR MF Reference Design Req'ts. [2]	☐	☐	☐
3.2.1 Rater documentation that installed common space ceiling, wall, floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF Reference Design requirements. [2]	☐	☐	☐
If Track A – HVAC Grading by Rater was pursued:			
4a.4 Total occupant gains do not exceed 645 Btuh per occupant. [2]	☐	☐	☐
4a.5 Non-occupant internal gains are less than 3,600 Btuh.	☐	☐	☐
4a.6 Cooling sizing % is within the cooling sizing limit selected by HVAC designer.	☐	☐	☐
If Track B – HVAC Testing by FT Agent was pursued:			
4b.2 National HVAC Design Report(s) reviewed for the following parameters (National MFNC HVAC Design Report Item # indicated in parenthesis):	☐	☐	☐
4b.2.2 Cooling season and heating season outdoor design temperatures used in loads (3.4) are within the limits defined for the State and County where the building will be built, or the designer has provided an allowance from EPA to use alternative values. All limits are published at www.energystar.gov/hvacdesigntemps. Note that revised (i.e., 2019 Edition) limits are required to be used for all HVAC Design Reports generated after 07/01/2020. [2]	☐	☐	☐
4b.2.3 Number of occupants used in loads (3.6) is within ± 2 of the dwelling unit being reviewed and total occupant gains (3.7) do not exceed 645 Btuh per occupant. [2]	☐	☐	☐
4b.2.4 Conditioned floor area used in loads (3.8) is between 100 sq. ft. smaller and 300 sq. ft. larger than the dwelling unit being reviewed. [2]	☐	☐	☐
4b.2.5 Window area used in loads (3.9) is between 15 sq. ft. smaller and 60 sq. ft. larger than the dwelling unit being reviewed, or for dwelling units to be certified with > 500 sq. ft. of window area, between 3% smaller and 12% larger. [2]	☐	☐	☐
4b.2.6 Predominant window SHGC used in loads (3.10) is within 0.1 of rater-documented predominant value installed in the dwelling unit being reviewed. [2]	☐	☐	☐
4b.2.7 Mechanical ventilation used in loads (3.12) is the same as the ventilation design (2.7) for the given unit plan.	☐	☐	☐
4b.2.8 Non-occupant internal gains (3.13) are less than 3,600 Btuh.	☐	☐	☐
4b.2.9 Sensible & total heat gain are documented (3.15, 3.17) for the orientation of the dwelling unit being reviewed. [2]	☐	☐	☐
4b.2.10 Cooling sizing % (4.18) is within the cooling sizing limit (4.19) selected by the HVAC designer.	☐	☐	☐

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National Rater Field Checklist – Mandatory during Field Review; optional during File Review	**Yes**	**No**	**Not Verified**	**N/A**
1. High-Performance Fenestration & Insulation				
1.2 Accessible insulation in dwelling units meets or exceeds levels specified in Item 3.1 of the Rater Design Review Checklist. Where no examples are accessible, rater documentation of installed insulation is reviewed.				
3.1.2 Installed ceiling and floor insulation levels meet or exceed values from the "Group R" column in the 2009 IECC Commercial chapter.	☐	☐	☐	☐
1.2 Accessible insulation in common spaces meets or exceeds levels specified in Item 3.2 of the Rater Design Review Checklist. Where no examples are accessible, rater documentation of installed insulation is reviewed. [4]				
3.2.1 Installed ceiling and floor insulation levels meet or exceed ENERGY STAR MF Reference Design requirements.	☐	☐	☐	☐
1.3 All visible insulation achieves Grade I install. per ANSI / RESNET / ICC Std. 301. [2]	☐	☐	☐	☐
1.5 Heated plenums in unconditioned space or ambient conditions meet the following requirements: [2]				
1.5.1 Sides of heated plenum are an air barrier and insulated to ≥ R-3ci in CZ 1-4; ≥ R-5ci in CZ 5-6; ≥ R-7.5ci in CZ 7; ≥ R-9.5ci in CZ 8, AND;	☐	☐	☐	☐
1.5.2 Insulation at top of plenum meets or exceeds the R-value for mass floors from the "All Other" column of Table 502.2(1) of 2009 IECC, AND;	☐	☐	☐	☐
1.5.3 Bottom of heated plenum has at least R-13 insulation. [2]	☐	☐	☐	☐
1.6 Garages with space heating meet the following requirements: [2]				
1.6.1 Insulation on above grade walls and walls on the first story below grade ≥ R-5ci in CZ 5-6; ≥ R-7.5ci in CZ 7; ≥ R-9.5ci in CZ 8, **AND;**	☐	☐	☐	☐
1.6.2 Ceiling insulation meets or exceeds the R-value for mass floors from the "All Other" column of Table 502.2(1) of 2009 IECC.	☐	☐	☐	☐
3. Reduced Thermal Bridging				
The following items must be verified in the dwelling unit being reviewed and 50% of common spaces where the condition is present:				
3.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below and is ≥ R-21 in CZ 1-5; ≥ R-30 in CZ 6-8. [2]	☐	☐	☐	☐
3.2 For insulated ceilings with attic space above, attic access panels and drop-down stairs insulated ≥ R-10 or equipped with durable ≥ R-10 cover. [2]	☐	☐	☐	☐
3.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) ≥ R-21 in CZ 1-5; ≥ R-30 in CZ 6-8.	☐	☐	☐	☐
4. Air Sealing				
The following items must be verified in the dwelling unit being reviewed and 50% of common spaces where the condition is present, to reduce air leakage to exterior, adjacent buildings, or unconditioned spaces:				
4.1 Visible ducts, flues, shafts, plumbing, piping, wiring, exhaust fans, & other penetrations to unconditioned space sealed, with blocking / flashing as needed.	☐	☐	☐	☐
4.2 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and gasketed.	☐	☐	☐	☐
4.7 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with doorsweep and weatherstripping or equivalent gasket.	☐	☐	☐	☐
4.8 Attic access panels, roof hatches and drop-down stairs are gasketed (i.e., not caulked) or equipped with durable covers that are gasketed. [2]	☐	☐	☐	☐
The following items must be additionally verified in the dwelling unit being reviewed:				
4.9 Doors serving as a unit entrance from a corridor/stairwell made substantially air-tight with doorsweep and weatherstripping or equivalent gasket.	☐	☐	☐	☐
4.10 Measured compartmentalization is no greater than 0.30 CFM50 per square feet of dwelling unit enclosure area, following procedures in ANSI / RESNET / ICC Std. 380. [2]	☐	☐	☐	☐
4.10.1 For dwelling units with forced air distribution systems without ducted returns and located in a closet adjacent to unconditioned space, the measured pressure difference between the space containing the air handler and the conditioned space during the compartmentalization test is no greater than 5 Pa. [2]	☐	☐	☐	☐

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5. Heating & Cooling Equipment – Complete Track A – HVAC Grading or Track B – HVAC Testing by FT Agent		**Yes**	**No**	**Not Verified**	**N/A**
Track A	5a.1 Blower fan volumetric airflow is Grade I or II per ANSI / RESNET / ACCA Std. 310.	☐	☐	☐	☐
	5a.2 Blower fan watt draw is Grade I or II per ANSI / RESNET / ACCA Std. 310.	☐	☐	☐	☐
	5a.3 Refrigerant charge is Grade I per ANSI / RESNET / ACCA Std. 310. [2]	☐	☐	☐	☐
Track B	5b.1 HVAC manufacturer & model number on installed equipment matches either of the following (check box): [2] ☐ National HVAC Design Report (4.6-4.9 & 4.25-4.26) ☐ Written approval received from designer.	☐	☐	☐	-
5.5 Heating and cooling eqpt. serving common spaces, but not dwelling units, meet the efficiency levels in the Exhibit X. [2]		☐	☐	☐	☐
Equipment Controls					
5.8 All heating and cooling systems serving the dwelling unit have thermostatic controls within the dwelling unit which are not located on exterior walls.		☐	☐	☐	☐
5.9 Stair and elevator shaft vents equipped with motorized dampers that are capable of being automatically closed during normal building operation and are interlocked to open as required by fire and smoke detection systems. Dampers are verified to be closed at the time of inspection.		☐	☐	☐	☐
5.10 Freeze protection systems, such as heat tracing of piping and heat exchangers, including self-regulating heat tracing, and garage / plenum heaters include automatic controls that are verified to shut off the systems when pipe wall or garage / plenum temperatures are above 40°F.		☐	☐	☐	☐
5.10.1 Where heat tracing is installed for freeze-protection, controls must be based on pipe wall temperature and a minimum of R-3 pipe insulation is also required.		☐	☐	☐	☐
5.11 Snow- and ice-melting systems include automatic controls that are verified to shut off the systems when the pavement temperature is above 50°F and no precipitation is falling, and an automatic or manual control is installed that is verified to shut off system when the outdoor temperature is above 40°F, so that the potential for snow or ice accumulation is negligible.		☐	☐	☐	☐
Hydronic Distribution					
5.12 For hydronic distribution systems, all terminal heating and cooling distribution equipment are separated from the riser or distribution loop by a control valve or terminal distribution pump, so that heated or cooled fluid is not delivered to the dwelling unit distribution equipment when there is no call from the thermostat.		☐	☐	☐	☐
5.13 In the dwelling unit being reviewed, terminal units in hydronic distribution systems are equipped with pressure independent balancing valves or pressure independent control valves.		☐	☐	☐	☐
5.15 For circulating pumps serving hydronic htg. or clg. systems with 3-phase motors, 1 HP or larger, motors meet or exceed efficiency standards for NEMA Premium™ motors. If 5 HP or larger, also installed with VFDs. [2]		☐	☐	☐	☐
6. Duct Quality Installation					
6.1 In the dwelling unit being reviewed, ductwork installed without kinks, sharp bends, compressions, or excessive coiled flexible ductwork. [2]		☐	☐	☐	☐
6.2 Bedrooms with a design supply airflow ≥ 150 CFM (per Item 5.2 on the National HVAC Design Report) pressure-balanced (e.g., using transfer grilles, jump ducts, dedicated return ducts, undercut doors) to achieve a measured pressure differential ≥ -5 Pa and ≤ +5 Pa with respect to the main body of the dwelling unit when all air handlers are operating. [2]		☐	☐	☐	☐
6.3 In the dwelling unit being reviewed, all visible supply and return ducts in unconditioned space, including connections to trunk ducts, are insulated to ≥ R-6. [2]		☐	☐	☐	☐
6.4 Measured total duct leakage in dwelling unit being reviewed meets one of the following two options: [2]					
6.4.1 Rough-in: Tested per allowances below, with the air handler & all ducts, building cavities used as ducts, & duct boots installed. In addition, verified all duct boots sealed to finished surface, at final. [2] No ducted returns: [2] The greater of ≤ 3 CFM25 per 100 sq. ft. of CFA or ≤ 30 CFM. Additionally, the measured pressure difference between the space containing the air handler and the conditioned space, with the air handler running at high speed, is ≤ 5 Pa. For systems > 1 ton, increase by 1 Pa per half ton. One or two ducted returns: [2] The greater of ≤ 4 CFM25 per 100 sq. ft. of CFA or ≤ 40 CFM. Three or more ducted returns: [2] The greater of ≤ 6 CFM25 per 100 sq. ft. of CFA or ≤ 60 CFM.		☐	☐	☐	☐
6.4.2 Final: Tested per allowances below, with the air handler & all ducts, building cavities used as ducts, duct boots, & register grilles atop the finished surface (e.g., drywall, floor) installed. [2] No ducted returns: [2] The greater of ≤ 6 CFM25 per 100 sq. ft. of CFA or ≤ 60 CFM. Additionally, the measured pressure difference between the space containing the air handler and the conditioned space, with the air handler running at high speed is ≤ 5 Pa. For systems > 1 ton, increase by 1 Pa per half ton. One or two ducted returns: [2] The greater of ≤ 8 CFM25 per 100 sq. ft. of CFA or ≤ 80 CFM. Three or more ducted returns: [2] The greater of ≤ 12 CFM25 per 100 sq. ft. of CFA or ≤ 120 CFM.		☐	☐	☐	☐
6.5 Townhouses only: Measured duct leakage to the outside the greater of ≤ 4 CFM25 per 100 sq. ft. of CFA or ≤ 40 CFM25. [2]		☐	☐	☐	☐
6.7 Duct leakage of central exhaust system that serves four or more dwelling units, serving the dwelling unit being reviewed meets one of the following two options:					
6.7.1 Rough-in: Tested including horizontal run outs, trunks, branches, and take-offs up to, but not including, the grilles where the leakage does not exceed 25% of exhaust fan flow. [2] 6.7.2 Final: Tested inclusive of all ductwork between the fan and the grilles where the leakage does not exceed 30% of exhaust fan flow. [2]		☐	☐	☐	☐

7. Dwelling-Unit & Common Space Mechanical Ventilation Systems & Inlets in Return Duct	Yes	No	Not Verified	N/A
7.1 Ventilation manufacturer & model number on installed equipment in the building matches either of the following (check box): [2, 5] ☐ National HVAC Design Report ☐ Written approval received from designer	☐	☐	☐	☐
7.2 Measured ventilation rate is within either ± 15 CFM or ±15% of dwelling unit design values (2.7), and meets or exceeds rates required by ASHRAE 62.2-2010. [2]	☐	☐	☐	☐
7.3 Measured ventilation rate is within either ± 15 CFM or ±15% of common space design values (2.9), and meets or exceeds rates required by ASHRAE 62.1-2010. [2, 6]	☐	☐	☐	☐
7.4 A ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment). Townhouses only: A readily-accessible ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment).	☐	☐	☐	☐
7.5 For any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system (Complete if present; otherwise check "N/A"): [2]	-	-	-	☐
7.5.1 Controls automatically restrict airflow using a motorized damper during vent, off-cycle and occupant override. [2]	☐	☐	☐	☐
7.5.2 Measured vent. Rate is ≤ 15 CFM or 15% above design value at highest HVAC fan speed. [2]	☐	☐	☐	☐
7.9 If central exhaust fans, ≤ 1 HP, are installed as part of the dwelling-unit mechanical ventilation system, the lesser of 5 or 20% of the installed fans are verified as direct-drive, ECM, with variable speed controllers. If > 1 HP, the lesser of 5 or 20% of the fans are installed with NEMA™ Premium Motors.	☐	☐	☐	☐
7.10 Air inlet locations (Complete if air inlet locations were installed (2.22, 2.23); otherwise check "N/A"): [2]	-	-	-	☐
7.10.1 Inlet(s) pull ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit.	☐	☐	☐	-
7.10.2 Inlet(s) are ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources not exiting the roof, and ≥ 3 ft. distance from dryer exhausts and sources exiting the roof. [2]	☐	☐	☐	-
7.10.3 Inlet(s) are provided with rodent / insect screen with ≤ 0.5 inch mesh.	☐	☐	☐	-

8. Local Mechanical Exhaust (National HVAC Design Report Item # indicated in parenthesis)

Dwelling Unit Mechanical Exhaust – In each dwelling unit kitchen and bathroom, a system is installed that exhausts directly to the outdoors and meets one of the following measured airflow standards: [2]

Location		Continuous Rate	Intermittent Rate [2]				
8.1 Kitchen	Airflow	≥ 5 ACH, based on kitchen volume [2]	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume [2]	☐	☐	☐	☐
8.2 Bathroom	Airflow	≥ 20 CFM	≥ 50 CFM	☐	☐	☐	☐

Mechanical Exhaust for Common Spaces and Shared Garages				
8.3 Measured exhaust rates are ≥ ASHRAE 62.1 rates (2c). [2, 6]	☐	☐	☐	☐
8.4 Where a garage exhaust ventilation system is installed, it is equipped with controls that sense CO and NO2.	☐	☐	☐	☐
9. Filtration				
9.1 In the dwelling unit being reviewed, MERV 6+ filter(s) installed in each ducted mechanical system, serving an individual dwelling unit and located to facilitate access & regular service by the occupant or building owner. [2]	☐	☐	☐	☐
9.1.1 Filter access panel includes gasket and fits snugly against the edge of filter when closed to prevent bypass. [2]	☐	☐	☐	☐
9.1.2 All return air and mechanically supplied outdoor air passes through filter prior to conditioning.	☐	☐	☐	☐
10. Combustion Appliances				
10.1 Furnaces, boilers, and water heaters located within the building's pressure boundary are mechanically drafted or direct-vented. If mechanically drafted, the minimum volume of combustion air required for safe operation by the manufacturer and/or code shall be met or exceeded and make-up air sources must be mechanically closed when the combustion appliance is not in operation. [2, 5]	☐	☐	☐	☐
10.2 In the dwelling unit being reviewed and all applicable common spaces, fireplaces located within the building's pressure boundary are direct-vented. [2]	☐	☐	☐	☐
10.3 In the dwelling unit being reviewed and all applicable common spaces, no unvented combustion appliances other than cooking ranges or ovens are located inside the building's pressure boundary. For cooking ranges and ovens, local mechanical exhaust per Rater Field Checklist Item 8.1 requirements must be met. [2]	☐	☐	☐	☐
11. Domestic Hot Water				
11.2 For hot water equipment serving common spaces but not dwelling units nor shared laundry: where rated in EF or UEF, meet the efficiency levels specified in the ENERGY STAR Multifamily Reference Design. Otherwise, meet or exceed 85% Et. [2]	☐	☐	☐	☐
11.3 For in-unit storage water heaters, AHRI Certificate confirms the presence of a heat trap.	☐	☐	☐	☐
11.4 Where visible in the dwelling unit, DHW piping is insulated with a minimum of R-3. [2]	☐	☐	☐	-
11.5 Measured delivery temperatures at faucets and showerheads do not exceed 125°F. [2]	☐	☐	☐	-
12. Lighting	**Yes**	**No**	**Not Verified**	**N/A**

12.1 Common Space Lighting Controls:				
12.1.1 At least 50% of common spaces (including shared garages), except the building lobby and where automatic shutoff would endanger the safety of occupants, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified.	☐	☐	☐	☐
12.2 Common Space Lighting Power Density Maximum (except garages): [2]				
12.2.1 Rater-provided lighting power density calculations for the combined common spaces do not exceed ASHRAE 90.1-2007 allowances for those combined spaces, using the Space-by-Space or Building Area Method. For at least 50% of common spaces, the fixture counts, wattage, and approximate square footage are confirmed. [2]	☐	☐	☐	☐
12.3 Shared garages: Rater-provided lighting power density calculations do not exceed 0.24 W/ft2. The fixture counts, fixture wattage, and approximate square footage are confirmed.	☐	☐	☐	☐
12.4 Exterior lighting controls: Fixtures, including parking lot fixtures, must include automatic switching on timers or photocell controls except fixtures intended for 24-hour operation, required for security, or located on dwelling unit balconies.	☐	☐	☐	☐
12.5 In at least 50% of all exterior and common spaces, lighting fixtures meet the efficiency requirements in the ENERGY STAR Multifamily Reference Design, except fixtures located on dwelling unit balconies. [2]	☐	☐	☐	☐
13. Appliances, Ceiling Fans, and Plumbing Fixtures				
13.2 Where installed in common spaces, refrigerators and dishwashers are ENERGY STAR certified and showerheads are WaterSense labeled.	☐	☐	☐	☐
14. Whole Building Energy Consumption Data Acquisition Strategy				
14.1 For buildings 50,000 ft and larger, if the strategy involves a meter or other item installed at the location, this device has been confirmed as a strategy that enables the collection of monthly or annual building-level energy consumption data (electricity, natural gas, chilled water, steam, fuel oil, propane, etc.). [2]	☐	☐	☐	☐

Instructions for Performing Quality Assurance Review

- This checklist is used to document the quality assurance review of the items being verified by the Rater in the dwelling units and common spaces of an ENERGY STAR Multifamily New Construction building.
- One checklist shall be used to document all applicable items for one dwelling unit and the common space. Where more than one dwelling unit in a building is being reviewed, additional checklists shall be used for the additional dwelling units, but the common space only needs to be reviewed once per building.
- During File Review, complete the Action Items / Summary of QA, Documentation Collection, Energy Rating File and National Rater Design Review Checklist sections. During Field Review, complete the entire checklist.
- In accordance with the HCO's policies, a limited amount of the required QA Field Reviews may be performed at the pre-drywall stage. Mark items that are not yet installed as "N/A." 1
- Where a checklist item cannot be verified because it is not visible, not accessible, cannot be tested, or there are other extenuating circumstances, mark the box in the column "Not Verified," and include an explanation in an attached document.
- Additional items may be reviewed at the reviewer's discretion and included in the Additional Checklist Items and Exemptions report below.
- Items found to be out of compliance shall be corrected. If correction is not possible, the building's certification is required to be withdrawn (please contact energystarhomes@energystar.gov).

Footnotes

1. Home Certification Organizations (HCOs) are independent organizations recognized by EPA to implement an ENERGY STAR certification program for single-family and multifamily homes and apartments using an Energy Rating Index (ERI) compliance path. Learn more and find a current list of HCOs at energystar.gov/partner_resources/residential_new/working/other_participants/hco.
2. This item has been edited for space or has a footnote with an exemption or alternative. Refer to referenced program document for details. When an item is properly met using an exemption or alternative, mark the item as "Yes" and record a description in the Additional Checklist Items and Exemptions table.
3. This requirement is modified from the original program requirement in order to be applicable in the context of a finished building.
4. While the QA Reviewer is not required to verify compliance with the insulation requirements in each common space, the QA Reviewer is required to review the ceiling insulation in at least one common space and floor insulation in at least one common space, if applicable.
5. For Items 5b.1, 5.5, 7.1, and 10.1 while the QA Reviewer is not required to verify compliance for each HVAC and ventilation system installed in the building, the QA Reviewer shall verify compliance for the systems serving the dwelling unit being reviewed and in addition, the QA Reviewer shall verify compliance for a minimum of two systems that provide heating and/or cooling to a common space, and two systems that provide ventilation to a common space.
6. For Items 7.3 and 8.3, while the QA Reviewer is not required to verify compliance with the ventilation requirements in each common space, the QA Reviewer is required to review the Rater-provided common space ventilation test results for compliance. The QA Reviewer is then required to directly measure ventilation airflows for the lesser of 5 or 20% of the reported values.

Additional Checklist Items and Exemptions

Additional Checklist Items - *Use this space to list additional Items reviewed (attach additional pages, if needed)*						
Checklist/Section Name	**Item #**	**Notes**	**Yes**	**No**	**Not Verified**	**N/A**
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