



ENERGY STAR Single-Family New Homes

National Rater Field Checklist, Version 3 / 3.1 / 3.2 (Rev. 12)

Home Address: _____		City: _____		State: _____		Permit Date: _____	
Thermal Enclosure System		Must Correct	Builder Verified ¹	Rater Verified ²	N/A ³		
1. High-Performance Fenestration & Insulation							
1.1 Fenestration meets or exceeds specification in Item 2.1 of the National Rater Design Review Checklist.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
1.2 Insulation meets or exceeds specification in Item 3.1 of the National Rater Design Review Checklist. ⁴		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
1.3 All insulation achieves Grade I install. per ANSI / RESNET / ICC 301. Alternatives in Footnote 5. ^{5,6}		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
2. Fully-Aligned Air Barriers⁷ - At each insulated location below, a complete air barrier is provided that is fully aligned as follows:							
Ceilings: At interior or exterior horizontal surface of ceiling insulation in Climate Zones 1-3; at interior horizontal surface of ceiling insulation in Climate Zones 4-8. Also, at exterior vertical surface of ceiling insulation in all climate zones (e.g., using a wind baffle that extends to the full height of the insulation in every bay or a tabbed baffle in each bay with a soffit vent that prevents wind washing in adjacent bays). ⁸							
2.1 Dropped ceilings / soffits below unconditioned attics, and all other ceilings.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Walls: At exterior vertical surface of wall insulation in all climate zones; also at interior vertical surface of wall insulation in Climate Zones 4-8. ⁹							
2.2 Walls behind showers, tubs, staircases, and fireplaces.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.3 Attic knee walls and skylight shaft walls. ¹⁰		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.4 Walls adjoining porch roofs or garages.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.5 Double-walls and all other exterior walls.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
Floors: At exterior vertical surface of floor insulation in all climate zones and, if over unconditioned space, also at interior horizontal surface including supports to ensure alignment. Alternatives in Footnotes 12 & 13. ^{11, 12, 13}							
2.6 Floors above garages, floors above unconditioned basements or crawlspaces, and cantilevered floors.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.7 All other floors adjoining unconditioned space (e.g., rim / band joists at exterior wall or at porch roof).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. Reduced Thermal Bridging							
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 $\geq R-21$ in CZ 1-5; $\geq R-30$ in CZ 6-8. ¹⁴		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.2 For slabs on grade in CZ 4-8, 100% of slab edge insulated to $\geq R-5$ at the depth specified by the 2009 IECC and aligned with the thermal boundary of the walls. ^{15, 16}		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) $\geq R-21$ in CZ 1-5; $\geq R-30$ in CZ 6-8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4 At above-grade walls separating conditioned from unconditioned space, one of the following options used (rim / band joists exempted): ¹⁷							
3.4.1 Continuous rigid insulation, insulated siding, or combination of the two is: $\geq R-3$ in CZ 1-4; $\geq R-5$ in CZ 5-8 ^{18, 19, 20} ; OR ;		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.2 Structural Insulated Panels OR ; Insulated Concrete Forms OR ; Double-wall framing OR ; ^{18, 21}		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.3 Advanced framing, including all of the items below: ²²							
3.4.3a Corners insulated $\geq R-6$ to edge ²³ ; AND ;		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.3b Headers above windows & doors insulated $\geq R-3$ for 2x4 framing or equivalent cavity width, and $\geq R-5$ for all other assemblies (e.g., with 2x6 framing) ²⁴ ; AND ;		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.3c Framing limited at all windows & doors to one pair of king studs, plus one pair of jack studs per window opening to support the header and sill; AND ;		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.3d Interior / exterior wall intersections insulated to same R-value as rest of exterior wall, ²⁵ AND ;		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4.3e Minimum stud spacing of 16 in. o.c. for 2x4 framing in all Climate Zones and, in CZ 6-8, 24 in. o.c. for 2x6 framing. ²⁶		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4. Air Sealing (Unless otherwise noted below, "sealed" indicates the use of caulk, foam, or equivalent material)							
4.1 Ducts, flues, shafts, plumbing, piping, wiring, exhaust fans, & other penetrations to unconditioned space sealed, with blocking / flashing as needed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
4.2 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to $\geq R-10$ in CZ 4-8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.3 Above-grade sill plates adjacent to conditioned space sealed to foundation or sub-floor. Gasket also placed beneath above-grade sill plate if resting atop concrete / masonry & adjacent to cond. space. ^{27,28}		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.4 Continuous top plate or blocking is at top of walls adjoining unconditioned space, and sealed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.5 Drywall sealed to top plate at all unconditioned attic / wall interfaces using caulk, foam, drywall adhesive (but not other construction adhesives), or equivalent material. Either apply sealant directly between drywall and top plate or to the seam between the two from the attic above.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.6 Rough opening around windows & exterior doors sealed. ²⁹		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-		
4.7 Walls that separate attached garages from occupiable space sealed and, also, an air barrier installed and sealed at floor cavities aligned with these walls.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.8 In multifamily buildings, the gap between the common wall (e.g., the drywall shaft wall) and the structural framing between units sealed at all exterior boundaries.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.9 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.10 Attic access panels, drop-down stairs, & whole-house fans equipped with durable $\geq R-10$ cover that is gasketed (i.e., not caulked). Fan covers either installed on house side or mechanically operated. ³⁰		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		



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HVAC System ³¹				Must Correct	Rater Verified ²	N/A ³
5. Heating & Cooling Equipment - Complete Track A - HVAC Grading ³² or Track B - HVAC Credential ³³						
Track A	5a.1 Blower fan volumetric airflow is Grade I or II per ANSI / RESNET / ACCA / ICC 310.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	5a.2 Blower fan watt draw is Grade I or II per ANSI / RESNET / ACCA / ICC 310.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	5a.3 Refrigerant charge is Grade I per ANSI / RESNET / ACCA / ICC 310. See Footnote 34 for exemptions. ³⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Track B	5b.1 HVAC manufacturer & model number on installed equipment matches either of the following (check box): ³⁵ <input type="checkbox"/> National HVAC Design Report <input type="checkbox"/> Written approval received from designer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	5b.2 External static pressure measured by Rater at contractor-provided test locations and documented below: ³⁶ Return-Side External Static Pressure: _____ IWC Supply-Side External Static Pressure: _____ IWC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	5b.3 Permitted, but not required: National HVAC Commissioning Checklist collected, with no items left blank.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6. Duct Quality Installation (Applies to Heating, Cooling, Ventilation, Exhaust, & Pressure Balancing Ducts, Unless Noted in Footnote)						
6.1 Ductwork installed without kinks, sharp bends, compressions, or excessive coiled flexible ductwork. ³⁷				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2 Bedrooms pressure-balanced (e.g., using transfer grilles, jump ducts, dedicated return ducts, undercut doors) to achieve a Rater-measured pressure differential ≥ -3 Pa and $\leq +3$ Pa with respect to the main body of the house when all air handlers are operating. Test configuration and an alternative compliance option in Footnote 38. ³⁸				<input type="checkbox"/>	<input type="checkbox"/>	-
6.3 All supply and return ducts in unconditioned space, including connections to trunk ducts, are insulated to $\geq R-6$ ³⁹				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4 Rater-measured total duct leakage meets one of the following two options. Alternative in Footnote 41: ^{40, 41, 42}						
6.4.1 <u>Rough-in</u> : The greater of ≤ 4 CFM25 per 100 sq. ft. of CFA or ≤ 40 CFM25, with air handler & all ducts, building cavities used as ducts, & duct boots installed. All duct boots sealed to finished surface, Rater-verified at final. ⁴³				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.2 <u>Final</u> : The greater of ≤ 8 CFM25 per 100 sq. ft. of CFA or ≤ 80 CFM25, with the air handler & all ducts, building cavities used as ducts, duct boots, & register grilles atop the finished surface (e.g., drywall, floor) installed. ⁴⁴				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.5 Rater-measured duct leakage to outdoors the greater of ≤ 4 CFM25 per 100 sq. ft. of CFA or ≤ 40 CFM25. ^{40, 45}				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Dwelling Unit Mechanical Ventilation Systems ("Vent System") ⁴⁶ & Inlets in Return Duct ⁴⁷						
7.1 Rater-measured ventilation rate is within either ± 15 CFM or $\pm 15\%$ of design report value. ⁴⁸				<input type="checkbox"/>	<input type="checkbox"/>	-
7.2 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). ⁴⁹				<input type="checkbox"/>	<input type="checkbox"/>	-
7.3 For any outdoor air inlet connected to a ducted return of the HVAC system (Complete if present; otherwise check "N/A"): ⁴⁷						<input type="checkbox"/>
7.3.1 Controls automatically restrict airflow using a motorized damper during vent. off-cycle and occupant override. ⁵⁰				<input type="checkbox"/>	<input type="checkbox"/>	-
7.3.2 Rater-measured vent. rate is ≤ 15 CFM or 15% above design value at highest HVAC fan speed. Alt. in Fn. 51. ⁵¹				<input type="checkbox"/>	<input type="checkbox"/>	-
7.4 System fan rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted. ⁵²				<input type="checkbox"/>	<input type="checkbox"/>	-
7.5 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours. ⁵³				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.6 Bathroom fans are ENERGY STAR certified if used as part of the Vent System. ⁵⁴				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.7 Air inlet location (Complete if ventilation air inlet location was specified on design report; otherwise check "N/A"): ^{55, 56}						<input type="checkbox"/>
7.7.1 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit.				<input type="checkbox"/>	<input type="checkbox"/>	-
7.7.2 Inlet is ≥ 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. ⁵⁷				<input type="checkbox"/>	<input type="checkbox"/>	-
7.7.3 Inlet is provided with rodent / insect screen with ≤ 0.5 inch mesh.				<input type="checkbox"/>	<input type="checkbox"/>	-
8. Local Mechanical Exhaust – In each kitchen and bathroom, a system is installed that exhausts directly to the outdoors and meets one of the following Rater-measured airflow and manufacturer-rated sound level standards: ^{48, 58}						
Location		Continuous Rate	Intermittent Rate ⁵⁹	Must Correct	Rater Verified	N/A
8.1 Kitchen		Airflow ≥ 5 ACH, based on kitchen volume ^{60, 61}	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume ^{60, 61, 62}			
		Sound Recommended: ≤ 1 sone	Recommended: ≤ 3 sones			
8.2 Bathroom		Airflow ≥ 20 CFM	≥ 50 CFM	<input type="checkbox"/>	<input type="checkbox"/>	-
		Sound Required: ≤ 1 sone	Recommended: ≤ 3 sones			
9. Filtration						
9.1 MERV 6+ filter(s) installed in each ducted mech. system, designed so all return and mechanically supplied outdoor air passes through filter(s) prior to conditioning, and located to facilitate occupant access & regular service. ⁶³				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2 Filter access panel includes gasket and fits snugly against exposed edge of filter when closed to prevent bypass. ⁶⁴				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Combustion Appliances						
10.1 Furnaces, boilers, & water heaters are mechanically drafted or direct-vented. Alternatives in Footnote 67. ^{65, 66, 67}				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.2 Fireplaces are mechanically drafted or direct-vented. Alternatives in Footnote 68. ^{65, 66, 68}				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.3 No unvented combustion appliances other than cooking ranges or ovens are located inside the home's pressure boundary. Alternative in Footnote 70. ^{65, 69, 70}				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rater Name: _____		Rater Pre-Drywall Inspection Date: _____		Rater Initials: _____		
Rater Name: _____		Rater Final Inspection Date: _____		Rater Initials: _____		
Builder Employee: _____		Builder Inspection Date: _____		Builder Initials: _____		