



ENERGY STAR Certified Homes, Version 3

Revision 07 to 08 Crosswalk

This document provides a crosswalk between Revision 07 and 08. On the following pages, the column on the right has been used to indicate where each Rev. 07 Item has been relocated to in Rev. 08, or if it has been removed. The following abbreviations are used to denote the Rev. 08 program documents:

Program Document Name	Abbreviation
HVAC Design Report	HVAC-D
HVAC Commissioning Checklist	HVAC-C
Rater Design Review Checklist	Rater-D
Rater Field Checklist	Rater-F
Water Management System Builder Requirements	Builder-W

For more information about each Item, please see the Rev. 08 Highlights Documents, Version Tracking Documents, and Policy Record.

For Reference Only



ENERGY STAR Certified Homes, Version 3 (Rev. 07)

Thermal Enclosure System Rater Checklist

Home Address: _____ City: _____ State: _____ Zip Code: _____	
1. High-Performance Fenestration	Revision 08 Placement
1.1 <i>Prescriptive Path</i> : Fenestration shall meet or exceed ENERGY STAR requirements	[Removed]
1.2 <i>Performance Path</i> : Fenestration shall meet or exceed 2009 IECC requirements	Rater-D 2.1; Rater-F 1.1
2. Quality-Installed Insulation	
2.1 Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options:	Rater-D 3.1; Rater-F 1.2
2.1.1 Meet or exceed 2009 IECC levels OR ;	Rater-D 3.1.1; Rater-F 1.2
2.1.2 Achieve $\leq 133\%$ of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, AND home shall achieve $\leq 50\%$ of the infiltration rate in Exhibit 1 of the National Program Requirements	Rater-D 3.1.2; Rater-F 1.2
2.2 All ceiling, wall, floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces that contain a layer of continuous, air impermeable insulation $\geq R-3$ in Climate Zones 1 to 4, $\geq R-5$ in Climate Zones 5 to 8	Rater-F 1.3, Footnote 4
3. Fully-Aligned Air Barriers	
At each insulated location noted below, a complete air barrier shall be provided that is fully aligned with the insulation as follows:	
<ul style="list-style-type: none"> • At interior or exterior surface of ceilings in Climate Zones 1-3; at interior surface of ceilings in Climate Zones 4-8. Also, include barrier at interior edge of attic eave in all climate zones using a wind baffle that extends to the full height of the insulation. Include a baffle in every bay or a tabbed baffle in each bay with a soffit vent that will also prevent wind washing of insulation in adjacent bays • At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8 • At interior surface of floors in all climate zones, including supports to ensure permanent contact and blocking at exposed edge 	
3.1 Walls	
3.1.1 Walls behind showers and tubs	Rater-F 2.2
3.1.2 Walls behind fireplaces	
3.1.3 Attic knee walls	Rater-F 2.3
3.1.4 Skylight shaft walls	
3.1.5 Wall adjoining porch roof	Rater-F 2.4
3.1.6 Staircase walls	Rater-F 2.2
3.1.7 Double walls	Rater-F 2.5
3.1.8 Garage rim / band joist adjoining conditioned space	Rater-F 2.4 & 4.7
3.1.9 All other exterior walls	Rater-F 2.5
3.2 Floors	
3.2.1 Floor above garage	Rater-F 2.6
3.2.2 Cantilevered floor	
3.2.3 Floor above unconditioned basement or unconditioned crawlspace	
3.3 Ceilings	
3.3.1 Dropped ceiling / soffit below unconditioned attic	Rater-F 2.1
3.3.2 All other ceilings	
4. Reduced Thermal Bridging	
4.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels: CZ 1-5: $\geq R-21$; CZ 6-8: $\geq R-30$	Rater-F 3.1
4.2 For slabs on grade in CZ 4 and higher, 100% of slab edge insulated to $\geq R-5$ at the depth specified by the 2009 IECC and aligned with thermal boundary of the walls	Rater-F 3.2
4.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) $\geq R-21$ in CZ 1-5; $\geq R-30$ in CZ 6-8	Rater-F 3.3
4.4 Reduced thermal bridging at above-grade walls separating conditioned from unconditioned space (rim / band joists exempted) using one of the following options:	Rater-F 3.4
4.4.1 Continuous rigid insulation, insulated siding, or combination of the two; $\geq R-3$ in Climate Zones 1 to 4, $\geq R-5$ in Climate Zones 5 to 8, OR ;	Rater-F 3.4.1
4.4.2 Structural Insulated Panels (SIPs) , OR ;	Rater-F 3.4.2
4.4.3 Insulated Concrete Forms (ICFs) , OR ;	
4.4.4 Double-wall framing, OR ;	Rater-F 3.4.3
4.4.5 Advanced framing, including all of the items below:	Rater-F 3.4.3a
4.4.5a All corners insulated $\geq R-6$ to edge, AND ;	Rater-F 3.4.3b
4.4.5b All 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), AND ;	Rater-F 3.4.3c
4.4.5c 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 ;	Rater-F 3.4.3d
4.4.5d All interior / exterior wall intersections insulated to the same R-value as the rest of the exterior wall, AND ;	Rater-F 3.4.3e
4.4.5e Minimum stud spacing of 16 in. o.c. for 2x4 framing in all Climate Zones and, in Climate Zones 5 through 8, 24 in. o.c. for 2x6 framing	



ENERGY STAR Certified Homes, Version 3 (Rev. 07) Thermal Enclosure System Rater Checklist

5. Air Sealing	Revision 08 Placement
5.1 Penetrations to unconditioned space fully sealed with solid blocking or flashing as needed and gaps sealed with caulk or foam	Rater-F 4.1
5.1.1 Duct / flue shaft	
5.1.2 Plumbing / piping	
5.1.3 Electrical wiring	
5.1.4 Bathroom and kitchen exhaust fans	
5.1.5 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and fully gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to $\geq R-10$ in CZ 4 and higher to minimize condensation potential.	Rater-F 4.2
5.1.6 Light tubes adjacent to unconditioned space include lens separating unconditioned and conditioned space and are fully gasketed	[Removed]
5.2 Cracks in the building envelope fully sealed	
5.2.1 All above-grade sill plates adjacent to conditioned space sealed to foundation or sub-floor with caulk, foam, or equivalent material. Foam gasket also placed beneath above-grade sill plate if resting atop concrete or masonry and adjacent to conditioned space	Rater-F 4.3
5.2.2 At top of walls adjoining unconditioned spaces, continuous top plates or sealed blocking using caulk, foam, or equivalent material	Rater-F 4.4
5.2.3 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.	Rater-F 4.5
5.2.4 Rough opening around windows & exterior doors sealed with caulk or foam	Rater-F 4.6
5.2.5 Marriage joints between modular home modules at all exterior boundary conditions fully sealed with gasket and foam	[Removed]
5.2.6 All seams between Structural Insulated Panels (SIPs) foamed and / or taped per manufacturer's instructions	
5.2.7 In multifamily buildings, the gap between the common wall (e.g. the drywall shaft wall) and the structural framing between units fully sealed at all exterior boundaries	Rater-F 4.8
5.3 Other openings	
5.3.1 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket	Rater-F 4.9
5.3.2 Attic access panels and drop-down stairs equipped with a durable $\geq R-10$ insulated cover that is gasketed (i.e., not caulked) to produce continuous air seal when occupant is not accessing the attic	Rater-F 4.10
5.3.3 Whole-house fans equipped with a durable $\geq R-10$ insulated cover that is gasketed and either installed on the house side or mechanically operated	



ENERGY STAR Certified Homes, Version 3 (Rev. 07) HVAC System Quality Installation Contractor Checklist

5. Selected Furnace, If Furnace to be Installed	Revision 08 Placement
5.1 Furnace Manufacturer & Model: _____	HVAC-D 4.17
5.2 Listed Efficiency: _____ AFUE	HVAC-D 4.18
5.3 Listed Output Heating Capacity: _____ BTUh	HVAC-D 4.19
5.4 Listed Output Heat. Cap. (Value 5.3) is 100-140% of Design Total Heat Loss (Value 2.15) or next nominal size	HVAC-D 4.20 - 4.22
6. Refrigerant Tests - Run system for 15 minutes before testing	
Note: If outdoor ambient temperature at the condenser is $\leq 55^{\circ}\text{F}$ or, if known, below the manufacturer-recommended minimum operating temperature for the cooling cycle, then the system shall include a TXV, and the contractor shall mark "N/A" on the Checklist for Section 6 & 7.	
6.1 Outdoor ambient temperature at condenser: _____ $^{\circ}\text{F}$ DB	HVAC-C 2.1
6.2 Return-side air temperature inside duct near evaporator, during cooling mode: _____ $^{\circ}\text{F}$ WB	HVAC-C 2.2
6.3 Liquid line pressure: _____ psig	HVAC-C 2.3
6.4 Liquid line temperature: _____ $^{\circ}\text{F}$ DB	HVAC-C 2.4
6.5 Suction line pressure: _____ psig	HVAC-C 2.5
6.6 Suction line temperature: _____ $^{\circ}\text{F}$ DB	HVAC-C 2.6
7. Refrigerant Calculations	
For System with Thermal Expansion Valve (TXV):	
7.1 Condenser saturation temperature: _____ $^{\circ}\text{F}$ DB (Using Value 6.3)	HVAC-C 2.7
7.2 Subcooling value: _____ $^{\circ}\text{F}$ DB (Value 7.1 - Value 6.4)	HVAC-C 2.8
7.3 OEM subcooling goal: _____ $^{\circ}\text{F}$ DB	HVAC-C 2.9
7.4 Subcooling deviation: _____ $^{\circ}\text{F}$ DB (Value 7.2 – Value 7.3)	HVAC-C 2.10
For System with Fixed Orifice:	
7.5 Evaporator saturation temperature: _____ $^{\circ}\text{F}$ DB (Using Value 6.5)	HVAC-C 2.11
7.6 Superheat value: _____ $^{\circ}\text{F}$ DB (Value 6.6 – Value 7.5)	HVAC-C 2.12
7.7 OEM superheat goal: _____ $^{\circ}\text{F}$ DB (Using superheat tables and Values 6.1 & 6.2)	HVAC-C 2.13
7.8 Superheat deviation: _____ $^{\circ}\text{F}$ DB (Value 7.6 – Value 7.7)	HVAC-C 2.14
7.9 Value 7.4 is $\pm 3^{\circ}\text{F}$ or Value 7.8 is $\pm 5^{\circ}\text{F}$	HVAC-C 2.15
7.10 An OEM test procedure (e.g., as defined for a ground-source heat pump) has been used in place of sub-cooling or super-heat process and documentation has been attached that defines this procedure	HVAC-C 2.16
8. Electrical Measurements – Taken at electrical disconnect while component is in operation	
8.1 Evaporator or furnace air handler fan: _____ amperage _____ line voltage	[Removed]
8.2 Condenser unit: _____ amperage _____ line voltage	
8.3 Electrical measurements within OEM-specified tolerance of nameplate value	
9. Air Flow Tests	
9.1 Air volume at evaporator: _____ CFM	HVAC-C 3.7
9.2 Test performed in which mode? <input type="checkbox"/> Heating <input type="checkbox"/> Cooling	HVAC-C 3.1
9.3 Return duct static pressure: _____ IWC Test Hole Location: _____	HVAC-C 3.2 - 3.4
9.4 Supply duct static pressure: _____ IWC Test Hole Location: _____	HVAC-C 3.2
9.5 Test hole locations are well-marked and accessible	HVAC-C 3.2
9.6 Airflow volume at evaporator (Value 9.1), at fan design speed and full operating load, $\pm 15\%$ of the airflow required per system design (Value 2.16) or within range recommended by OEM	HVAC-C 3.8
10. Air Balance	
10.1 Balancing report prepared and attached indicating the room name and design airflow for each supply and return register. In addition, final individual room airflows measured and documented through one of the following options:	HVAC-C 4.1; HVAC-C 4.2
10.1.1 Measured by contractor using ANSI / ACCA 5 QI-2007 protocol, documented by contractor on the balancing report, & verified by contractor to be within the greater of $\pm 20\%$ or 25 CFM of design airflow, OR;	[Removed]
10.1.2 To be measured, documented, and verified by a Rater per Item 1.4.2 of the HVAC System QI Rater Checklist	
11. System Controls	
11.1 Operating and safety controls meet OEM requirements	[Removed]
12. Drain pan	
12.1 Corrosion-resistant drain pan, properly sloped to drainage system, included with each HVAC component that produces condensate	Builder-W 4.6



ENERGY STAR Certified Homes, Version 3 (Rev. 07) HVAC System Quality Installation Rater Checklist

Home Address: _____ City: _____ State: _____ Zip Code: _____	
1. Review of HVAC System Quality Installation Contractor Checklist	Revision 08 Placement
1.1 HVAC System Quality Installation Contractor Checklist completed in its entirety and collected for records, along with documentation on ventilation system (1.3), full load calculations (2.18), and AHRI certificate (3.13).	Rater-D 4.1
1.2 Review the following parameters related to system cooling design, selection, and installation from the HVAC Contractor Checklist (Contractor Checklist Item # indicated in parenthesis):	Rater-D 4.2
1.2.1 Outdoor design temperatures (2.4) are equal to the 1% and 99% ACCA Manual J design temperatures for contractor-designated design location	Rater-D 4.2.1
1.2.2 Home orientation (2.5) matches orientation of rated home	Rater-D 4.2.6
1.2.3 Number of occupants (2.6) equals number of occupants in rated home	Rater-D 4.2.2
1.2.4 Conditioned floor area (2.7) is within $\pm 10\%$ of conditioned floor area of rated home	Rater-D 4.2.3
1.2.5 Window area (2.8) is within $\pm 10\%$ of calculated window area of rated home	Rater-D 4.2.4
1.2.6 Predominant window SHGC (2.9) is within 0.1 of predominant value in rated home	Rater-D 4.2.5
1.2.7 Listed latent cooling capacity (3.8) exceeds design latent heat gain (2.12)	[Removed]
1.2.8 Listed sensible cooling capacity (3.9) exceeds design sensible heat gain (2.13)	[Removed]
1.2.9 Listed total cooling capacity (3.10) is 95-115% (or 95-125% for Heat Pumps in Climate Zones 4-8) of design total heat gain (2.14), or next nominal size	Rater-D 4.2.8
1.2.10 HVAC manufacturer and model numbers on installed equipment, Contractor Checklist (3.1, 3.2, 5.1), and AHRI certificate or OEM catalog data all match	Rater-F 5.1
1.2.11 Using reported liquid line (6.3) or suction line (6.5) pressure, corresponding temperature (as determined using pressure / temperature chart for refrigerant type) matches reported condenser (7.1) or evaporator (7.5) saturation temperature (± 3 degrees)	[Removed]
1.2.12 Calculated subcooling (7.1 minus 6.4) value is within ± 3 °F of the reported target temperature (7.3) or calculated superheat (6.6 minus 7.5) value is within ± 5 °F of the reported target temperature (7.7).	[Removed]
1.3 Rater-verified supply & return duct static pressure $\leq 110\%$ of contractor values (9.3, 9.4)	Rater-F 5.2
1.4 Contractor-prepared balancing report indicating the room name and design airflow for each supply and return register collected by Rater for records. In addition, final individual room airflows measured and documented on balancing report through one of the following options:	
1.4.1 Measured and documented by contractor (10.1.1), OR;	
1.4.2 Measured by Rater using Section 804.2 of the Mortgage Industry National HERS Standard, documented by Rater, & verified by Rater to be within the greater of $\pm 20\%$ or 25 CFM of design airflow (10.1.2)	[Removed]
1.5 HVAC contractor holds credentials necessary to complete the HVAC System QI Contractor Checklist	Rater-D 1.2
2. Duct Quality Installation - Applies to All Heating, Cooling, Ventilation, Exhaust, and Pressure Balancing Ducts	
2.1 Connections and routing of ductwork completed without kinks or sharp bends.	
2.2 No excessive coiled or looped flexible ductwork.	
2.3 Flexible ducts in unconditioned space not installed in cavities smaller than outer duct diameter; in conditioned space not installed in cavities smaller than inner duct diameter	Rater-F 6.1
2.4 Flexible ducts supported at intervals as recommended by mfr. but at a distance ≤ 5 ft.	
2.5 Building cavities not used as supply or return ducts unless they meet Items 3.2, 3.3, 4.1, and 4.2 of this Checklist.	
2.6 HVAC ducts, cavities used as ducts, and combustion inlets and outlets may pass perpendicularly through exterior walls but shall not be run within exterior walls unless at least R-6 continuous insulation is provided on exterior side of the cavity, along with an interior and exterior air barrier where required by the Thermal Enclosure System Rater Checklist.	[Removed]
2.7 Quantity & location of supply and return duct terminals match contractor balancing report.	
2.8 Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / or undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating.	Rater-F 6.2
3. Duct Insulation - Applies to All Heating, Cooling, Supply Ventilation, and Pressure Balancing Ducts	
3.1 All connections to trunk ducts in unconditioned space are insulated.	
3.2 <i>Prescriptive Path:</i> Supply ducts in unconditioned attic have insulation \geq R-8. <i>Performance Path:</i> Supply ducts in unconditioned attic have insulation \geq R-6.	Rater-F 6.3
3.3 All other supply ducts and all returns in unconditioned space have insulation \geq R-6.	



ENERGY STAR Certified Homes, Version 3 (Rev. 07) HVAC System Quality Installation Rater Checklist

4. Duct Leakage - Applies to All Heating, Cooling, and Balanced Ventilation Ducts			Revision 08 Placement
4.1 Total Rater-measured duct leakage meets one of the following two options:			Rater-F 6.4
4.1.1 <u>Rough-in</u> : ≤ 4 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed. In addition, <u>all</u> duct boots sealed to finished surface, Rater-verified at final.			Rater-F 6.4.1
4.1.2 <u>Final</u> : ≤ 8 CFM25 per 100 sq. ft. of CFA with the air handler and all ductwork, building cavities used as ductwork, duct boots, & register grilles atop the finished surface (e.g., drywall, flooring) installed.			Rater-F 6.4.2
4.2 Rater-measured duct leakage to outdoors ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area.			Rater-F 6.5
5. Whole-Building Delivered Ventilation			
5.1 Rater-measured ventilation rate is within 100-120% of HVAC contractor design value (2.11).			Rater-F 7.1
6. Controls			
6.1 Air flow is produced when central HVAC fan is energized (set thermostat to "fan").			[Removed]
6.2 Cool air flow is produced when the cooling cycle is energized (set thermostat to "cool").			
6.3 Heated air flow is produced when the heating cycle is energized (set thermostat to "heat").			
6.4 Continuously-operating ventilation & exhaust fans include readily accessible override controls.			Rater-F 7.2
6.5 Function of ventilation controls is obvious (e.g., bathroom exhaust fan) or, if not, controls have been labeled.			
7. Ventilation Air Inlets & Ventilation Source			
7.1 All ventilation air inlets located ≥10 ft. of stretched-string distance from known contamination sources such as stack, vent, exhaust hood, or vehicle exhaust. Exception: ventilation air inlets in the wall ≥ 3 ft. from dryer exhausts and contamination sources exiting through the roof.			Rater-F 7.7.2
7.2 Ventilation air inlets ≥ 2 ft. above grade or roof deck in Climate Zones 1-3 or ≥ 4 ft. above grade or roof deck in Climate Zones 4-8 and not obstructed by snow, plantings, condensing units or other material at time of inspection.			
7.3 Ventilation air inlets provided with rodent / insect screen with ≤ 0.5 inch mesh.			Rater-F 7.7.3
7.4 Ventilation air comes directly from outdoors, not from adjacent dwelling units, garages, crawlspaces, or attics.			Rater-F 7.7.1
8. Local Mechanical Exhaust			
In each kitchen and bathroom, a system shall be installed that exhausts directly to the outdoors and meets one of the following Rater-measured airflow standards:			
Location	Continuous Rate	Intermittent Rate	
8.1 Kitchen	≥ 5 ACH, based on kitchen volume	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume	Rater-F 8.1
8.2 Bathroom	≥ 20 CFM	≥ 50 CFM	Rater-F 8.2
8.3 If fans share common exhaust duct, back-draft dampers installed.			[Removed]
8.4 Common exhaust duct not shared by fans in separate dwellings.			
8.5 Clothes dryers vented directly to outdoors, except for ventless dryers equipped with a condensate drain.			
9. Ventilation & Exhaust Fan Ratings (Exemptions for Kitchen, HVAC, and Remote-Mounted Fans)			
9.1 Intermittent supply and exhaust fans rated at ≤ 3 sones by mfr. when producing no less than the minimum airflow rate required by Section 8 of this Checklist, unless rated flow ≥ 400 CFM.			Rater-F 7.4, 8.1, & 8.2
9.2 Continuous supply & exhaust fans rated at ≤ 1 sone by mfr. when producing no less than the minimum airflow required by Section 8 of this Checklist.			Rater-F 7.4, 8.1, & 8.2
9.3 Bathroom fans used as part of a whole-house mechanical ventilation system shall be ENERGY STAR certified; unless rated flow rate ≥ 500 CFM.			Rater-F 7.6
10. Combustion Appliances			
10.1 Furnaces, boilers, and water heaters located within the home's pressure boundary are mechanically drafted or direct-vented. As an exception, naturally drafted equipment is allowed in Climate Zones 1-3. For naturally drafted furnaces, boilers, and water heaters, the Rater has followed RESNET or BPI combustion safety test procedures and met the selected standard's limits for depressurization, spillage, draft pressure, and CO concentration in ambient air, as well as a CO concentration in the flue of ≤ 25 ppm.			Rater-F 10.1
10.2 For fireplaces that are not mechanically drafted or direct-vented to outdoors, total net rated exhaust flow of the two largest exhaust fans (excluding summer cooling fans) is ≤ 15 CFM per 100 sq. ft. of occupiable space when at full capacity or the Rater has verified that the pressure differential is ≤ -5 Pa using BPI's or RESNET's worst-case depressurization test procedure.			Rater-F 10.2
10.3 If unvented combustion appliances other than cooking ranges or ovens are located inside the home's pressure boundary, the Rater has operated the appliance for at least 10 minutes and verified that the ambient CO level does not exceed 35 ppm.			Rater-F 10.3
11. Filtration			
11.1 At least one MERV 6 or higher filter installed in each ducted mechanical system.			Rater-F 9.1
11.2 All return air and mechanically supplied outdoor air pass through filter prior to conditioning.			Rater-F 9.3
11.3 Filter located and installed so as to facilitate access and regular service by the owner.			Rater-F 9.1
11.4 Filter access panel includes gasket or comparable sealing mechanism and fits snugly against the exposed edge of filter when closed to prevent bypass.			Rater-F 9.2



ENERGY STAR Certified Homes, Version 3 (Rev. 07) Water Management System Builder Checklist

Home Address: _____ City: _____ State: _____ Zip Code: _____	
1. Water-Managed Site and Foundation	Revision 08 Placement
1.1 Patio slabs, porch slabs, walks, and driveways sloped ≥ 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less.	Builder-W 1.1
1.2 Back-fill has been tamped and final grade sloped ≥ 0.5 in. per ft. away from home for ≥ 10 ft. See Footnote for alternatives.	Builder-W 1.2
1.3 Capillary break beneath all slabs (e.g., slab on grade, basement slab) except crawlspace slabs using either: ≥ 6 mil polyethylene sheeting, lapped 6-12 in., or ≥ 1 in. extruded polystyrene insulation with taped joints.	Builder-W 1.3
1.4 Capillary break at all crawlspace floors using ≥ 6 mil polyethylene sheeting, lapped 6-12 in., & installed using one of the following opt's:	
1.4.1 Placed beneath a concrete slab; OR,	Builder-W 1.4.1
1.4.2 Lapped up each wall or pier and fastened with furring strips or equivalent; OR,	Builder-W 1.4.2
1.4.3 Secured in the ground at the perimeter using stakes.	Builder-W 1.4.3
1.5 Exterior surface of below-grade walls of basements & unvented crawlspaces finished as follows: a) For poured concrete, masonry, & insulated concrete forms, finish with damp-proofing coating. b) For wood framed walls, finish with polyethylene and adhesive or other equivalent waterproofing.	Builder-W 1.5
1.6 Class 1 vapor retarder not installed on interior side of air permeable insulation in ext. below-grade walls.	Builder-W 1.6
1.7 Sump pump covers mechanically attached with full gasket seal or equivalent.	Builder-W 1.7
1.8 Drain tile installed at the exterior side of footings of basement and crawlspace walls, with the top of the drain tile pipe below the bottom of the concrete slab or crawlspace floor. Drain tile surrounded with ≥ 6 in. of $\frac{1}{2}$ to $\frac{3}{4}$ in. washed or clean gravel and with gravel layer fully wrapped with fabric cloth. Drain tile level or sloped to discharge to outside grade (daylight) or to a sump pump.	Builder-W 1.8
2. Water-Managed Wall Assembly	
2.1 Flashing at bottom of exterior walls with weep holes included for masonry veneer and weep screed for stucco cladding systems, or equivalent drainage system.	Builder-W 2.1
2.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Item 2.1 and fully sealed at all penetrations. Additional bond-break drainage plane layer provided behind all stucco and non-structural masonry cladding wall assemblies.	Builder-W 2.2
2.3 Window and door openings fully flashed.	Builder-W 2.3
3. Water-Managed Roof Assembly	
3.1 Step and kick-out flashing at all roof-wall intersections, extending $\geq 4"$ on wall surface above roof deck and integrated shingle-style with drainage plane above; boot / collar flashing at all roof penetrations.	Builder-W 3.1
3.2 For homes that don't have a slab-on-grade foundation and do have expansive or collapsible soils, gutters & downspouts provided that empty to lateral piping that discharges water on sloping final grade ≥ 5 ft. from foundation, or to underground catchment system not connected to the foundation drain system that discharges water ≥ 10 ft. from foundation. See Footnote for alternatives & exemptions.	Builder-W 3.2
3.3 Self-sealing bituminous membrane or equivalent at all valleys & roof deck penetrations.	Builder-W 3.3
3.4 In 2009 IECC Climate Zones 5 & higher, self-sealing bituminous membrane or equivalent over sheathing at eaves from the edge of the roof line to > 2 ft. up roof deck from the interior plane of the exterior wall.	Builder-W 3.4
4. Water-Managed Building Materials	
4.1 Wall-to-wall carpet <i>not</i> installed within 2.5 ft. of toilets, tubs, and showers.	Builder-W 4.1
4.2 Cement board or equivalent moisture-resistant backing material installed on all walls behind tub and shower enclosures composed of tile or panel assemblies with caulked joints. Paper-faced backerboard shall not be used.	Builder-W 4.2
4.3 In Warm-Humid climates, Class 1 vapor retarders not installed on the interior side of air permeable insulation in above-grade walls, except at shower and tub walls.	Builder-W 4.3
4.4 Building materials with visible signs of water damage or mold <i>not</i> installed or allowed to remain.	Builder-W 4.4
4.5 Framing members & insulation products having high moisture content <i>not</i> enclosed (e.g., with drywall)	Builder-W 4.5