ENERGY STAR Single-Family New Homes
National Water Mgmt. System Builder Reqs.¹, Version 3 / 3.1 / 3.2 (Rev. 12)

1. Water-Managed Site and Foundation

1.1 Impermeable surfaces (e.g., patio, porch, or plaza slabs; sidewalks; ramps; driveways) sloped ≥ 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less.²

1.2 Back-fill has been tamped, and permeable surfaces sloped ≥ 0.5 in. per ft. away from home for ≥ 10 ft. Alternatives in Footnote.³

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.⁴, ⁵, ⁶

1.4 Capillary break at all crawlspace floors using one of the following options: ⁴, ⁵, ⁶
   1.4.1 Concrete slab over one of the following materials:
      1.4.1a ≥ 6 mil polyethylene sheeting, lapped 6-12 in; OR,
      1.4.1b ≥ 1 in. extruded polystyrene insulation with taped joints.
   1.4.2 ≥ 6 mil polyethylene sheeting, lapped 6-12 in., & installed using one of the following:
      1.4.2a Lapped up each wall or pier and fastened with furring strips or equivalent; OR,
      1.4.2b Secured in the ground at the perimeter using stakes.

1.5 Exterior surface of below-grade walls of basements & unvented crawlspace finished as follows:
   a) For poured concrete, masonry, & insulated concrete forms, finish with damp-proofing coating.⁷
   b) For wood framed walls, finish with polyethylene and adhesive or other equivalent waterproofing.

1.6 Class 1 vapor retarder not installed on interior side of vapor permeable insulation in exterior below-grade walls.⁸

1.7 Sump pit cover mechanically attached with full gasket seal or equivalent.

1.8 Drain tile installed at 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 ½ to ¾ 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 pit with a pump. If drain tile is on interior side of footing, then channel provided through footing to exterior side.⁹

2. Water-Managed Wall Assembly

2.1 Flashing at bottom of exterior walls, with weep holes included for anchored stone / masonry veneer and weep screed for adhered stone / masonry veneer or stucco cladding, or equivalent drainage system.¹⁰

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 adhered stone / masonry veneer or stucco cladding.¹⁰, ¹¹

2.3 Window and door openings fully flashed.¹²

3. Water-Managed Roof Assembly

3.1 Step and kick-out flashing at all roof-wall intersections, extending ≥ 4 in on wall surface above roof deck and integrated shingle-style with drainage plane above; boot / collar flashing at all roof penetrations.¹³

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. Alternatives & exemptions in Footnote.⁴, ¹⁴, ¹⁵

3.3 Self-adhering polymer-modified bituminous membrane at all valleys & roof deck penetrations.⁴, ¹⁶

3.4 In 2009 IECC Climate Zones 5 & higher, self-adhering polymer-modified bituminous membrane 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.⁴, ¹⁶

4. Water-Managed Building Materials

4.1 Wall-to-wall carpet not installed within 2.5 ft. of toilets, tubs, and showers.

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.¹⁷

4.3 In Warm-Humid climates, Class 1 vapor retarders not installed on the interior side of vapor permeable insulation in above-grade walls, except at shower and tub walls.⁸

4.4 Building materials with visible signs of water damage or mold not installed or allowed to remain.¹⁸

4.5 Framing members & insulation products having high moisture content not enclosed (e.g., with drywall).¹⁹

4.6 For each condensate-producing HVAC component, corrosion-resistant drain pan (e.g., galvanized steel, plastic) included that drains to a conspicuous point of disposal in case of blockage. Backflow prevention valve included if connected to a shared drainage system.

Footnotes:
1. These requirements are designed to improve moisture control in homes. However, these features alone cannot prevent all moisture problems. For example, leaky pipes or overflowing baths can lead to moisture issues and negatively impact the performance of the home.
2. The term ‘Rater’ refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater or Approved Inspector, as defined by ANSI / RESNET / ICC 301, or an equivalent designation as determined by a Home Certification...
17. In addition to cement board, materials that have been evaluated by ICC-ES per AC 115 may also be used to meet this requirement. Monolithic
16. 
14. The assessment of whether the soil is expansive or collapsible shall be completed by a certified hydrologist, soil scientist, or engineer.
13. Intersecting wall siding shall terminate 1 in. above the roof or higher, per manufacturer's recommendations. Continuous flashing shall be installed
12. Apply pan flashing over the rough sill framing, inclusive of the corners of the sill framing; side flashing that extends over pan flashing; and top
11. The following materials are typically ≤ 0.1 perm and shall not be used on the interior side of vapor permeable insulation in above-
10. The 2009 IRC defines Class I vapor retarders as a material or assembly with a rating of ≤ 0.1 perm, using the desiccant method with Proc. A of
9. Alternatively, either a drain tile that is pre-wrapped with a fabric filter or a Composite Foundation Drainage System (CFDS) that has been
8. The assessment of whether the soil is expansive or collapsible shall be completed by a certified hydrologist, soil scientist, or engineer. 
7. Interior surface of an existing below-grade wall (e.g., in a home undergoing a gut rehab.) listed in Item 1.5a is permitted to be finished by:
- Installing a continuous and sealed drainage plane, capillary break, Class I Vapor Retarder (per Footnote 8) and air barrier that terminates into a foundation drainage system as specified in Item 1.8; OR
- If a drain tile is not required as specified in Footnote 9, adhering a capillary break and Class I Vapor Retarder (per Footnote 8) directly to the wall with the edges taped/sealed to make it continuous.

Note that no alternative compliance option is provided for existing below-grade wood-framed walls in Item 1.5b.
8. Not required in Dry (B) climates as shown in 2009 IECC Figure 301.1 and Table 301.1. 
7. Not required for raised pier foundations with no walls. To earn the ENERGY STAR, EPA recommends, but does not require, that radon-resistant
6. As an alternative, any applicable option in 2009 IRC Section R905.2.8.2 is permitted to be used to meet Item 3.3 and any option in 2009 IRC
5. The tub and shower enclosures (e.g., fiberglass with no seams) are exempt from this backing material requirement unless required by the manufacturer. Paper-faced backerboard may be used behind monolithic enclosures or vapor retarders that have been evaluated by ICC-ES per AC 115, and then only if it meets ASTM mold-resistant standards ASTM D3273 or ASTM D6329. 
4. Not required in Dry (B) climates as shown in 2009 IECC Figure 301.1 and Table 301.1. 
3. Swales or drains designed to carry water from foundation are permitted to be provided as an alternative to the slope requirements for any home, 
2. Wherever the requirements of 2009 IECC Table 306.4.4 are not satisfied due to the presence of expansible soils, soil that is not effectively stabilized, or any other reason, a vapor retarder shall be installed above the foundation and extend to existing wall assemblies with adhered or anchored stone / masonry veneers. 
1. The assessment of whether the soil is expansive or collapsible shall be completed by a certified hydrologist, soil scientist, or engineer. 

Note that no alternative compliance option is provided for existing below-grade wood-framed walls in Item 1.5b.
8. The 2009 IRC defines Class I vapor retarders as a material or assembly with a rating of ≤ 0.1 perm, using the desiccant method with Proc. A of 
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