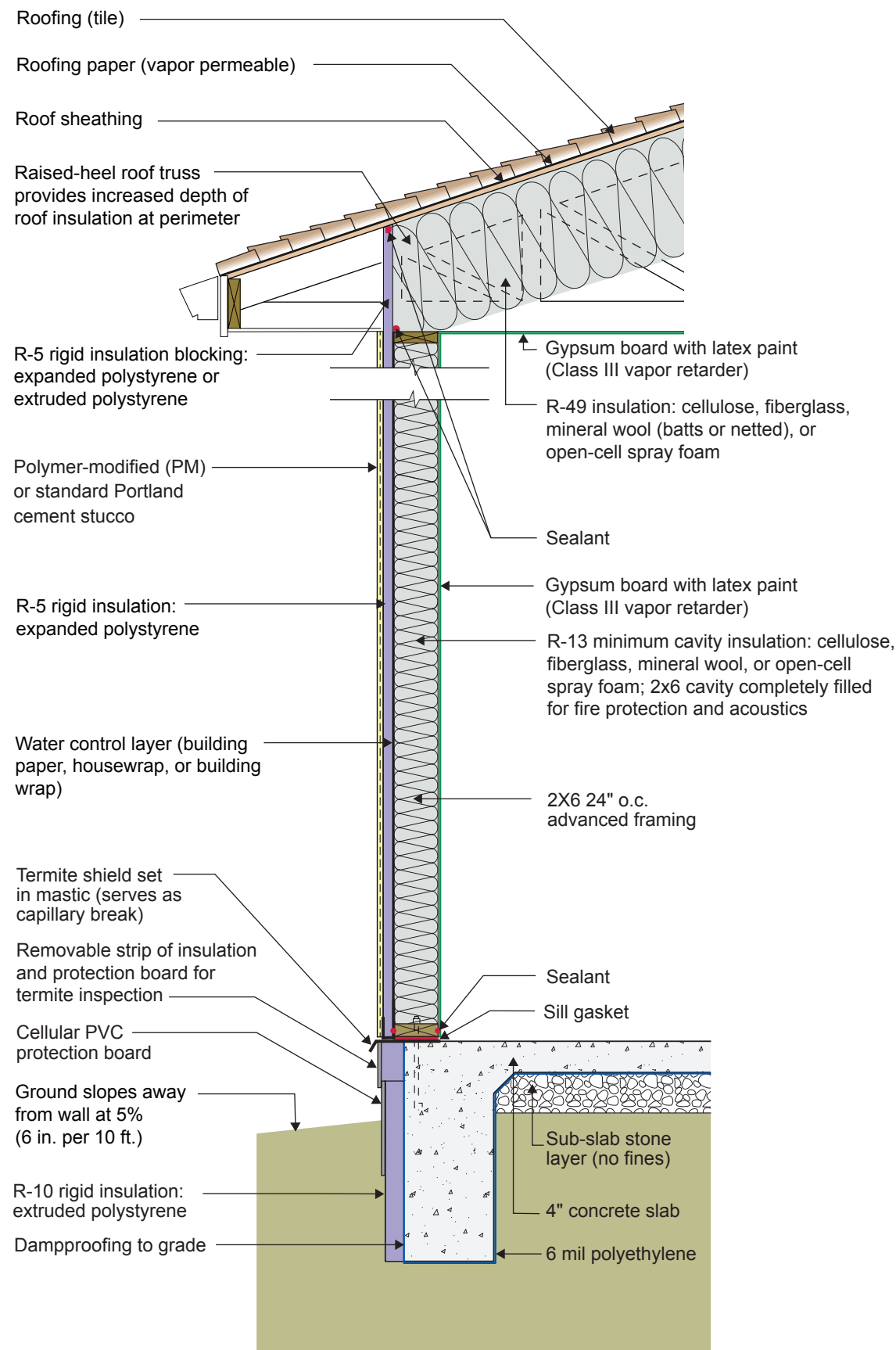


2021 IECC Climate Zone 2A: Unvented Attic, 2x6 Wall, Monolithic Slab on Grade



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- The attic insulation in this unvented attic is located on the underside of the roof sheathing. With tile roofing and vapor-permeable roofing paper, no venting or vapor diffusion ports are required for this roof assembly. If the roofing material were shingles, vapor diffusion ports would be needed. Unvented attics are more resistant to wind uplift under hurricane conditions.
- The water control layer in the wall assembly is installed behind the rigid insulation. Drainage occurs between the water control layer and the back side of the rigid insulation.
- The stucco layer should not be extended into the ground in order to control wicking and insect entry.
- The wood frame wall is framed with 2x6 24" o.c. advanced framing as it uses less board footage (volume of wood framing) than standard 2x4 16" o.c. framing and therefore is less expensive in material cost. It is also less expensive in labor (25% fewer framing members) and is faster to assemble. Although the code allows for 2x4 framing and lower R-value cavity insulation, the use of advanced framing and the associated cost savings more than offset the increase in the cost of cavity insulation (this of course depends on relative price fluctuations in labor and materials).
- The purpose of the rigid foam insulation on the exterior of the wall is to resist inward vapor drive from the absorptive stucco cladding. This wall has no structural sheathing. Instead, it has metal bracing (not shown) for racking resistance.
- Although the minimum R-value of the insulation in this wall is R-13 per IECC, fire code may require the entire cavity to be filled, likely resulting in a higher R-value for a 2x6 wall.
- A class III vapor retarder (latex paint) is used on the interior surface of the walls and ceiling instead of a vapor barrier. This allows drying to the interior. Avoid vinyl wallpaper and oil-based paint or coatings in Climate Zone 2. These wall coverings are vapor impermeable and increase the risk of condensation within the wall.
- The rigid insulation on the exterior of the monolithic slab has a removable strip to facilitate termite inspection. The 2021 IECC does not call for rigid insulation at this location for this climate zone – it is recommended here for comfort reasons.
- The entire monolithic concrete slab should have a polyethylene vapor barrier wrapping the underside of the slab and footing to control capillary uptake. The polyethylene should extend upward from the bottom of the footing to grade on the exterior.