2018 IECC Rim Joist Requirements

Requirement:

2018 IECC Table R402.4.1.1

- Rim joists shall include the air barrier.
- Rim joists shall be insulated.

2021 IECC Table R402.4.1.1

- Rim joists shall include an exterior air barrier.
- The junctions of the rim board to the sill plate and the rim board and the subfloor shall be air sealed.
- Rim joists shall be insulated so that the insulation maintains permanent contact with the exterior rim board.

Translated:

- There is an exception in the IECC, meaning that there is no requirement that the air permeable insulation at the basement rim joist, or the rim joist between floors, be enclosed on the interior/conditioned side.
- Therefore, the exterior side air barrier must be rock solid. In the 2018 it is not as clear as in the 2021 which is why the 2021 language is included above. As a side the rim joist is one of the leakiest assemblies in a home.
- To create an airtight air barrier at the rim joist, the sill plat to the foundation connection must be sealed.
- From a code and building science perspective sill seal under the sill plate is a capillary break and is not considered an air barrier. The top of concrete foundation walls is not level or smooth enough for sill seal to gasket that gap adequately. It must be seals.
- In addition, the rim board connection to the sill plate and the rim board connection to the subfloor must be sealed.
- Insulation must be installed so that the insulation maintains permanent contact with the exterior rim board. Insulation must be in contact with the air barrier, the surface it is intended to insulate to function.
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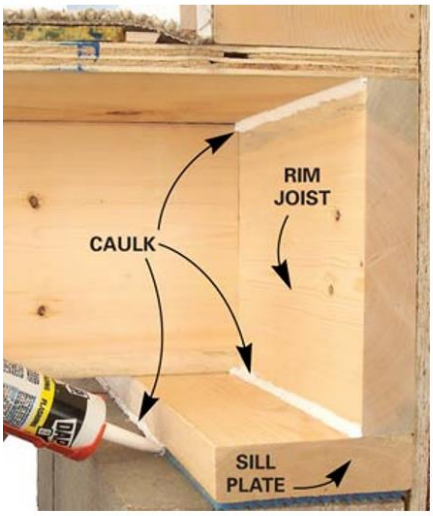
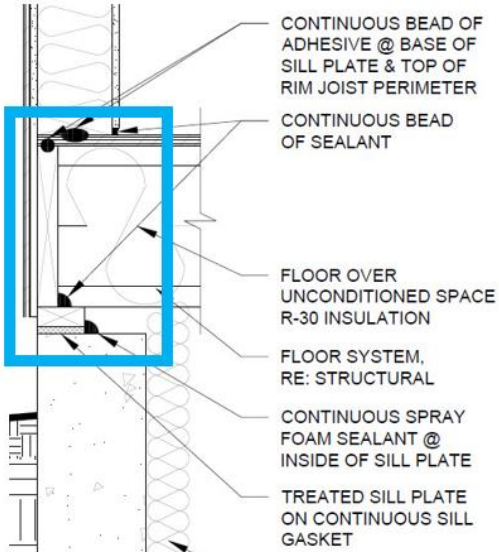
Example Execution of Requirement:



1. Rim Board to Sub Floor
2. Rim Board to Sill Plate
3. Sill Plate to foundation



Correct Installation

Insulation in contact with the rim board

Incorrect Installation

Insulation NOT in contact with the rim board