

Technical Bulletin

Sealing Top Plates of Interior Walls for QII Compliance

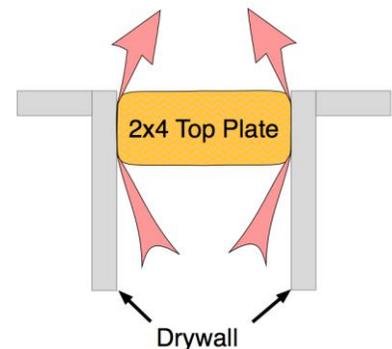
One of the most cost-effective energy upgrades for older homes is to remove all of the old ceiling insulation, seal the ceiling air barrier, and then replace the ceiling insulation. The removal and replacement of the insulation might seem excessive and costly, but not when you realize that insulation is of very little benefit if air is passing through it. Due to the density differences of air at different temperatures, there is a constant pressure against the ceiling air barrier, even on a calm day with no fans running, especially in the winter. Because of this, sealing the ceiling air barrier is critical to good thermal performance of a home.

The easiest and most cost-effective point in time to seal the ceiling air barrier is when the house is being built, which is why it is such an important part of the Quality Insulation Installation (QII) protocols. If you think about all the potential sources of air leaks in a ceiling, what usually comes to mind are penetrations through the drywall, such as light fixtures, HVAC registers, fire sprinklers, exhaust fans, etc. Because framing members (e.g., 2x4s) are far from straight or smooth, an even bigger *potential* source of leakage is where the drywall touches the top plate of every wall in the house. The leakage actually occurs *inside the walls* (see diagram).

Note: This is only an issue where the top plates are adjacent to unconditioned space, such as a vented attic.

Sealing this point of leakage is an important requirement of the QII protocols; unfortunately, it is not as easy as it seems. There are a variety of ways to seal this leakage:

- Stapling a foam gasket to the top plate prior to drywall installation.
- Running a bead of caulk along the top plate prior to drywall installation.
- Applying foam or caulk to the gap from above after drywall installation.



These all have disadvantages and can be challenging to do correctly. Even so, sealing the top plate to the drywall is a very important item that must be done correctly and visually confirmed by the HERS rater. We highly recommend that HERS raters work with the builders to make sure that:

1. It is clear which subcontractor is responsible for this sealing.
2. They decide in advance how this sealing is going to be done.
3. They agree on when and how the visual verification will take place.
4. All parties are perfectly clear on what is expected.

There has been confusion about this requirement due to some imprecise editing of the language in the QII forms. In the 2016 CF2R-ENV-22 Item A13 was very clear in saying, "All top plates of interior and exterior walls are sealed to drywall." When the forms were reorganized for the 2019 code this specific language was inadvertently lost, but make no mistake, **this is still a requirement of the QII protocols**. We have confirmed this with CEC staff. For more information about QII, download the FREE CalCERTS Quality Insulation Installation (QII) Handbook [here](#).

Additional questions about HERS verification of QII may be directed to CalCERTS support: support@calcerts.com or (916) 985-3400, ext.*

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