

Technical Bulletin: Garage Air Sealing & Insulation

Residential New Construction Program



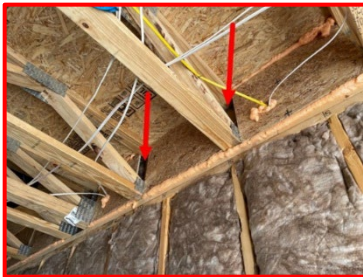
BUILDING A SMARTER ENERGY FUTURESM

Proper installation of insulation and air barriers in garages during the rough stage will help improve blower door performance at final testing and help builders get their maximum possible rebate in the Duke Energy RNC Program. This month's technical bulletin will serve as a guide for raters of what to look for in the garage during rough inspections.

Air Barrier and Air Sealing

Air barrier and air sealing items in garages raters should inspect include:

- **Garage Band** – Check that an air barrier is installed above garage walls to separate the unconditioned garage air from the home. Ensure the band is air sealed around the perimeter as well as any duct, plumbing, or electrical penetrations.
- **Finished room over garage (FROG) Rim Joists** – When rooms are placed above the garage, an air barrier needs to be placed below the kneewall. The air barrier should cover the full height from the bottom of the kneewall to the bottom of floor joists.
- **Finished room over garage (FROG) Extensions** – This is less common but some floors above garages have a small section that sticks out past the LVL beam. Ensure this is blocked and air sealed.
- **Water Heater Platform** – Check for an air barrier at the chase beneath the water heater platform.
- **Chases Under Stairs** – When the stairs are along the garage wall, check that an air barrier is installed and air sealed.



An air barrier is present at the garage band, but the perimeter is not air sealed.



Kneewall rim joist above the garage is missing an air barrier.



The floor above the garage juts out past the LVL beam and is missing an air barrier at the ends and side.



Chase under the water heater platform is missing an air barrier.

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Insulation installation

When checking the insulation at the floor above the garage make sure to verify the insulations R-Value, grading, and the locations of the insulation. The insulation items to inspect in the garage are below.

- **Rim Joists** – Inspect how the insulation is installed at the rim joist. Batt insulation that is rolled into the rim joist causes compression and is considered Grade II.
- **Double Batted Insulation** – Batts that are stacked without folding can align with grade I installation, but folding batts to double the thickness and increase R-Value is considered Grade II. If the insulation appears to be double batted, gently prod the insulation to verify.
- **Location of thermal barrier** – The following covers the two potential thermal barriers raters should verify.

Subfloor thermal barrier



Insulation is installed with contact to the above subfloor. Tiger teeth support the insulation but are often sources of compression in the insulation.

The rim joist insulation should be in line with the walls separating the garage space with conditioned space.

Drywall ceiling thermal Barrier



Insulation is installed similar to ceilings with contact to the drywall. Insulation should be notched or split around light boxes, electrical wires, and ducts.

The rim joist insulation should be in line with the surfaces that terminate the floor at unconditioned space. This is often the exterior walls of the garage.

Please contact us at DERNC@icfprogram.com with questions or for additional information.