

Technical Bulletin: Most Common Issues

Residential New Construction Program

BUILDING A SMARTER ENERGY FUTURE™

Over the past year the RNC Program has compiled a list of the most common issues found at pre-drywall quality assurance inspections. This technical bulletin outlines those issues along with tips to address them during rater inspections.

Common issues found during inspections are grouped into the categories below:

- Insulation Issues: 45%
- Air sealing issues: 29%
- Blocking or air barrier issues: 26%

Top issues by category		
Blocking or Air barrier issues	Air sealing issues	Insulation issues
Kneewalls	Core/Common wall air sealing	Insulation is not split around obstructions
Chases	Drywall to top plate air sealing	Insulation has compressions greater than 3/4"
Dropped ceilings or soffits	Kneewalls	Insulation not in contact with the thermal plane
Double walls	Dropped ceilings or soffits	Missing insulation
Walls behind tubs	Sill plate to slab/subfloor air sealing	

Blocking or air barrier issues:

Air barriers were the most uncommon issue-type found throughout the year but have one of the largest impacts on blower doors. It is important to remember the following when inspecting air barriers.

- All wall cavities require six-sided encapsulation but remember to pay close attention to kneewalls as they separate attic and conditioned space.
- Air barriers are often missed in dropped ceilings due to complex home designs. Remember to move insulation aside to visually inspect for proper air barriers.
- The best air barriers are rigid air barriers such as Thermoply and wood. Cardboard is ineffective as an air barrier and is not recommended.



Kneewall missing an air barrier



Double wall missing air barriers



Dropped ceiling missing an air barrier at the top



Tub missing an air barrier

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Air sealing Issues:

Air sealing was the second most commonly found issue-type. All air barriers should be fully sealed with caulk, foam, or tape. The following items are best to keep in mind when inspecting air sealing.

- Townhome core walls are notorious for poor air sealing. When inspecting townhomes, remember the following.
 - Ensure each floor has core walls fully sealed at the top plates, bottom plates, and side studs.
 - Recommend that the builder tape exterior walls to the core walls before installing housewrap.
 - For difficult to seal locations, recommend adding blocking to fill gaps and air seal around the blocking.
- Sill seal for top plate gasketing should be fastened above each stud (12"-16"). It is also best practice to cut sill seal around corners with limited overlapping areas.



An unsealed kneewall



Sill seal installed on top plates with fasteners spaced more than 12"-16"



Dropped ceiling framing not sealed to top plates



Core wall not sealed to top plates

Insulation Issues:

Insulation-related items are the most common issues for homes and can account for large energy savings impacts. Tips for inspection insulation are as follows.

- Remember to temporarily move insulation aside to ensure it is cut to fit around wires, termite systems, 2x4 blocks, and other obstructions.
- Insulation should be in substantial contact with thermal barriers such as drywalls and subfloors.
- Pull back insulation to ensure the insulation isn't rolled or folded into cavities.



Insulation installed with compressions



Ceiling insulation not split around obstructions or installed to have substantial contact with drywall



Insulation not split around termite obstructions



Insulation not installed to have substantial contact with drywall