Technical Advisory
Maintaining Roof-to-Wall Air Barrier Continuity During Reroofing – 26-2025

TITLE: Maintaining Roof-to-Wall Air Barrier Continuity During Reroofing

DESIGNATION: TA-26-2025

OBJECTIVE: To provide commentary to determine and maintain air barrier continuity at roof-to-wall interfaces during reroofing.

BACKGROUND

Air barriers have become an increasingly important feature in providing better building enclosure performance as demands for improved energy performance and occupant comfort have increased.

Wisconsin became the first US state to require air barriers in its building codes, establishing the requirement in 2001. Wisconsin was followed by Massachusetts later that year. ASHRAE added air barrier requirements in the 2009 version of Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*.[1] *The International Energy Conservation Code* added air barrier requirements in the 2012 version.[2]

In Canada, resistance to air movement through walls and roofs was identified as an important building enclosure function in the 1960s,[3] and became part of the *National Building Code of Canada* in its 1985 edition.[4]

It is critical during building construction to maintain continuity of the air barrier system across the entire building enclosure. Each component that serves a role in resisting air infiltration or air exfiltration must be interconnected to prevent air leakage at joints or transitions between materials, components, assemblies, and systems. Uncontrolled air infiltration or exfiltration through the building enclosure can lead to the introduction of moisture into the roof or wall assemblies. In severe cases, metal components can corrode, there can be a decrease in the energy efficiency of the building, and/or air quality issues can develop.

One of the more challenging locations to ensure air barrier continuity is the roof-to-wall transition. Multiple factors contribute to this challenge, including but not limited to

- multiple different trades installing/applying a variety of materials and building components at this location,
- potential for compatibility issues due to different manufacturers or chemical compositions of the roof and air barrier components, and
- the wide range of various roof and wall configurations and constructions.

With air barriers being incorporated into building codes since the early 2000s (late 1980s in Canada) and with typical service life of membrane roofs varying from 15 to 30 years, reroofing projects on buildings that have air barriers incorporated into the building enclosure are becoming more common. To maintain air barrier continuity, the air barrier of the reroofing assembly will need to properly tie into the existing exterior wall air barrier, which may require removal of portions of the facade to facilitate proper detailing.

DISCUSSION

The presence of air barriers impacts reroofing design, specifically when maintaining continuity of the air barrier at roof-to-wall interfaces.

Creating the means to connect the roof and wall air barrier control layer requires project specific detailing and may require removal of additional materials at the roof edge or facade assemblies. The roof-to-wall air barrier connection is commonly located behind exterior wall veneer or cladding components, at bottom side of wood nailers along perimeter roofs, or located beneath parapet walls supported by the roof deck.

Additionally, penetrations such as through-wall scuppers and interfaces between the roof and higher walls are other locations where continuity of the air barrier may be encountered and must be addressed during roof replacement projects.

RECOMMENDATIONS

The air barrier control layer between the roof and exterior wall assemblies during reroofing projects should be continuous. Review of available design drawings, previously approved submittals, previously approved shop drawings, recent manufacturer warranties, and investigative openings can help in determining appropriate details that maintain or create a continuous air control layer. Reroofing design documents should adequately detail the tie-ins between the air barriers at the roof and wall assembly interfaces to ensure that air barrier continuity is being achieved. The scope of a reroofing project may have to include replacement and/or modification of the roof to wall interface components to meet this requirement.

REFERENCES

1. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE). 2009. *Energy Standard for Buildings Except Low-Rise Residential Buildings.* ASHRAE 90.1, Atlanta, GA: ASHRAE.
2. International Code Council (ICC). 2012. *International Energy Conservation Code*. Country Club Hills, IL: ICC.
3. National Research Council of Canada (NRC). 1963. Canadian Building Digest # 48, N. Hutcheon, Ottawa, ON: NRC.
4. NRC. 1985. *National Building Code of Canada*. Ottawa, ON: NRC.