U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

BUILDING TECHNOLOGIES PROGRAM

BUILDING AMERICA
ENERGY PERFORMANCE BRIEF

Improving Existing Homes: Keeping Wind-Blown Rain Out of Soffits

Wind-blown rain can enter attics through soffit vents during storms.

When to Do This

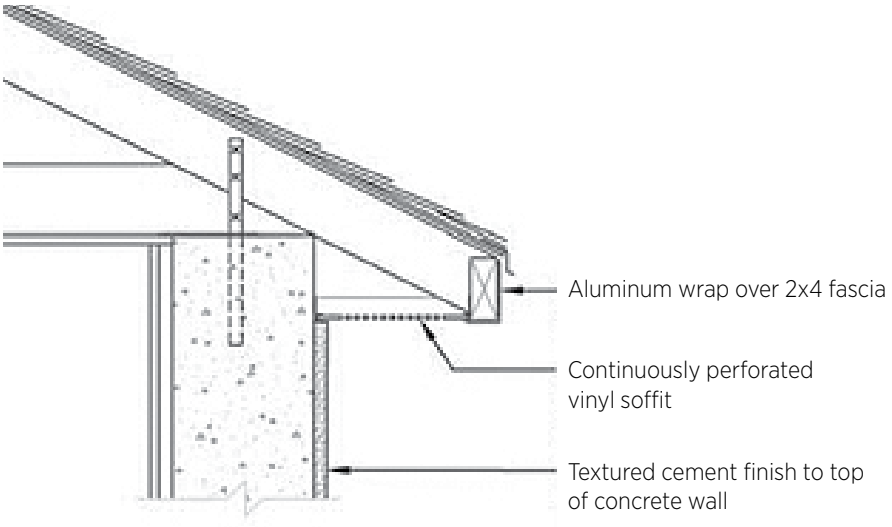
When wind-blown rain intrusion is a problem. When replacing a roof.

Durability & Health

Rain entry into attic soffit vents during high winds can cause structural damage and mold.

In hurricane-prone and high-wind coastal regions, the typical soffit design for homes is susceptible to water intrusion from direct wind pressure, suction on the lee-ward side of the house, and surface tension that draws in water sheeting off the roof that clings to the fascia and soffit.

The soffit detail for vented attics shown here discourages water draining off the roof from coming into the soffit vent openings. The improved eave design has a fascia that is extended one inch below the soffit to form a drip-edge to defeat the rain water's surface tension. The soffit vent has recessed perforations rather than vents that stick down. Additional blocking is also installed to strengthen the soffit.



Typical soffits have a fascia that is level with the bottom of the vent panel and vent perforations that face downward allowing rain water dripping down the fascia to be blown or drawn into the vent openings.

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2009 and 2012 IRC R806.1

Code Requirement for New Construction and Additions

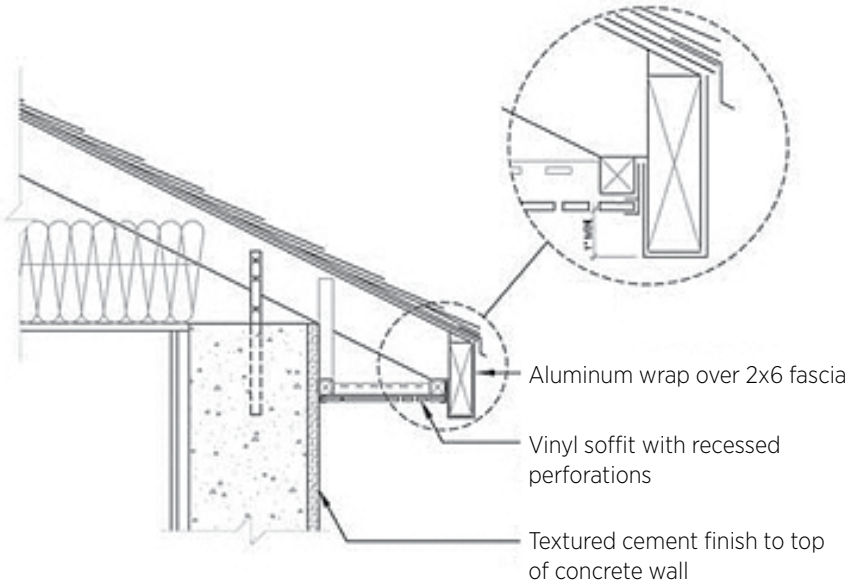
Ventilation Required. Enclosed attics ... shall have cross ventilation for each separate space by ventilating opening protected against the entrance of rain or snow.

References

DOE. 2011. *Building America Best Practices Series, Volume 15: 40% Whole-House Energy Savings in the Hot-Humid Climate*, PNNL-20768, U.S. Department of Energy. www1.eere.energy.gov/buildings/building_america/publications.htm.

Zoeller, William. 2006. "Designing and Building Hurricane-Resistant Homes," prepared by Steven Winter Associates, published in *Home Energy Magazine*, Fall 2006, www.carb-swa.com/articles/in%20the%20news/HomeEnergy_Designing%20and%20Building%20Hurricane%20Resistant%20Homes.pdf.)

How to Prepare a Rain-Resistant Soffit



1. Replace the roof fascia with a fascia that extends one inch further.
2. Wrap aluminum flashing over front of fascia and extend under and up inside surface of fascia.
3. Install additional blocking behind fascia.
4. Replace the soffit vent board with soffit vent panels with recessed perforations.

The fascia was redesigned to extend 1 inch below the soffit to form a drip edge, directing water down and away from the house.

Perforated soffit board product with recessed rather than surface openings was installed to limit water intrusion while encouraging greater air circulation and faster drying within the eave assembly.

For More Information

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