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

BUILDING TECHNOLOGIES PROGRAM

VOLUME 16.

BUILDING AMERICA BEST PRACTICES SERIES

MIXED-HUMID CLIMATE

40% Whole-House Energy Savings in the Mixed-Humid Climate

PREPARED BY

Pacific Northwest National Laboratory
& Oak Ridge National Laboratory

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Building America U.S. Department of Energy

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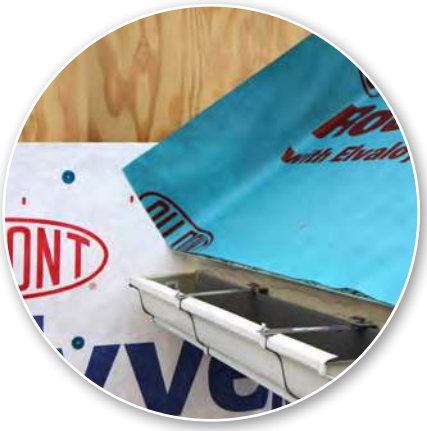
Wall-to-Roof Flashing

Kick-Out Diverter Flashing Details – Housewrap Installed Over OSB or Plywood as Water-Resistive Barrier

Water runoff from rain storms can run along roof-wall intersections and spill over gutters to flow down exterior walls. If flashing is lacking or inadequate, this water runoff can get inside the wall and cause serious damage. Anywhere roof sections adjoin wall sections, side-wall flashing should be used to keep water from entering the walls and kick-out diverters should be used to direct the rain water into rain gutters where it can be carried down and away from the structure. The kick-out flashing should be seamless and sized (as shown in the photos below) to effectively manage large volumes of water run-off associated with torrential rains from a variety of roof pitches, with an appropriate expected service life to avoid premature failures. *(Photos Source: DryFlekt Products, Inc.)*



STEP 1 Apply drip edge and roof underlayment over roof deck. Continue lapping up the sidewall and over the water-resistive barrier (in this case housewrap) a minimum of 6 inches.

STEP 2 Install shingle starter strip at roof eave in accordance with roofing manufacturer's instructions.

- Place seamless one-piece of non-corrosive kick-out diverter flashing as the first piece of step flashing.
- Slide kick-out diverter up roof plane until the starter trough stops at the shingle starter strip.
- The diverter must be flat on the roof and flush to the sidewall.
- Fasten and seal diverter to the roof deck and starter strip. (Do not fasten to the sidewall.)

STEP 3 Place first shingle and next section of sidewall flashing over the up-slope edge of diverter, lapping a minimum of 4 inches over diverter. (Sidewall flashing height requirement should be determined by design professional and local building codes.)

STEP 4 Install remaining sidewall flashing, appropriate counter flashing, and shingles in accordance with manufacturer's instructions.

STEP 5 Apply self-adhesive flashing over top of wall flashing, diverter, and housewrap.

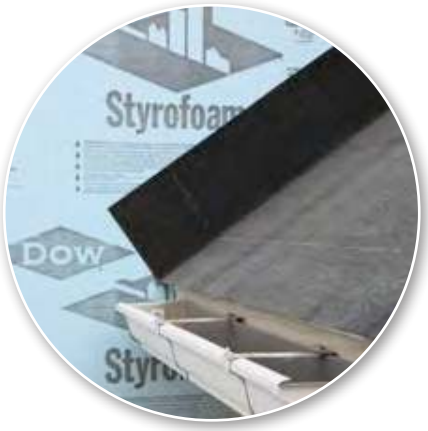
STEP 6 Install house wrap; cut the house wrap to fit over the self-adhesive flashing and sidewall flashing.

STEP 7 Apply siding over housewrap.

Wall-to-Roof Flashing

Kick-Out Diverter Flashing Details - Rigid Foam Insulation Installed as a Water-Resistive Barrier

Water runoff from rain storms can run along roof-wall intersections and spill over gutters to flow down exterior walls. If flashing is lacking or inadequate, this water runoff can get inside the wall and cause serious damage. Anywhere roof sections adjoin wall sections, side-wall flashing should be used to keep water from entering the walls and kick-out diverters should be used to direct the rain water into rain gutters where it can be carried down and away from the structure. The kick-out flashing should be seamless and sized (as shown in the photos below) to effectively manage large volumes of water run-off associated with torrential rains from a variety of roof pitches, with an appropriate expected service life to avoid premature failures. *(Photos Source: DryFlekt Products, Inc.)*



STEP 1 Apply drip edge and roof underlayment over roof deck and continue lapping up the sidewall and over the water-resistive barrier (in this case rigid foam insulation) a minimum of 7 inches.

STEP 2 Install shingle starter strip at roof eave in accordance with roofing manufacturer's instructions.

- Place seamless, one-piece, non-corrosive kick-out diverter flashing as the first piece of step flashing.
- Slide kick-out diverter up roof plane until the starter trough stops at the shingle starter strip.
- Diverter must be flat on the roof and flush to the sidewall.
- Fasten and seal diverter to the roof deck and starter strip. (Do not fasten to the sidewall.)

STEP 3 Place first shingle and next section of sidewall flashing over up-slope edge of diverter, lapping a minimum of 4" over diverter.

(Sidewall flashing height requirement should be determined by design professional and local building codes.)

STEP 4 Install remaining sidewall flashing, appropriate counter flashing and shingles in accordance with manufacturer's instructions.

STEP 5 Apply self adhesive flashing over top of wall flashing, diverter and rigid foam insulation.

STEP 6 Apply construction tape over the self-adhered flashing.

STEP 7 Apply siding over rigid foam insulation.