Avoiding Moisture Accumulation In Walls

IMPORTANCE OF GOOD FLASHING TECHNIQUES

Walls are an integral part of a structure's weather-resistive system. Details in wall design and construction are important in preventing damaging moisture build-up, whether the moisture originates from outside or inside the building. Water can accumulate in walls from two sources: water leaks, and vapor laden air that penetrates the wall to produce condensation. Water from leaks presents the greatest threat of water accumulation in walls.

HOW WATER LEAKS INTO WOOD WALL CONSTRUCTION

Water leaking through the envelop of a structure is the largest contributor to building damage. Leaks are caused by a number of factors, including

- Improper or missing flashing
- Improper installation of weather resistive barriers.
- Poorly designed or executed wall intersections and penetrations.

Wood structures have the ability to absorb, distribute and dissipate small amounts of water ,especially from intermittent sources. The problems arise when there are design or construction errors that allow water into wall cavities at a rate that exceeds the structure's ability to absorb and eliminate the water. Wood construction will perform indefinitely but is subject to failure if exposed to prolonged wetting where the wood moisture content exceeds 19 percent.

The control of water leaks into walls involves proper design, construction and maintenance. Design features such as roof overhangs can provide moisture protection. Proper construction incorporates products like flashing, weather resistant barriers, and caulks with the structural and architectural components in such a way that water is deflected or drained down and away from the wall. Proper maintenance of caulks and paint is necessary for long-term moisture performance of walls.

PREVENTING LEAKS WITH FLASHING

Flashing is used to deflect water and thus prevent leaks around wall intersections, window and door openings, and penetrations. Proper flashing should direct water flow down and away from the interior of the structure to the outside of the wall covering. In every example shown here, the weather resistant barrier laps over the top edge of the flashing. In such a manner, the flashing is part of a whole weather resistive system that is continuously reeducating water flow down and away from the interior of the structure.

WEATHER-RESISTIVE BARRIERS

Weather-resistive barrier materials provide a line of defense for the building envelop against the intrusion of water. The barriers must be installed properly, however, to prevent water leaks into the wall cavity. Proper installation at corners and intersections and incorporation of flashing are particularly important.

The basic principal behind weather-resistive barriers is to provide a continuous drainage plane that sheds moisture down and away from the plane of the structural wall surface. This is accomplished by overlapping successive layers of weather-resistive barrier behind the exterior finish and over the structural sheathing.

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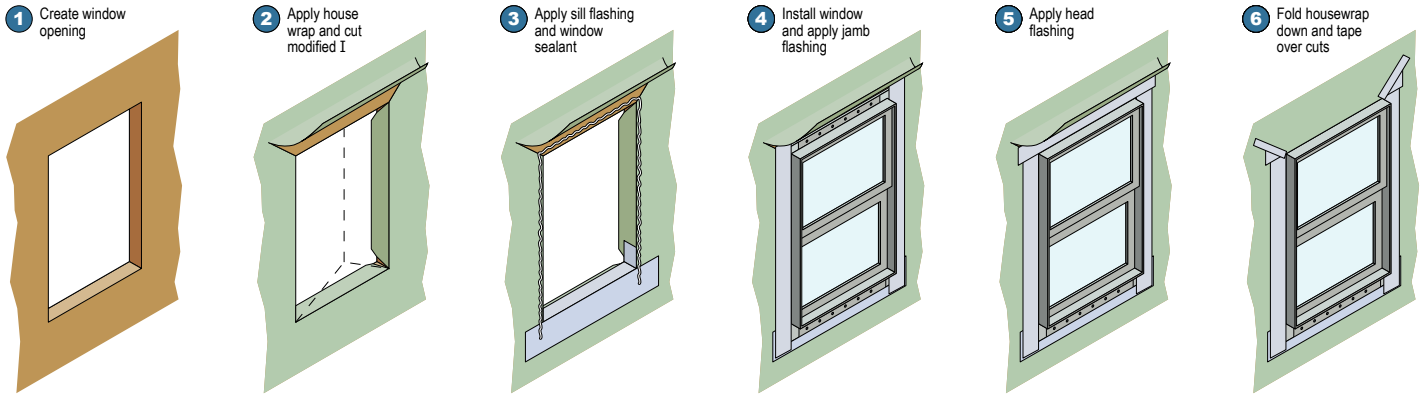
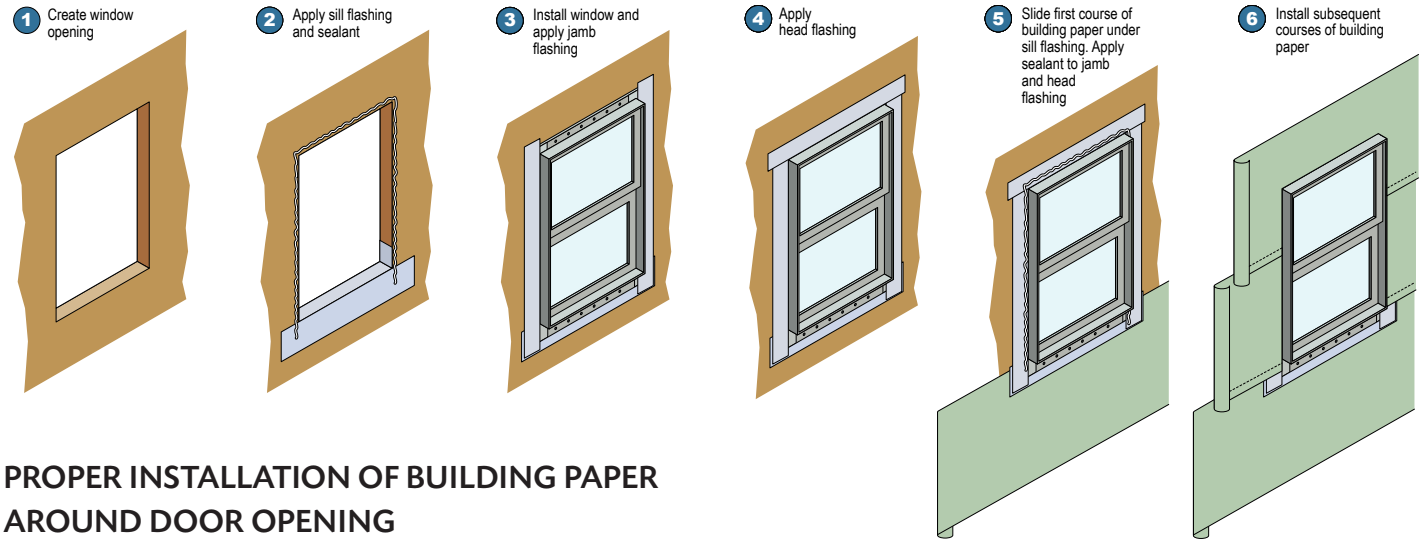
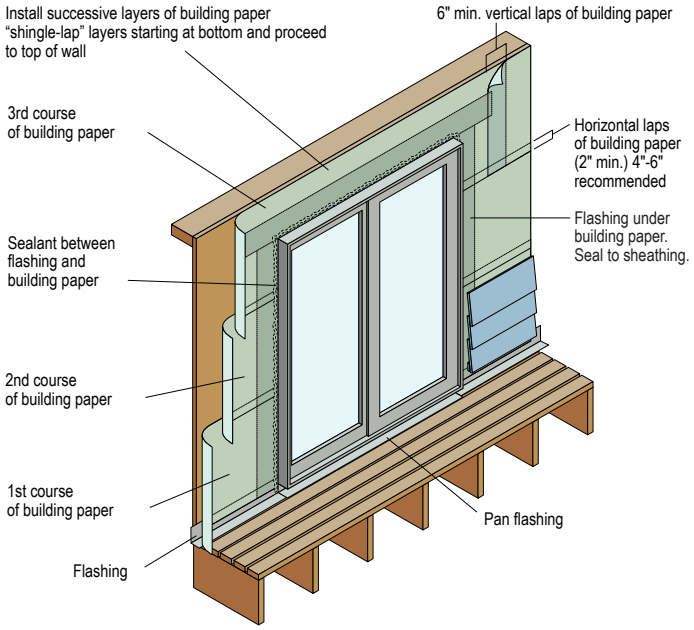
FLASHING WINDOW WHEN USING HOUSE WRAP



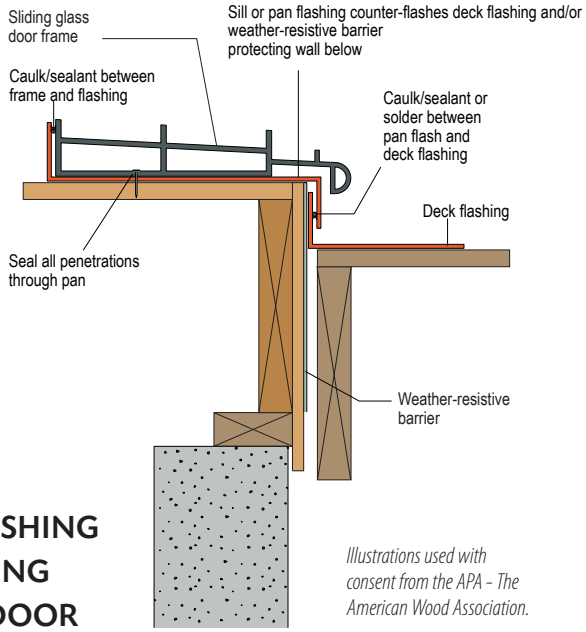
FLASHING WINDOW WHEN USING BUILDING PAPER



PROPER INSTALLATION OF BUILDING PAPER AROUND DOOR OPENING



SILL FLASHING AT SLIDING GLASS DOOR



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