

## PROTECTION FROM PRECIPITATION- RESIDENTIAL OCCUPANCY (Second plane of Protection)

### ONTARIO BUILDING CODE

#### 9.27.3. Second Plane of Protection

##### 9.27.3.2. Sheathing Membrane Material Standard

- (1) Sheathing membranes shall conform to the performance requirements of CAN/CGSB-51.32-M, "Sheathing, Membrane, Breather Type".

##### 9.27.3.3. Required Sheathing Membrane Installation

- (1) Except as provided in Articles 9.27.3.4. to 9.27.3.6., at least one layer of sheathing membrane shall be applied beneath siding, stucco or masonry veneer.
- (2) Sheathing membrane required in Sentence (1) shall be applied so that joints are lapped not less than 100mm (4in).
- (3) Where sheathing membrane required in Sentence (1) is applied horizontally, the upper sheets shall overlap the lower sheets.

##### 9.27.3.4. Insulating Sheathing in Lieu of Sheathing Membrane

- (1) Where non-wood-based rigid exterior insulating sheathing, or exterior insulating sheathing with an integral sheathing membrane is installed, a separate sheathing membrane is not required.
- (2) Where insulating sheathing is installed as provided in Sentence (1),
  - (a) sheathing panels subject to moisture deterioration shall be sealed at all joist, and
  - (b) the joints of sheathing panels not subject to moisture deterioration shall be,
    - (i) sealed at all joints, or
    - (ii) lapped or tongue and groove, and detailed to ensure drainage of water to the exterior.

##### 9.27.3.5. Sheathing Membrane in Lieu of Sheathing

- (1) Except as provided in Article 9.27.3.6., where no sheathing is used, at least 2 layers of sheathing membrane shall be applied beneath the cladding.
- (2) All joints in the sheathing membrane required in Sentence (1) shall occur over framing, and the membrane shall be fastened to the framing with roofing nails or staples spaced not more than 150mm along the edges of the outer layer of sheathing paper.
- (3) Wall sheathing is permitted to be used in lieu of 1 layer of sheathing membrane required in Sentence (1), and the thickness need not conform to Table 9.23.16.2.A.

##### 9.27.3.6. Face Sealed Cladding (see Appendix A)

- (1) Sheathing membrane is permitted to be omitted beneath cladding when the joints in the cladding are formed to effectively prevent the passage of wind and rain in conformance with Sentence (2) or (3), as applicable.
- (2) Cladding consisting of sheets of plywood, hardboard, OSB, waferboard or fibre cement is considered to meet the requirements of Sentence (1), provided the cladding is applied so that,
  - (a) all edges are directly supported by framing, And
  - (b) the vertical joints between adjacent sheets are sealed and,
    - (i) covered with battens
    - (ii) shiplapped, or
    - (iii) otherwise matched to provide weather tight joints, and
  - (c) the horizontal joints between adjacent sheets are sealed and,
    - (iv) shiplapped, or
    - (v) otherwise matched to provide weather tight joints.

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- (3) Metal siding consisting of sheets of metal is considered to meet the requirements of Sentence (1) where the joints between sheets are of the locked-seam type.

### COMMENTARY

Tip #61, we discussed the required components of an exterior wall that acts as a barrier against water ingress. The components of an exterior wall consist of the cladding (first plane of protection) and the sheathing membrane (second plane of protection). In this Builder Tip we are discussing the second plane of protection, which consists of a drainage plane, a sheathing membrane, and associated flashings. these components will dissipate water that may penetrate the cladding.

The sheathing membrane will provide the inner boundary of the second plane of protection. In other than masonry walls, the drainage space in an open rainscreen assembly should be at least 10 mm deep. Drainage holes must be designed in conjunction with the flashing. When this drainage space is reduced or interrupted, the material providing the second plane of protection may need to be upgraded (i.e. provide 2 layers of sheathing membrane.) The building code permits face sealed cladding to be installed without a sheathing membrane. Cladding consisting of sheets of plywood, osb, waferboard and fibre cement is considered to be face sealed claddings if the joints are supported and sealed (i.e. sealed and shiplapped, battens etc.). Metal siding with joints of the locked seam type are also exempt from the requirements of a sheathing membrane installation.

