

## Wall Air Barrier Reference Sheet

# Sealed Sheathing Membrane

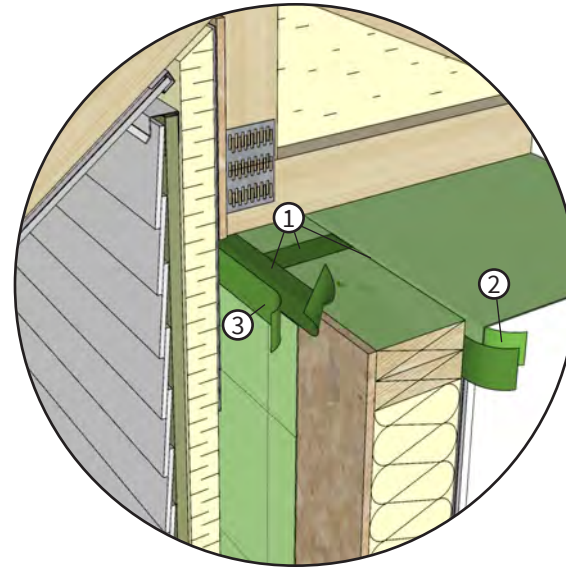
This air barrier reference sheet is meant to help with the design and installation of the sealed sheathing membrane wall air barrier system. The details shown here provide an overview of the steps that can be taken to make the commonly used wall sheathing membrane airtight, as part of an overall effort to achieve the whole-building airtightness level as required by the City of Vancouver or the BC Energy Step Code. This wall air barrier system uses an airtight sheathing membrane, attached to the exterior sheathing with fasteners, washers, and tape. Joints, penetrations, and laps are made airtight using sealant, tape, and self-adhered membrane strips. Care must be taken to ensure that the sheathing membrane is adequately attached to the building during construction and supported by strapping, cladding or insulation, to avoid damage.

### Materials List

- › Mechanically attached sheathing membrane
- › Self-adhered flashing membrane tape
- › Washer-head sheathing membrane fasteners
- › Sheathing membrane tape and high performance sheathing tape
- › Construction sealant (compatible with sheathing membrane)

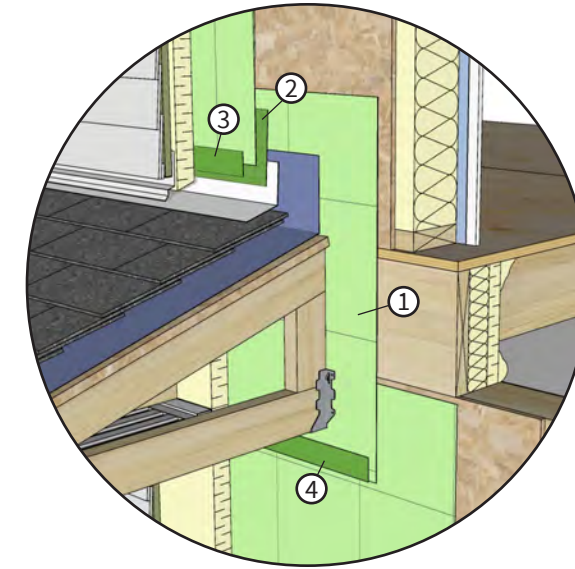
### Key Considerations

- › **Confirm products and methods are acceptable by the authority having jurisdiction.**
- › The most important part of designing and building an airtight enclosure is detailing at the interfaces and penetrations.
- › Details should be simple and buildable. Wherever possible, air barrier transitions in wood-frame construction should be designed to allow construction of the primary wood framing before installation of the air barrier.
- › The performance of the air barrier relies on attention being paid to all the little details; small deficiencies have a large impact on overall airtightness.
- › A successful approach to achieving good quality assurance on site is to designate a member of the construction team as the 'air boss', responsible specifically for the construction of the air barrier.
- › The vapour permeability of the exterior insulation and sheathing membrane products in split-insulated wall assemblies must be carefully considered to avoid durability issues.
- › Visit [bchousing.org/research-centre/library](http://bchousing.org/research-centre/library) for more resources and guidance, and consider completing airtightness training, available at [tinyurl.com/BC-airtightness](http://tinyurl.com/BC-airtightness).



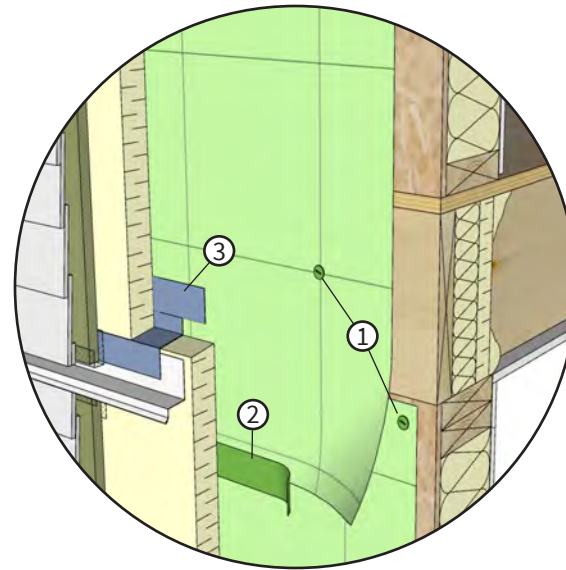
### Top of Wall

- 1 Tape joints in the top plate, between the sheathing and top plate, and the interior face of the top plates, using high performance tape.
- 2 Tape between the ceiling polyethylene membrane and the wall top plate tape.
- 3 Tape the sheathing membrane to the top plate tape.



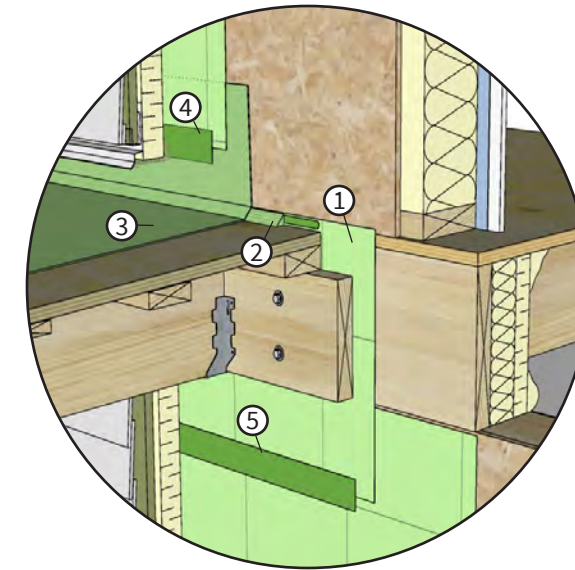
### Canopy Roof

- 1 Pre-strip the sheathing membrane, placed to allow at least 4 in. of membrane exposed at the top edge.
- 2 Apply the self-adhered membrane over the top edge of the roof flashing, adhered to the sheathing membrane pre-strip.
- 3 Lap and tape the sheathing membrane to the self-adhered membrane.
- 4 Tape all laps in the sheathing membrane.



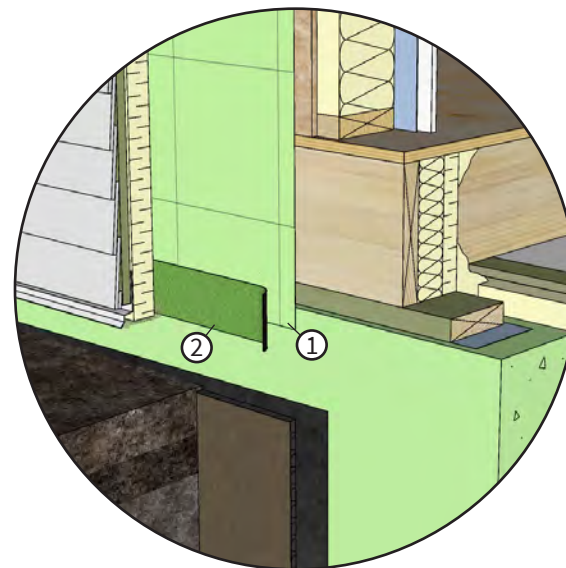
### Rim Joist

- 1 Staple with washers to securely fasten the sheathing membrane.
- 2 Tape all laps in the sheathing membrane.
- 3 Where possible, use self-adhered membrane and tape to interface between the flashing and the sheathing membrane through the exterior insulation. Requirements for through-wall flashings vary, confirm with the authority having jurisdiction.



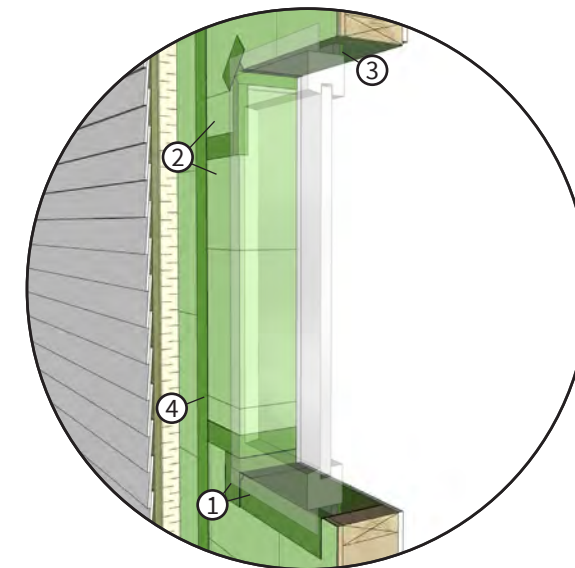
### Supported Balcony

- 1 Pre-strip the sheathing membrane 1 in. above the balcony surface.
- 2 Set the cant strip into sealant at the top edge of the pre-strip sheathing membrane.
- 3 Adhere the balcony membrane to the cant strip and wall sheathing.
- 4 Lap and tape the sheathing membrane over the balcony membrane.
- 5 Tape all laps in the sheathing membrane.



### Base of Wall

- 1 Lap the sheathing membrane over the concrete wall.
- 2 Terminate the sheathing membrane with self-adhered flashing membrane tape adhered to the concrete.



### Flange Window

- 1 Apply the self-adhered impermeable sill, gusset and jamb membranes over the sill sheathing membrane pre-strip.
- 2 Install the jamb and head pre-strip sheathing membrane, with tape at all laps.
- 3 Install the window with a sufficient gap around interior perimeter for backer-rod and sealant.
- 4 Install the field sheathing membrane. Tape all laps.