

## Vapor Barrier and Air Barrier Requirements for Electrical and HVAC Components and Plumbing System Penetrations

Purpose of this bulletin is to clarify the code requirements for vapour barrier and air barrier systems where they are penetrated by other building components.

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"This information is provided for convenience only and is not in substitution of applicable District Bylaws or Provincial or Federal Codes or laws. You must satisfy yourself that any existing or proposed construction or other works complies with all Bylaws, Codes or other laws."

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### Background

2012 BC Building Code has been in force since December 20, 2012. Subsequently a Ministerial Order M111 on December 19, 2014 implemented the new energy requirements. Amongst many other requirements, the current Building Code requires that new homes, or substantially renovated homes to be air and vapour tight.

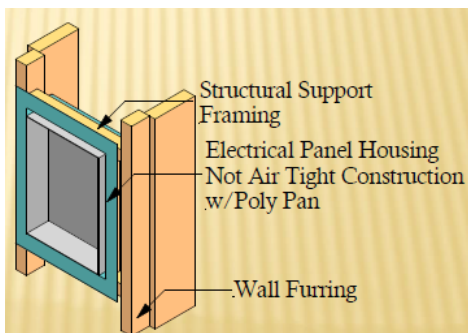
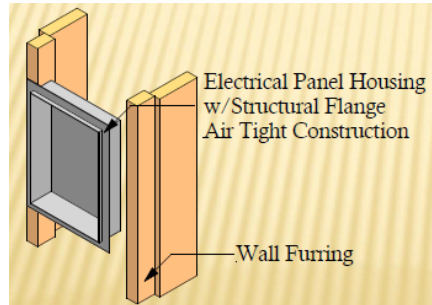
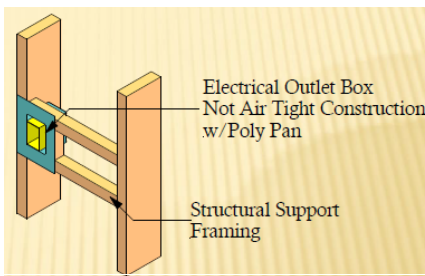
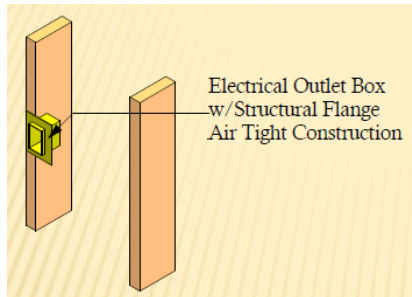
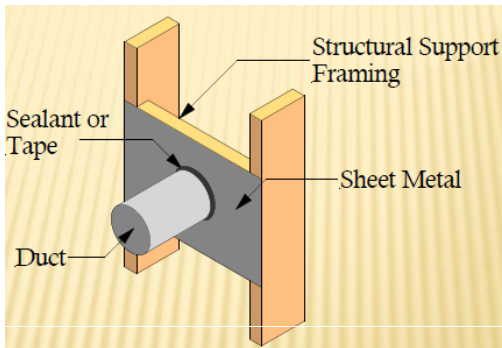
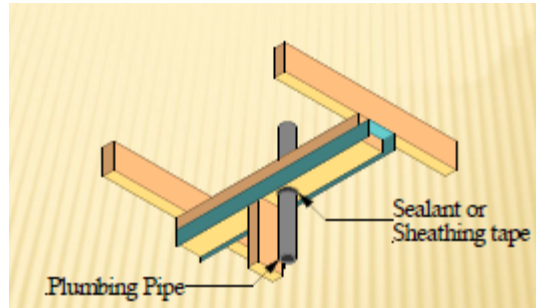
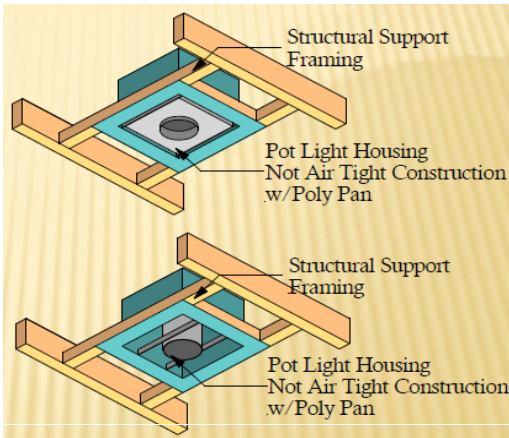
### Air Barrier and Vapour Barrier Requirement

Subsection 9.25.3 and 9.25.4 imposes the requirement of air barrier and vapour barriers systems between heated and unheated spaces in houses. In most wood frame construction homes, the conventional method of complying with both air barrier and vapour systems is achieved by a single membrane such as 6MIL polyethylene sheet. The 6 MIL polyethylene sheet must have air leakage characteristics less than  $0.20L/(s \cdot m^2)$  at 75 Pa, and vapour permanence less than  $60ng/(Pa \cdot s \cdot m^2)$ .

Article 9.36.2.10 requires that where an air barrier or vapour barrier system to be penetrated or joined, it must be appropriately lapped, sealed with compatible sealant (acoustical caulking), and structurally supported.

Therefore, the 6MIL polyethylene must be continuous behind all electrical components such as pot lights, electrical boxes or panel, or HVAC component such as fan housings. Where the 6MIL poly is penetrated or joined by poly pans, it must be structurally supported at the joints and sealed with acoustical caulking. The smaller penetrations such as wires or plumbing pipes up to 1 inch in OD may be caulked and taped.

## Illustrated Examples



Note: For Clarity purposes the insulation, vapour barrier and other components have been

removed in these diagrams.

The above are selected few examples. Any penetration through the air barrier or vapour barrier system must be sealed and supported as required by the code.

The owner or builder may choose alternative methods for compliance where the owner or builder has submitted a Schedule B from a Registered Professional with items 1.20, 1.22 and 1.23 are for design and field review by the registered professional.