



## **ADVISORY BULLETIN**

APRIL 2012

(Updated March 2016)

### **Subject:**

## **Air-tight electrical boxes penetrating an air/vapour barrier**

### **Background:**

The Alberta Building Code 2014 (ABC) sets out technical provisions for the construction of air and vapour barriers in building construction. Included in the Alberta Building Code, found in subsections 9.25.3 for air barriers and 9.25.4 for vapour barriers, are requirements for the continuity to maintain the integrity of the barrier. This includes the installation of electrical outlet boxes in the air and vapour barriers.

In typical situations regarding the construction of exterior walls, it has been common practice to use metal outlet boxes complete with a polyethylene cap, which is sealed to the polyethylene air/vapour barrier. This type of construction continues to be acceptable under the requirements of the ABC.

However, a new method of construction involves the use of an electrical outlet box constructed of polyethylene that is moulded in the shape of the box to provide a seamless enclosure. A foam gasket is provided which seals around the wire once a wire is inserted into the box. Also moulded into the box is a flange on the face which is fitted with an airtight foam gasket. The polyethylene sheet vapour barrier is then compressed between the gypsum board and the flange providing an air tight seal. It also prevents the entry of water vapour into the wall cavity.

Although the box has not been specifically listed or tested as complying with the requirements for an air or vapour barrier, it is constructed of polyethylene, is rigid and is provided with a means to seal the surrounding air/vapour barrier to it.

### **Advisory:**

An electrical outlet box constructed of moulded polyethylene, which includes a sealing flange on the face, is permitted to be used in locations where a combustible outlet box is permitted, provided it is also labelled as complying with the Canadian Standards Association (CSA) for electrical code compliance.

The wire penetrations into the box must be sealed by attached foam gasket or by caulking compatible with the wire being used. When installing the polyethylene sheet vapour barrier, the full width of the gasketed flange must be in contact with the polyethylene and must be sealed by compressing the polyethylene between the gypsum board and the foam seal of the flange and/or compatible caulking on the flange.

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