



Feb. 14, 2018

Western Engineered Containment Ltd.
Leduc, AB.

RE: Suitability of Precidium™ ECS™ as a Radon, Methane and Water Proofing Barrier System

To Whom it May Concern,

As the Manufacturer we can state confidently that Precidium™ ECS™ polyurea membrane will act as an excellent under-slab radon, methane and water proofing barrier.

Precidium™ ECS™ as a Water Proofing Barrier

According to the National Building Code of Canada 2015 (NBC) section 9.25.4.2 (Vapour Barrier Materials) an acceptable barrier must meet a water vapour permeance of 60 ng/Pa.s.m². ECS has a permeance that exceeds this at 57 ng/Pa.s.m². ECS also meets or exceeds all other material requirements as a water proofing barrier under this section of the code.

Precidium™ ECS™ as a Radon and Methane Barrier

According to the Government of Canada, radon gas enters a building when outside air pulled into the building carries radon gas in with it. Methane gas enters in a similar manner but often builds up in greater concentrations than the trace element radon so enters more independently. An ECS membrane meets and exceeds the requirements of the NBC section 9.25.3.3 (Air Barrier Systems) both in terms of providing an impermeable barrier to air, and the ability to stretch in response to dynamic forces. ECS has been tested for barrier properties to methane, a smaller gas molecule than radon. No transmission was detected over 7 days with a pressure differential of 15 psi across the membrane.

Precidium™ ECS™ as a Seamless and Durable Barrier to all Soil Gas and Water Vapour

The Federal Government also clearly identifies the major source of water vapour and air/radon/methane gas entry as gaps in the barrier system. These would be caused by seams, attachments to foundation walls, and sealing around penetrations through the barrier. In sheet products sealing these problem areas are all done with tape. Holes, thin spots and other damage caused to the barrier primarily during construction also are a major source of leaks.

PRECIDIUM™ & SafeCoat® Protective Coatings

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Quantum Chemical

ECS is a spray applied elastomer which is installed without seams, and bonds permanently and in an air tight fashion to concrete structures, plastic or metal penetrations. In tests, the bond strength of ECS to concrete exceeds the tensile strength of the concrete forming a truly permanent bond.

ECS combines unique elastomeric elongation (280%) and tensile strength properties (2800 psi) without physical deformation. This makes it dramatically more durable and less susceptible to damage due to rough handling when compared to polyethylene sheet products or other liquid membranes available on the marketplace. ECS deforms elastically, returning almost fully to original dimensions when external stress is removed.

Summary

As the manufacturer of Precidium™ ECS™ spray applied polyurea we would recommend it for use as a water proofing, radon and methane barrier.

Sincerely,

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