**PAPER TITLE**
Evaluation of an Interior Air Barrier System with Dynamic Water Vapour Control in North American Climates

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**ABSTRACT**

A unique technical guide was developed to evaluate the performance characteristics of an interior air barrier system having dynamic water vapour control. Small and large-scale physical tests along with hygrothermal analysis were performed to investigate the engineered polymer membrane for air tightness, cavity condensation control and durability. Environmental conditions were simulated in various North American climate zones in order to predict the acceptability of the system as a dynamic interior vapour control layer and air barrier system.

The author will describe the test procedures outlined by the Canadian Construction Materials Centre (CCMC Master Format Number 07272) and the American Society for Testing and Materials (ASTM E 2357) used to evaluate the interior air barrier system for air leakage under varied air pressure differential cycles in a large-scale laboratory chamber. The material's physical properties will be presented before and after accelerated ageing and compared to more traditional materials. In addition, a detailed hygrothermal analysis over several North American climate zones will be graphically compared and discussed.