

Multiple Functions of Membranes and other Layers in Enclosure Systems

ABSTRACT

Membranes in walls are often sold and specified for a single purpose (such as vapor control, drainage plane, air flow control) and assumed to solely perform this function. In reality membranes often fulfill a number of diverse functions and perform in concert with other layers and materials in the enclosure assembly.

This presentation begins with an overview of typical membrane functional classifications and available products used to meet these needs. It then discusses in some detail the manner in which membranes perform multiple functions and how the performance is strongly dependent on other components within an assembly. Finally, performance problems and outright failure caused by a misunderstanding of the complex multi-functional and inter-related behavioral aspects of membranes will be described.

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He has broad experience in the building industry, having been involved in the design, construction, repair and restoration of buildings in Canada, the United States, Europe, Asia, and the Caribbean. His building science expertise has been applied to moldy roofs, failed masonry, EIFS cladding, leaky basements, rotting crawlspaces and attics, historical retrofits, building product development, and litigation support for buildings as diverse as commercial office towers, manufactured housing, and sustainable strawbale homes. Dr Straube has consulted to many building product manufacturers, several government agencies (NRC/IRC, NRCan, CMHC, DOE, EPA, ORNL), and a range of consultants and building owners.

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