

Vapor Permeance Chart

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Building Science Corporation

Abstract:

Good design and practice involve controlling the wetting of building assemblies from both the exterior and interior and different climates require different approaches. This chart lists some common vapor permeance characteristics.

Vapor Permeance Chart

Vinyl siding	Approximately 40 perms due to the air leakage of the siding joints	Vapor permeable
Wood siding	Approximately 10 perms due to the air leakage of the siding joints	Vapor permeable
Brick veneer	Approximately 40 perms due to air leakage from the "back venting" of the brick veneer	Vapor permeable
Building paper/asphalt impregnated felt	Approximately 30 perms	Vapor permeable
Housewraps	Range between 5 perms and 50 perms	Vapor semi-permeable to vapor permeable
OSB sheathing	Approximately 2 perms	Vapor semi-permeable
Plywood sheathing	Approximately 10 perms	Vapor semi-permeable
Traditional three-coat hard-coat stucco over building paper and OSB or plywood sheathing	Less than 1 perm and greater than 0.1 perm	Vapor semi-impermeable
External Insulation Finish System (EIFS) installed over 1-inch EPS and OSB or plywood or non-paper faced gypsum sheathing	Greater than 1 perm	Vapor semi-permeable
Extruded polystyrene insulation (XPS); less than 1-inch in thickness and unfaced	Greater than 1 perm	Vapor semi-permeable
Extruded polystyrene insulation (XPS); greater than or equal to 1-inch in thickness and unfaced	1 perm or less and greater than 0.1 perm	Vapor semi-impermeable
Extruded polystyrene insulation (XPS); any thickness and faced with polypropylene facings	Less than or equal to 0.1 perm	Vapor impermeable
Extruded polystyrene insulation (XPS); 3/4-inch or less in thickness and faced with perforated polypropylene facings	1 perm or less and greater than 0.1 perm	Vapor semi-impermeable
Expanded polystyrene insulation (EPS); less than 3 inches in thickness and unfaced	Greater than 1 perm	Vapor semi-permeable
Expanded polystyrene insulation (EPS); less than 2 inches in thickness and faced with perforated polypropylene facings	1 perm or less and greater than 0.1 perm	Vapor semi-impermeable
Expanded polystyrene insulation (EPS); any thickness and faced with polypropylene or foil facings	Less than or equal to 0.1 perm	Vapor impermeable
Coated/faced thin profile structural sheathing	1 perm or less and greater than 0.1 perm	Vapor semi-impermeable
Foil-faced isocyanurate; any thickness	Less than or equal to 0.1 perm	Vapor impermeable

About this Report

This information can be found in the *Builder's Guide to Cold Climates*, Building Science Press (www.buildingsciencepress.com).

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