

NEXCEM – MATERIAL PROPERTIES

Property	Value	Units	Test Standard
Dry Density:	500 - 600	kg/m ³	-
Saturated Density:	680 – 800	kg/m ³	-
Porosity:	0.5 – 0.6	-	-
Modulus of Elasticity (Compressive):	1500	MPa	ASTM C513 (Modified)
Minimum Modulus of Rupture (7 day strength):	1.0	MPa	ASTM C293 (Modified)
Minimum Ultimate Compressive Strength:	2.0	MPa	ASTM C513
Minimum Shear Strength:	0.2	MPa	-
Nexcem-Concrete Bond Strength:	0.6	MPa	-
Maximum Thermal Conductance*:	0.083	W / (m•K)	ASTM C177
Heat Capacity	1.5	kJ / (kg•K)	-
Vapour Permeability:	20.5 (dry) - 26.5 (100%RH)	ng / (Pa•s•m)	-
Vapour Permeance:	800 - 1000	ng / (Pa•s•m ²)	-
Liquid Diffusivity**:	0	m ² /s	-
Darcy Coefficient***:	10 ⁻⁹ – 10 ⁻¹⁰	kg / m•s•Pa	-
Freeze-Thaw Resistance:	300	cycles	ASTM C666 (Procedure A)
Wall System Fire Rating:	4	hours	ULC-S101 / ASTM E119
Surface Burning Characteristics			
Smoke Developed Index:	11	-	ASTM E84
Flame Spread Index:	0	-	ASTM E84
Minimum Noise Absorption Coefficient (50mm Thickness):	0.75	NRC	ASTM C423

* ASHRAE 1997 HOF gives $k = 0.072 - 0.077 \text{ W / (m}\cdot\text{K)}$ for density = 400 – 430 kg / m³.

** Liquid Diffusivity is undefined; material experienced no *macroscopic* capillary suction

*** Effectively free draining