

Description	Units	Nexcem Material	Wall System Assembly (with Roxul and concrete filled)									
			8" (R-8)	10" (R-8)	10" (R-14)	12" (R-8)	12" (R-14)	12" (R-22)	14" (R-8)	14" (R-14)	14" (R-22)	14" (R-28)
Thermal Conductivity (k Value for material, λ Value for assembly)	(SI) $\frac{W}{m \cdot K}$ k or λ or $\frac{L}{R}$	0.070	0.134	0.153	0.097	0.167	0.110	0.084	0.187	0.128	0.095	0.073
	(IMP) $\frac{BTU}{hr \cdot ft \cdot ^\circ F}$ k or λ or $\frac{L}{R}$	0.040	0.078	0.089	0.056	0.096	0.064	0.048	0.108	0.074	0.055	0.042
Thermal Transmittance (Effective U Value for wall assembly / system)	(SI) $\frac{W}{m^2 \cdot K}$ $\frac{k}{L}$ or $\frac{\lambda}{L}$		0.660	0.604	0.384	0.546	0.362	0.274	0.526	0.359	0.266	0.204
	(IMP) $\frac{BTU}{hr \cdot ft^2 \cdot ^\circ F}$ $\frac{k}{L}$ or $\frac{\lambda}{L}$		0.116	0.106	0.068	0.096	0.064	0.048	0.093	0.063	0.047	0.036
Thermal Resistance per unit thickness (R-Value per inch or per metre for material and assembly)	(SI) $\frac{m \cdot K}{W}$ $\frac{R}{L}$	14.284	7.461	6.518	10.262	6.005	9.066	11.953	5.343	7.816	10.562	13.753
	(IMP) $\frac{hr \cdot ft^2 \cdot ^\circ F}{BTU \cdot in}$ $\frac{R}{L}$	2.060	1.075	0.940	1.480	0.867	1.308	1.725	0.771	1.129	1.525	1.986
Thermal Resistance (Effective R Value for wall assembly / system)	(SI) $\frac{m^2 \cdot K}{W}$ R or $\frac{1}{U}$		1.515	1.656	2.607	1.832	2.765	3.646	1.902	2.783	3.760	4.896
	(IMP) $\frac{hr \cdot ft^2 \cdot ^\circ F}{BTU}$ R or $\frac{1}{U}$		8.6	9.4	14.8	10.4	15.7	20.7	10.8	15.8	21.4	27.8

Description	Units	Nexcem Material	Wall System Assembly (with Roxul and concrete filled)									
			16" (R-8)	16" (R-14)	16" (R-22)	16" (R-28)	16" (R-36)					
Thermal Conductivity (k Value for material, λ Value for assembly)	(SI) $\frac{W}{m \cdot K}$ k or λ or $\frac{L}{R}$	0.072	0.104	0.079	0.066	0.061	0.049					
	(IMP) $\frac{BTU}{hr \cdot ft \cdot ^\circ F}$ k or λ or $\frac{L}{R}$	0.042	0.060	0.046	0.038	0.035	0.028					
Thermal Transmittance (Effective U Value for wall assembly / system)	(SI) $\frac{W}{m^2 \cdot K}$ $\frac{k}{L}$ or $\frac{\lambda}{L}$		0.512	0.310	0.260	0.200	0.161					
	(IMP) $\frac{BTU}{hr \cdot ft^2 \cdot ^\circ F}$ $\frac{k}{L}$ or $\frac{\lambda}{L}$		0.090	0.055	0.046	0.035	0.028					
Thermal Resistance per unit thickness (R-Value per inch or per metre for material and assembly)	(SI) $\frac{m \cdot K}{W}$ $\frac{R}{L}$	13.868	9.630	12.689	15.116	16.399	20.384					
	(IMP) $\frac{hr \cdot ft^2 \cdot ^\circ F}{BTU \cdot in}$ $\frac{R}{L}$	2.000	1.388	1.830	2.180	2.367	2.942					
Thermal Resistance (Effective R Value for wall assembly / system)	(SI) $\frac{m^2 \cdot K}{W}$ R or $\frac{1}{U}$		1.955	3.223	3.839	5.002	6.217					
	(IMP) $\frac{hr \cdot ft^2 \cdot ^\circ F}{BTU}$ R or $\frac{1}{U}$		11.1	18.3	21.8	28.4	35.3					

Note:

- Assembly values are effective U and R values calculated using finite element thermal modelling (Therm latest version), and based on published and test supported material values for individual components.
- Interior and exterior boundary conditions (air films) as per IEA Task II database