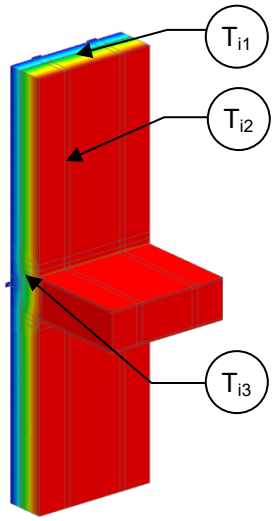
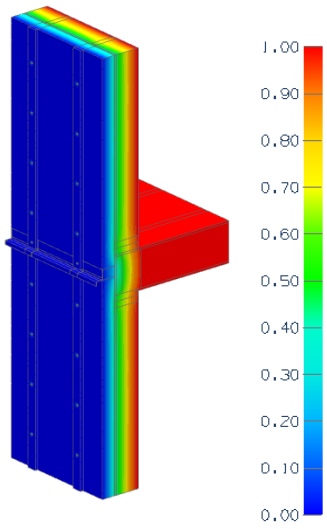
Detail 8.2.2

Exterior and Interior Insulated 2x6 Wood Stud (16” o.c.) Wall Assembly with Wood Strapping Supporting Fiber Cement Board and R-19 Batt Insulation in Stud Cavity - Rim Joist and Floor Intersection without Metal Flashing Bypassing Exterior Insulation



View from Interior



View from Exterior

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-21.5 (3.80 RSI) + exterior insulation
Transmittance / Resistance without Anomaly	U_o, R_o	“clear wall” U- and R-value, without floor
Transmittance / Resistance	U, R	U and R-values for the overall assembly
Surface Temperature Index[1]	T_i	0 = exterior temperature 1 = interior temperature
Linear Transmittance	ψ	Incremental increase in transmittance per linear length of wood framed floor

[1]Assumptions and limitations for surface temperatures identified in ASHRAE 1365-RP

Nominal (1D) vs. Assembly Performance Indicators

Exterior Insulation 1D R-Value (RSI)	R_{1D} $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	R_o $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U_o Btu/ft^2 ·hr ·^oF (W/m^2 K)	R $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U Btu/ft^2 ·hr ·^oF (W/m^2 K)	ψ Btu/ft ·hr·^oF (W/m K)
R-5 (0.88)	R-26.5 (4.68)	R-24.6 (4.32)	0.041 (0.23)	R-21.9 (3.85)	0.046 (0.26)	0.044 (0.076)
R-10 (1.76)	R-31.5 (5.56)	R-29.2 (5.14)	0.034 (0.20)	R-26.1 (4.6)	0.038 (0.22)	0.035 (0.061)
R-15 (2.64)	R-36.5 (6.44)	R-33.6 (5.92)	0.030 (0.17)	R-30.1 (5.3)	0.033 (0.19)	0.031 (0.054)

Temperature Indices

	R5	R10	R15	
T_{i1}	0.25	0.38	0.46	Min T on sheathing, between studs at centre of stud cavity
T_{i2}	0.35	0.47	0.54	Max T on sheathing, at studs between fasteners
T_{i3}	0.33	0.43	0.61	Min T on rim joist, between floor joists