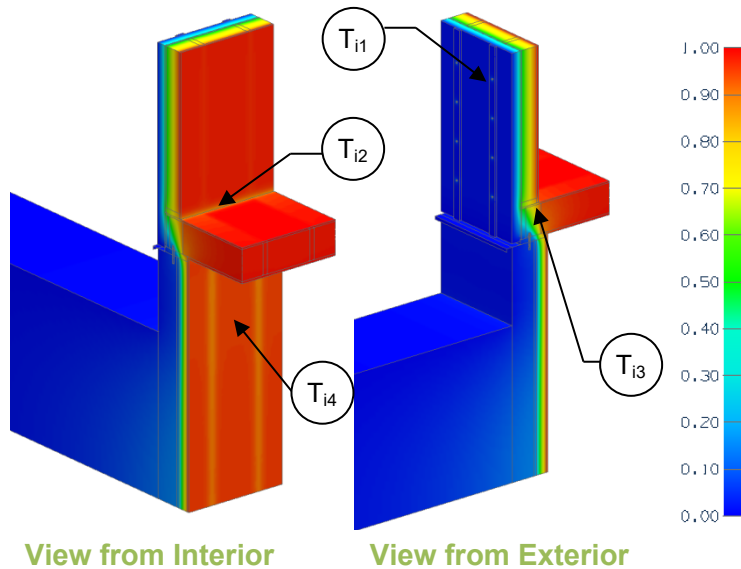


Detail 8.6.2

Exterior and Interior Insulated 2x6 Wood Stud (16" o.c.) Wall Assembly with Continuous Insulation and Wood Strapping Supporting Fiber Cement Board and R-19 Batt Insulation in Stud Cavity – Rim Joist and Interior Insulated At-Grade Foundation Wall Intersection



Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1Dw} , R_{1Dfw}	R-21.6 (3.80 RSI) + exterior insulation for wood framed wall R-1.8 (0.32 RSI) + interior insulation for foundation w = wood framed wall fw = foundation wall
Transmittance / Resistance without Anomaly	U_w , R_w , U_{fw} , R_{fw}	"clear field" U- and R-values
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 foundation

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

Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Wall

Exterior Insulation 1D R-Value (RSI)	R_{1Dw} ft ² ·hr·°F / Btu (m ² K / W)	R_w ft ² ·hr·°F / Btu (m ² K / W)	U_w Btu/ft ² ·hr·°F (W/m ² K)
R-5 (0.88)	R-26.6 (4.68)	R-24.6 (4.32)	0.041 (0.23)
R-10 (1.76)	R-31.6 (5.56)	R-29.2 (5.14)	0.034 (0.19)
R-15 (2.64)	R-36.6 (6.44)	R-33.7 (5.93)	0.030 (0.17)

Base Assembly – Foundation Wall

Foundation Insulation 1D R-Value (RSI)	R_{1Dfw} ft ² hr °F / Btu (m ² K / W)	R_{fw} ft ² ·hr·°F / Btu (m ² K / W)	U_{fw} Btu/ft ² ·hr·°F (W/m ² K)
R-19 (3.34)	R-20.8 (3.67)	R-12.7 (2.23)	0.079 (0.449)

Foundation Linear Transmittance

Exterior Insulation 1D R-Value (RSI)	R ft ² ·hr·°F / Btu (m ² K / W)	U Btu/ft ² ·hr·°F (W/m ² K)	ψ Btu/ft·hr·°F (W/m K)
R-5 (0.88)	R-15.9 (2.81)	0.063 (0.36)	0.046 (0.080)
R-10 (1.76)	R-16.7 (2.94)	0.060 (0.34)	0.047 (0.082)
R-15 (2.64)	R-17.2 (3.03)	0.058 (0.33)	0.050 (0.087)

Temperature Indices

	R5	R10	R15	
T_{i1}	0.25	0.36	0.43	Min T on sheathing, along studs at fasteners
T_{i2}	0.40	0.49	0.55	Max T on sheathing, along studs between fasteners and at bottom plate
T_{i3}	0.10	0.11	0.12	Min T on floor foundation sill plate, at rim joist
T_{i4}	0.07	0.07	0.07	Min T on foundation wall, at midsection between floor and grade between studs