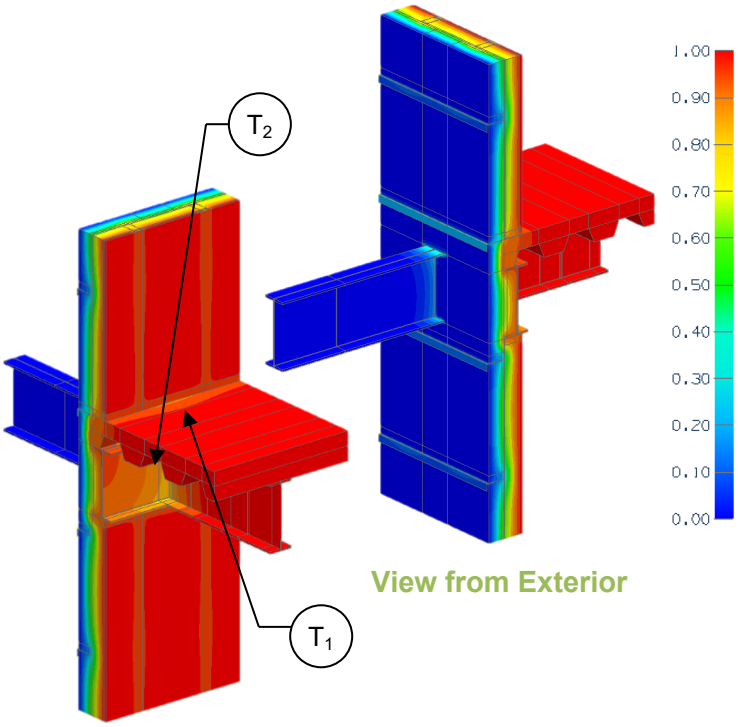
Detail 5.7.9

Exterior and Interior Insulated 3 5/8" x 1 5/8" Steel Stud (16" o.c.) Wall Assembly with Horizontal Z-girts (24" o.c.) Supporting Metal Cladding and R-12 Batt Insulation in Stud Cavity – Structural Steel Floor Intersection with Aerolon Coating



View from Exterior

View from Interior

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-14.3 (2.52 RSI) + exterior insulation
Transmittance / Resistance without Anomaly	U_o, R_o	"clear wall" U- and R-value without slab or beam
Transmittance / Resistance	U_s, R_s, U_t, R_t	U and R-values for s = steel stud wall + slab t = combined wall + slab + beam
Surface Temperature Index[1]	T_i	0 = exterior temperature 1 = interior temperature
Linear Transmittance	ψ	Incremental increase in transmittance per linear length of floor slab
Point Transmittance	χ	Incremental increase in transmittance for beam penetration

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

Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Wall

Wall Exterior Insulation 1D R-Value (RSI)	R_{1D} ft²·hr·°F / Btu (m² K / W)	R_o ft²·hr·°F / Btu (m² K / W)	U_o Btu/ft² ·hr ·°F (W/m² K)
R-15 (2.64)	R-29.3 (5.16)	R-18.5 (3.25)	0.054 (0.31)

Slab Linear Transmittance

Wall Exterior Insulation 1D R-Value (RSI)	R_s ft²·hr·°F / Btu (m² K / W)	U_s Btu/ft² ·hr ·°F (W/m² K)	ψ Btu/ft hr °F (W/m K)
R-15 (2.64)	R-15.6 (2.75)	0.064 (0.36)	0.083 (0.143)

Beam Point Transmittance

R_t ft²·hr·°F / Btu (m² K / W)	U_t Btu/ft² ·hr ·°F (W/m² K)	χ Btu/hr °F (W/K)
R-8.4 (1.48)	0.119 (0.68)	1.17 (0.62)

Temperature Indices

T_1	0.59	Min T on coating at top flange of steel beam exposed to interior air
T_2	0.78	Min T on coating at underside of beam exposed to interior