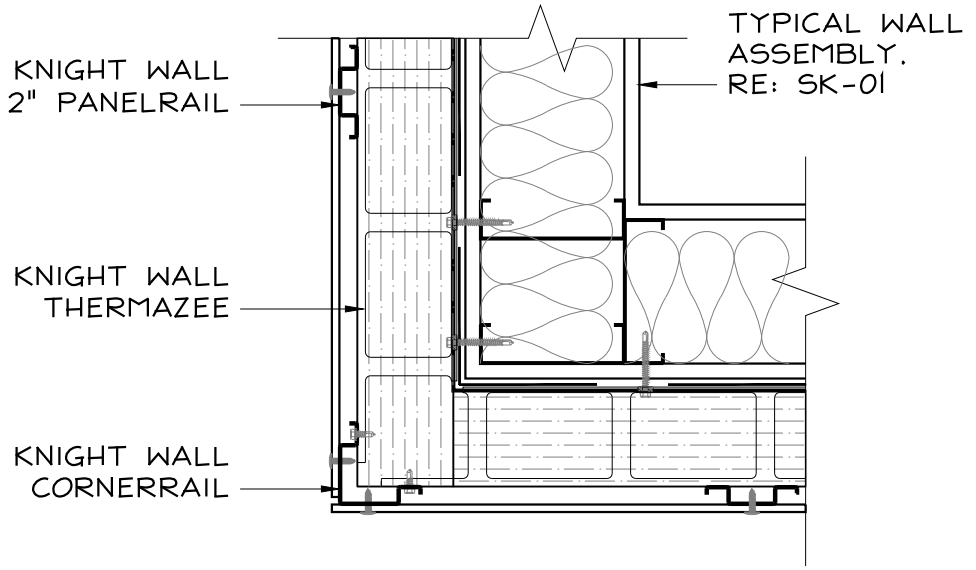
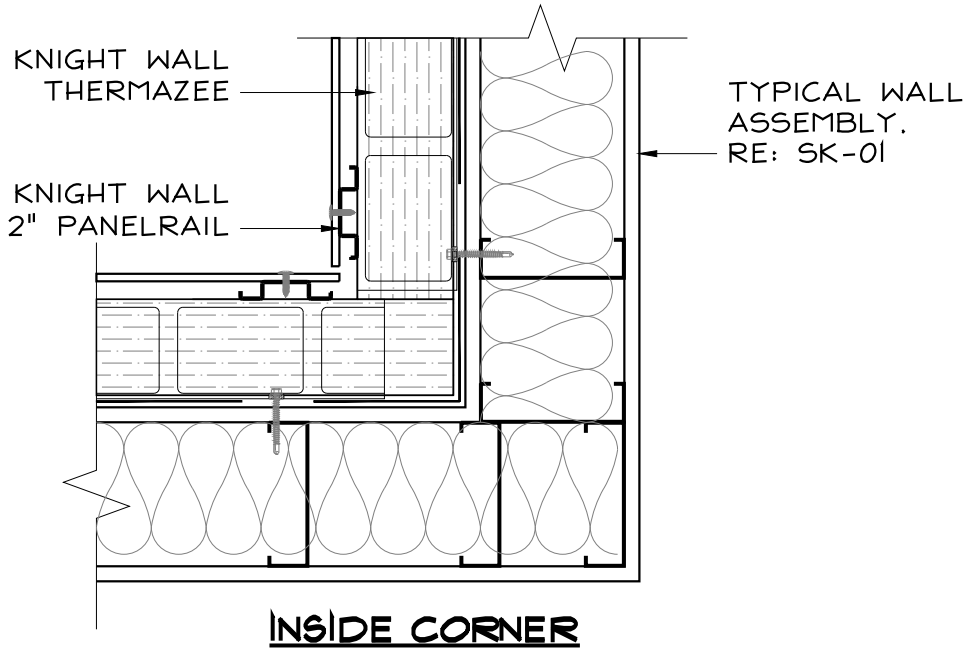
EQUITONE | KNIGHT WALL SYSTEMS | Henry

CODE = R-13 + R-10ci | U-0.055	BASE = U-0.053 | OPTIMIZED = U-0.036*	PSI VALUE = SEE BELOW



OUTSIDE CORNER

PSI VALUES: BASE = -0.026 | OPTIMIZED = -0.041



INSIDE CORNER

PSI VALUES: BASE = 0.021 | OPTIMIZED = 0.016

FIBER CEMENT - CORNERS

SCALE: 1 1/2" = 1'-0"

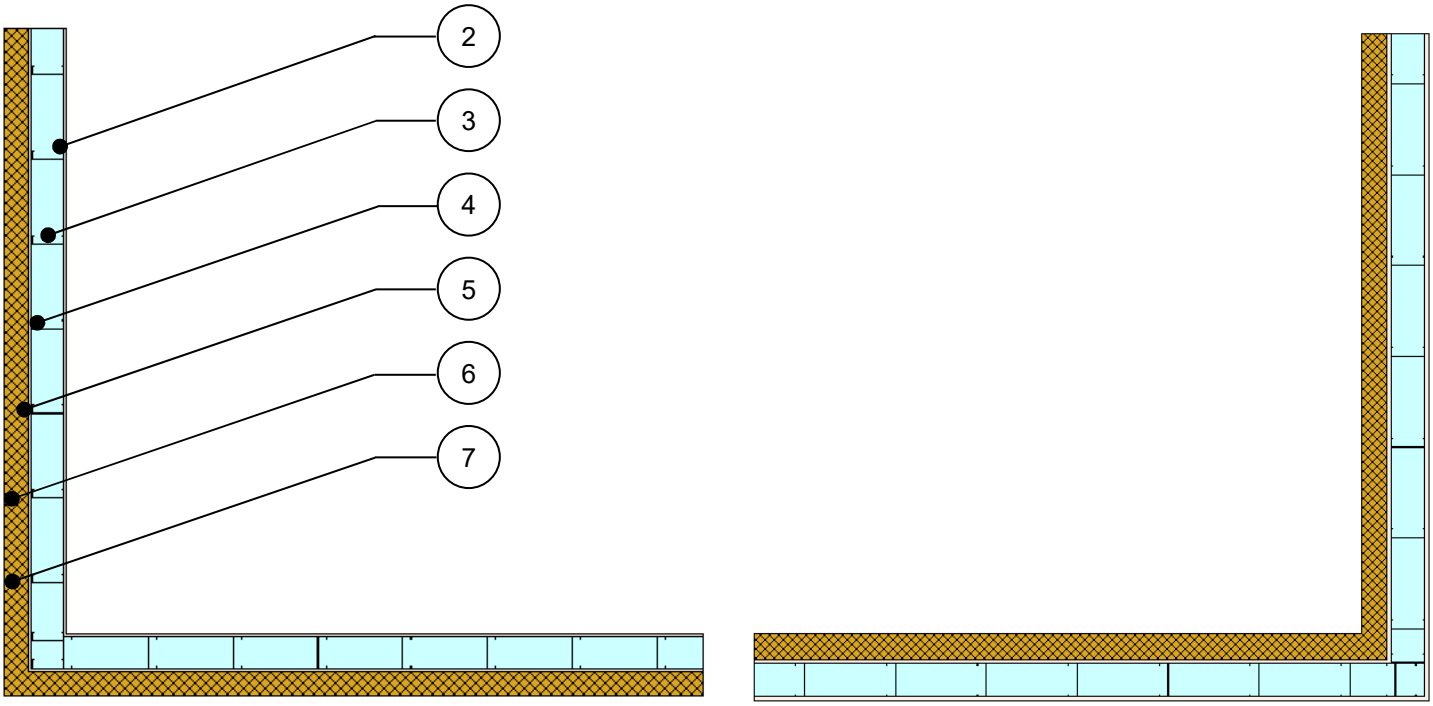
PACE
BUILDING ENVELOPE REPRESENTATIVES
One Rockdale Street | Braintree, MA 02184
781-541-5060 | www.pacerepresentatives.com

FIBER CEMENT CLADDING SYSTEM w/ THERMALLY BROKEN RAINSCREEN ATTCHMENT SYSTEM, SEMI-RIGID CONTINUOUS INSULATION & METAL STUD BACK-UP (IECC 2021 + MA STRETCH ENERGY CODE)

Sketch #:
SK-03

Detail SK-03

Horizontal ThermaZee System Exterior Insulation – Corners

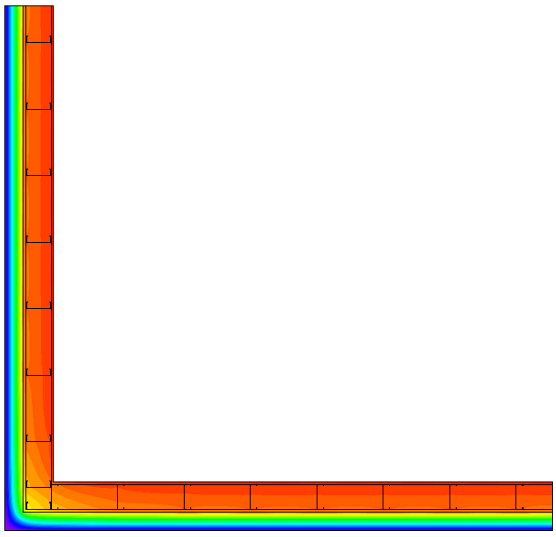


ID	Component	Thickness Inches (mm)	Conductivity Btu·in / ft²·hr·oF (W/m K)	Nominal Resistance hr·ft²·oF/Btu (m²K/W)
1	Interior Film (right side)[1]	-	-	R-0.68 (0.12 RSI)
2	Gypsum Board	0.625" (16)	1.11 (0.16)	R-0.57 (0.1 RSI)
3	Air in Stud Cavity	6" (153)	4.16 (0.6)	R-1.48 (0.26 RSI)
4	6" Steel Studs	18 Gauge	429.9 (62)	-
5	Gypusm Sheathing	0.625" (16)	1.11 (0.16)	R-0.57 (0.1 RSI)
6	Mineral Wool Insulation	4.5" (115)	0.24 (0.034)	R-19.19 (3.38 RSI)
7	Knight Wall ThermaZee cladding attachment system (24" o.c.)	18 Gauge	429.9 (62)	-
8	Exterior Film (left side)[1]	-	-	R-0.68 (0.12 RSI)

[1] Value selected from table 1, p. 26.1 of 2009 ASHRAE Handbook – Fundamentals depending on surface orientation
[2] The thermal conductivity of air spaces within framing was found using ISO 100077-2

Detail SK-03A

Horizontal ThermaZee System Exterior Insulation – Exterior Corner



Exterior Corner

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-22.6 (3.98 RSI)
Transmittance / Resistance without Anomaly	U_o R_o	"Clear Wall" U- and R-value of curtain wall assembly
Linear Transmittance	ψ	Incremental increase in transmittance per linear length

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

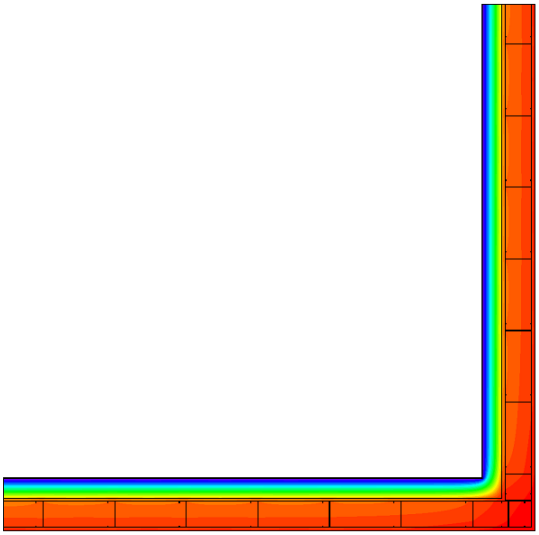
Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Clear Wall

R_{1D} $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	R_0 $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U_0 Btu/ft^2 ·hr ·^oF (W/m^2 K)	ψ Btu/ft·hr ·^oF (W/m K)
R-22.6 (3.98)	R-18.7 (3.29)	0.053 (0.3)	-0.041 (-0.07)

Detail SK-03B

Horizontal ThermaZee System Exterior Insulation – Interior Corner



Interior Corner

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-22.6 (3.98 RSI)
Transmittance / Resistance without Anomaly	U_o R_o	"Clear Wall" U- and R-value of curtain wall assembly
Linear Transmittance	ψ	Incremental increase in transmittance per linear length

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

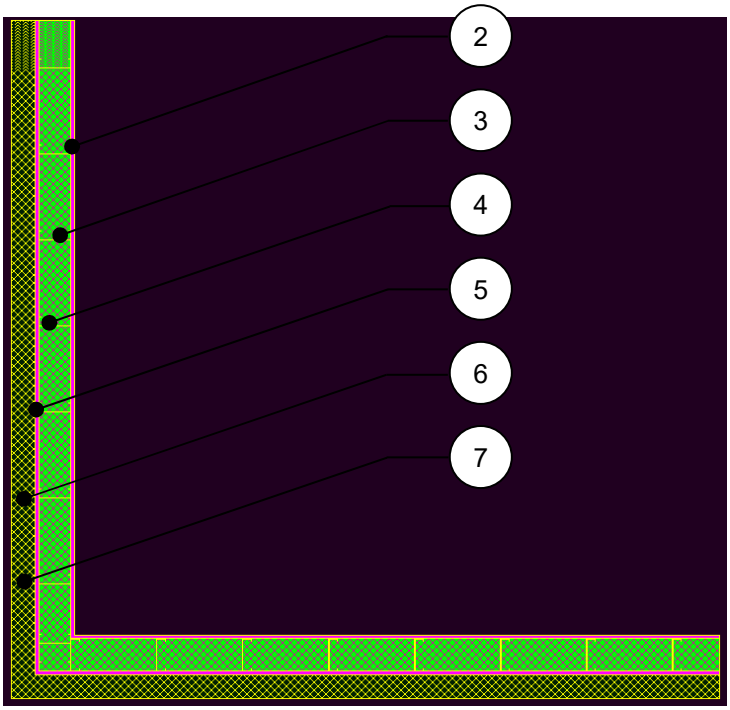
Nominal (1D) vs. Assembly Performance Indicators

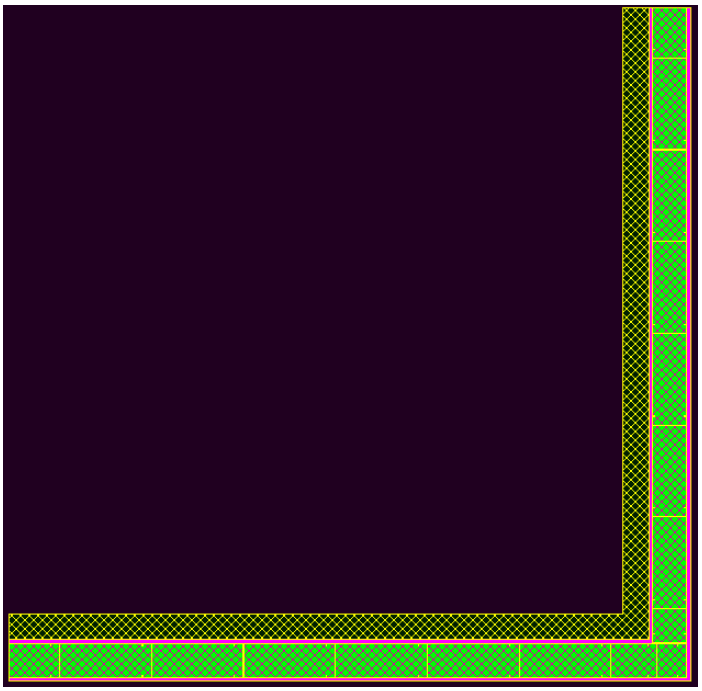
Base Assembly – Clear Wall

R_{1D} $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	R_0 $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U_0 Btu/ft^2 ·hr ·^oF (W/m^2 K)	ψ Btu/ft·hr ·^oF (W/m K)
R-22.6 (3.98)	R-18.7 (3.29)	0.053 (0.3)	0.016 (0.03)

Detail SK-03

Horizontal ThermaZee System Exterior & Interior Insulation – Corners



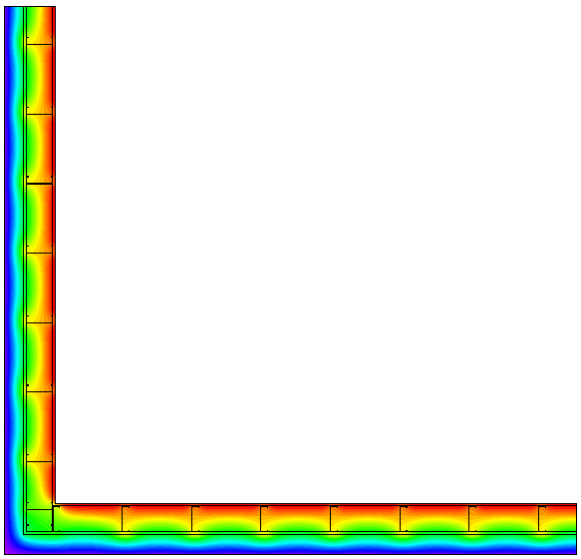


ID	Component	Thickness Inches (mm)	Conductivity Btu·in / ft²·hr·oF (W/m K)	Nominal Resistance hr·ft²·oF/Btu (m²K/W)
1	Interior Film (right side)[1]	-	-	R-0.68 (0.12 RSI)
2	Gypsum Board	0.625" (16)	1.11 (0.16)	R-0.57 (0.1 RSI)
3	Fiberglass Batt Insulation	6" (153)	-	R-19.0 (3.35 RSI)
4	6" Steel Studs	18 Gauge	429.9 (62)	-
5	Gypusm Sheathing	0.625" (16)	1.11 (0.16)	R-0.57 (0.1 RSI)
6	Mineral Wool Insulation	4.5" (115)	0.24 (0.034)	R-19.19 (3.38 RSI)
7	Knight Wall ThermaZee cladding attachment system (24" o.c.)	18 Gauge	429.9 (62)	-
8	Exterior Film (left side)[1]	-	-	R-0.68 (0.12 RSI)

[1] Value selected from table 1, p. 26.1 of 2009 ASHRAE Handbook – Fundamentals depending on surface orientation
[2] The thermal conductivity of air spaces within framing was found using ISO 100077-2

Detail SK-03A

Horizontal ThermaZee System Exterior Insulation & Interior – Exterior Corner



Exterior Corner

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-40.7 (7.17 RSI)
Transmittance / Resistance without Anomaly	U_o R_o	"Clear Wall" U- and R-value of curtain wall assembly
Linear Transmittance	ψ	Incremental increase in transmittance per linear length

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

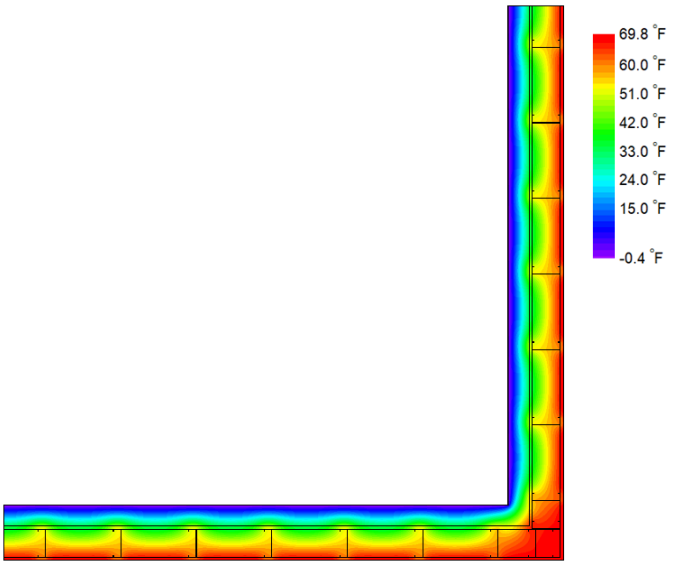
Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Clear Wall

R_{1D} $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	R_0 $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U_0 Btu/ft^2 ·hr ·^oF (W/m^2 K)	ψ Btu/ft·hr ·^oF (W/m K)
R-40.7 (7.17)	R-27.78 (4.89)	0.036 (0.2)	-0.026 (-0.04)

Detail SK-03B

Horizontal ThermaZee System Exterior Insulation & Interior – Interior Corner



Interior Corner

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-40.7 (7.17 RSI)
Transmittance / Resistance without Anomaly	U_o R_o	"Clear Wall" U- and R-value of curtain wall assembly
Linear Transmittance	ψ	Incremental increase in transmittance per linear length

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

Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Clear Wall

R_{1D} $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	R_0 $ft^2 \cdot hr \cdot {}^oF$ / Btu (m^2 K / W)	U_0 Btu/ft^2 ·hr ·^oF (W/m^2 K)	ψ Btu/ft·hr ·^oF (W/m K)
R-40.7 (7.17)	R-27.78 (4.89)	0.036 (0.2)	0.021 (0.04)