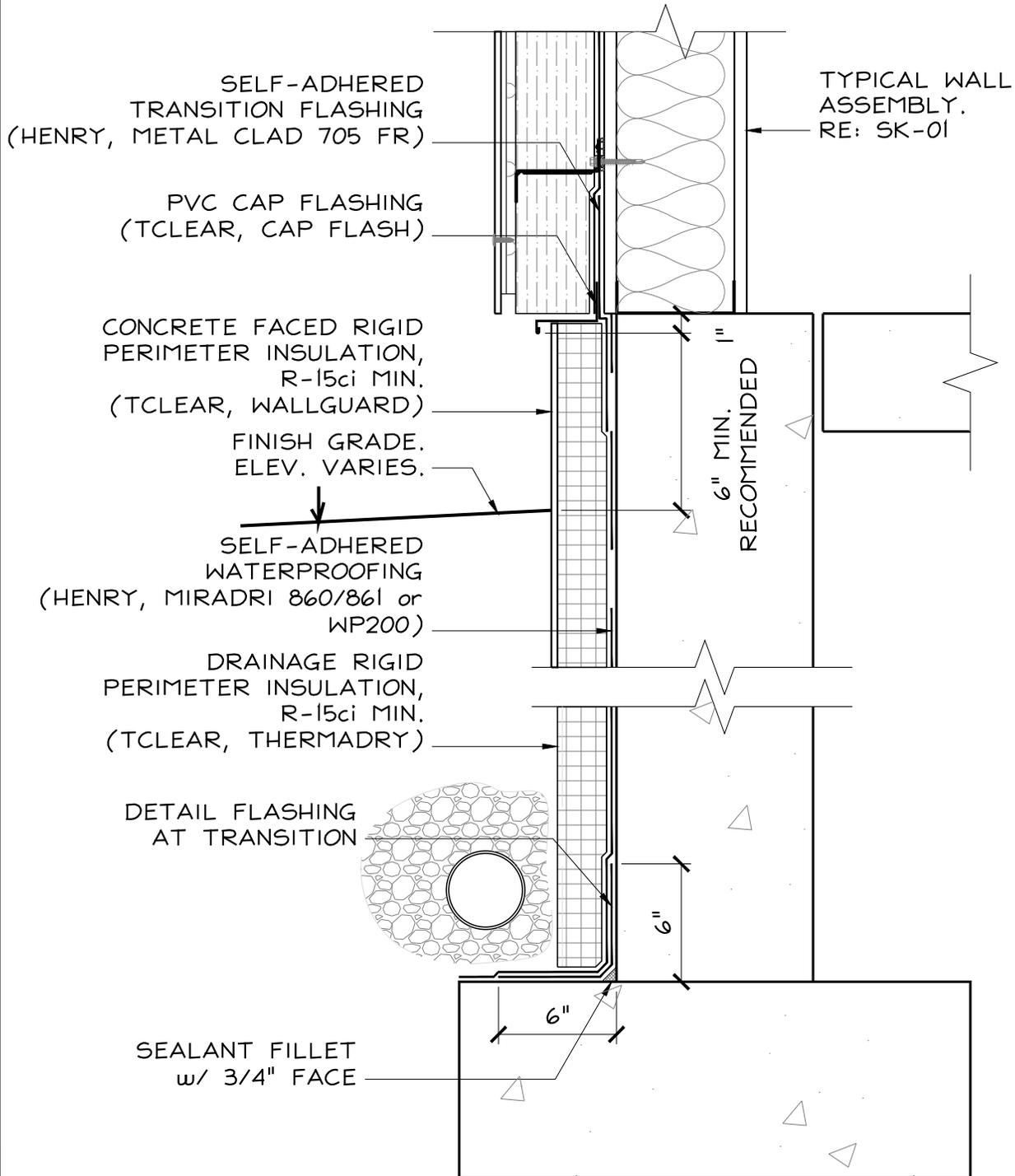


CODE = R-15ci | F-0.52

BASE = F-0.52 | OPTIMIZED = F-0.52

PSI VALUE = 0.144* | 0.010*



FIBER CEMENT - WALL TO FOUNDATION

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

PACE

BUILDING ENVELOPE REPRESENTATIVES

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

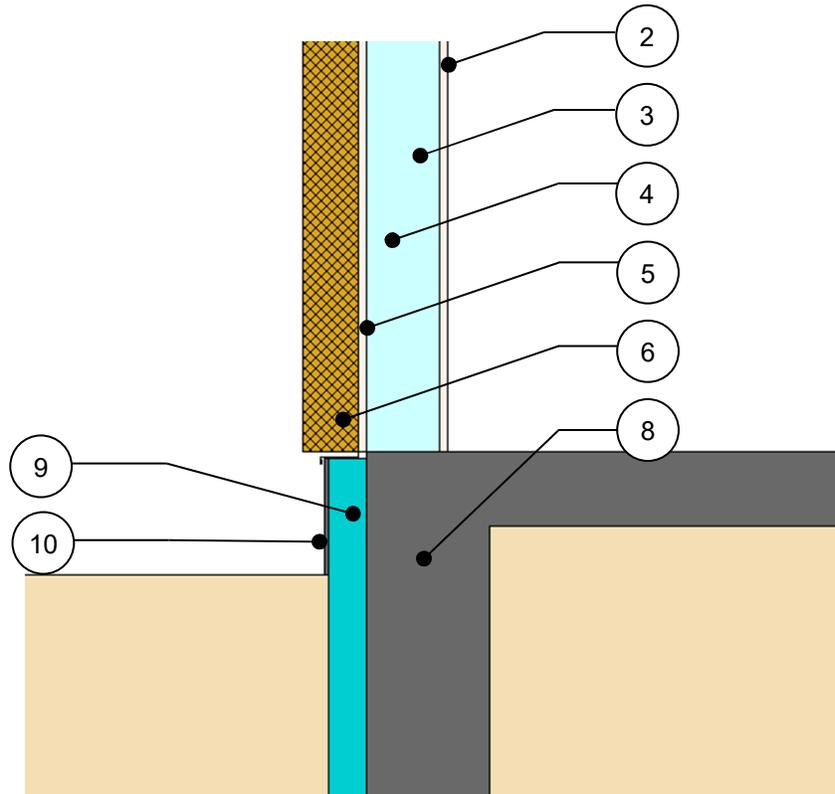
FIBER CEMENT CLADDING SYSTEM w/ THERMALLY
BROKEN RAINSCREEN ATTCHMENT SYSTEM, SEMI-RIGID
CONTINUOUS INSULATION & METAL STUD BACK-UP
(IECC 2021 + MA STRETCH ENERGY CODE)

Sketch #:

SK-02

Detail SK-02

Horizontal ThermaZee System Exterior Insulation – Wall to Foundation



ID	Component	Thickness Inches (mm)	Conductivity Btu-in / ft ² ·hr·oF (W/m K)	Nominal Resistance hr·ft ² ·oF/Btu (m ² K/W)
1	Interior Films (right side) ¹	-	-	R-0.68 (0.12 RSI) to R-0.93 (0.16 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	Gypsum 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	Concrete Slab & Foundation Wall	10" (254)	12.48 (1.8)	R-0.79 (0.14 RSI)
9	XPS Insulation	3" (77)	0.2 (0.029)	R-15.1 (2.66 RSI)
10	Cement Protection Board	0.3125" (8)	12.48 (1.8)	R-0.03 (0.004 RSI)
11	Exterior Films (left side) ¹	-	-	R-0.17 (0.03 RSI) to R-0.68 (0.12 RSI)

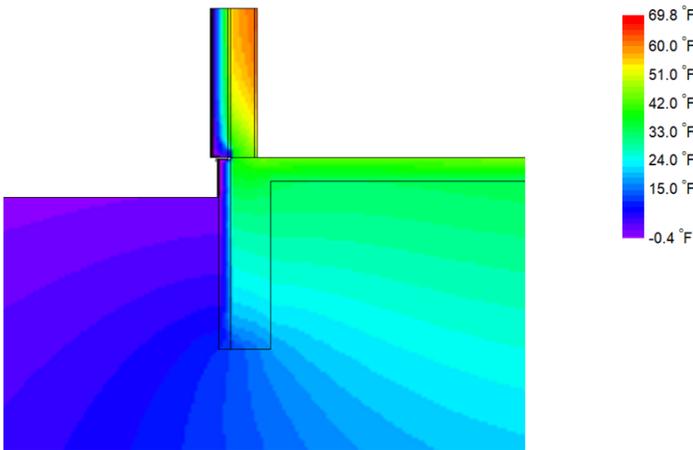
¹ Value selected from table 1, p. 26.1 of 2009 ASHRAE Handbook – Fundamentals depending on surface orientation

² The thermal conductivity of air spaces within framing was found using ISO 100077-2

Detail SK-02

Horizontal ThermaZee System Exterior Insulation – Wall to Foundation

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

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

Wall to Foundation

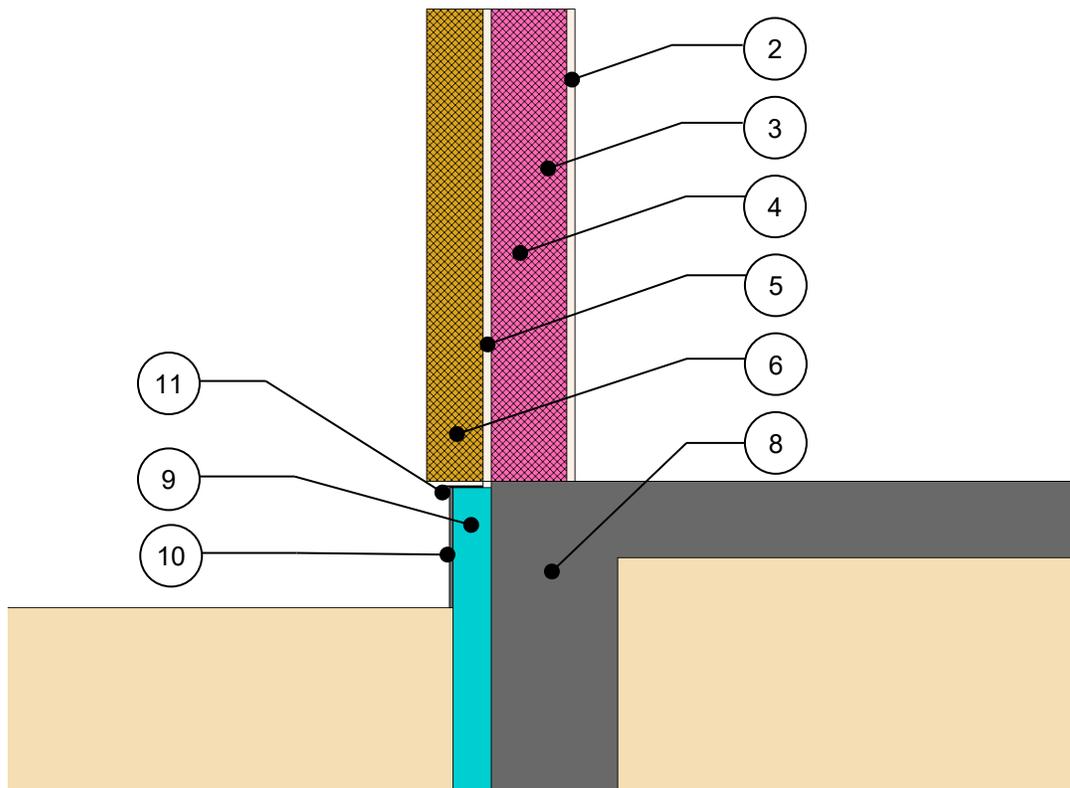
Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Clear Wall

R_{1D} ft ² ·hr·°F / Btu (m ² K / W)	R_o ft ² ·hr·°F / Btu (m ² K / W)	U_o Btu/ft ² ·hr·°F (W/m ² K)	ψ Btu/ft·hr·°F (W/m K)
R-22.6 (3.98)	R-18.7 (3.29)	0.053 (0.3)	0.144 (0.25)

Detail SK-02

Horizontal ThermaZee System Exterior & Interior Insulation – Wall to Foundation



ID	Component	Thickness Inches (mm)	Conductivity Btu-in / ft ² ·hr·oF (W/m K)	Nominal Resistance hr·ft ² ·oF/Btu (m ² K/W)
1	Interior Films (right side) ¹	-	-	R-0.68 (0.12 RSI) to R-0.93 (0.16 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	Gypsum 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	Concrete Slab & Foundation Wall	10" (254)	12.48 (1.8)	R-0.79 (0.14 RSI)
9	XPS Insulation	3" (77)	0.2 (0.029)	R-15.1 (2.66 RSI)
10	Cement Protection Board	0.3125" (8)	12.48 (1.8)	R-0.03 (0.004 RSI)
11	PVC Cap Flashing	0.060" (2)	1.18 (0.17)	-
12	Exterior Films (left side) ¹	-	-	R-0.17 (0.03 RSI) to R-0.68 (0.12 RSI)

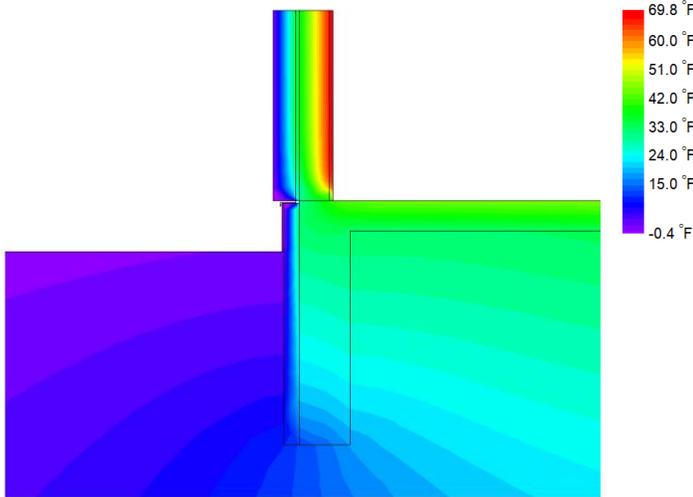
¹ Value selected from table 1, p. 26.1 of 2009 ASHRAE Handbook – Fundamentals depending on surface orientation

² The thermal conductivity of air spaces within framing was found using ISO 100077-2

Detail SK-02

Horizontal ThermaZee System Exterior Insulation & Interior – Wall to Foundation

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 wall assembly
Linear Transmittance	ψ	Incremental increase in transmittance per linear length

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

Wall to Foundation

Nominal (1D) vs. Assembly Performance Indicators

Base Assembly – Clear Wall

R_{1D} ft ² ·hr·°F / Btu (m ² K / W)	R_o ft ² ·hr·°F / Btu (m ² K / W)	U_o Btu/ft ² ·hr·°F (W/m ² K)	ψ Btu/ft·hr·°F (W/m K)
R-40.7 (7.17)	R-27.78 (4.89)	0.036 (0.2)	0.010 (0.017)