

## Chapter 8 – Thermal Performance

Table 8-8 6-inch steel stud-framed wall thermal modeling results

6" Steel Stud-Framed Wall with Anchored Masonry Veneer, R-21 Batt Insulation, R-4.2/in - R-6/in Exterior Insulation					
Tie Type	Exterior Insulation Thickness	System Nominal Insulation R-value (Cavity + Exterior Insulation)	3D Thermal Modeling Effective R-Value of System (ft <sup>2</sup> ·°F·hr/Btu)		
			Without Penetrations (Through Exterior Insulation)	With Masonry Tie Penetrations @ 16" x 16" o.c.	
				Stainless-Steel Tie and/or Hook	Galvanized-Steel Tie and/or Hook
Plate Tie (14ga)	2"	21.0 + 8.4–12	20.4–24.4	18.7–21.6	16.7–18.7
	3"	21.0 + 12.6–18	24.7–30.4	22.3–26.3	19.3–21.8
	4"	21.0 + 16.8–24	29.1–36.6	25.8–31.0	21.8–24.9
Thermally Optimized Screw Tie	2"	21.0 + 8.4–12.0	20.4–24.4	18.0–20.6	17.9–20.5
	3"	21.0 + 12.6–18.0	24.7–30.4	21.2–24.7	21.1–24.6
	4"	21.0 + 16.8–24.0	29.1–36.6	24.4–28.9	24.3–28.7

Table 8-9 Concrete floor line thermal modeling results with 6-inch steel stud-framed wall above and below

Concrete Slab Edge with Anchored Masonry				
Exterior Insulation Depth	System Nominal Exterior Insulation R-Value	3D Thermal Modeling Effective R-Value of System (ft <sup>2</sup> ·°F·hr/Btu)		
		Cavity + Exterior Insulation (Without Penetrations)	Standoff Shelf Angle	Continuous Shelf Angle
2"	8.4 – 12.0	12.8 – 16.6	5.9–6.4	3.9–4.1
3"	12.6–18.0	17.2–22.7	6.8–7.3	4.0–4.3
4"	16.8–24.0	21.7–29.1	7.6–8.2	4.2–4.5