

Chapter 8 – Thermal Performance

Table 8-10 Wood-framed backup wall with anchored masonry veneer: tabulated thermal modeling results

Wood-Framed Wall with Anchored Masonry Veneer, 23% Framing Factor						
2x6 Framing, 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 ² ·°F·hr/Btu)			
			Without Penetrations (Through Exterior Insulation)	With Masonry Tie Penetrations Considered @ 16" x 16" o.c.		
				Ties Only	Ties + Standoff Shelf Angle	Ties + Continuous Shelf Angle
Thermally Optimized Screw Tie – Stainless-Steel Hook	0"	21.0 + 0.0	18.3	18.2	–	18.1
	1"	21.0 + 4.2–6	22.6–24.4	22.2–23.8	22.0–23.6	21.6–23.0
	2"	21.0 + 8.4–12.0	26.9–30.6	26.0–29.1	25.7–28.7	24.6–27.0
	3"	21.0 + 12.6–18.0	31.1–36.5	29.6–34.0	29.1–33.2	27.3–30.4
Thermally Optimized Screw Tie – Galvanized-Steel Hook	0"	21.0 + 0.0	18.3	18.2	–	18.1
	1"	21.0 + 4.2–6.0	22.6–24.4	22.1–23.7	22.0–23.5	21.6–23.0
	2"	21.0 + 8.4–12.0	26.9–30.6	26.0–29.1	25.7–28.6	24.6–26.9
	3"	21.0 + 12.6–18.0	31.1–36.5	29.5–33.9	29.1–33.2	27.3–30.4
Plate Tie (14 ga) – Stainless Steel	0"	21.0 + 0.0	18.3	18.2	–	18.1
	1"	21.0 + 4.2–6.0	22.6–24.4	22.2–23.8	22.0–23.6	21.6–23.0
	2"	21.0 + 8.4–12.0	26.9–30.6	26.0–29.1	25.7–28.7	24.7–27.0
	3"	21.0 + 12.6–18.0	31.1–36.5	29.6–34.0	29.2–33.3	27.4–30.4
Plate Tie (14 ga) – Galvanized Steel	0"	21.0 + 0.0	18.3	18.1	–	18.1
	1"	21.0 + 4.2–6.0	22.6–24.4	21.9–23.4	21.7–23.2	21.4–22.6
	2"	21.0 + 8.4–12.0	26.9–30.6	25.4–28.2	25.1–27.8	24.1–26.2
	3"	21.0 + 12.6–18.0	31.1–36.5	28.6–32.3	28.1–31.7	26.5–29.1
2x8 Framing, R-30 Batts, No Exterior Insulation						
Plate Tie (14 ga) – Galvanized Steel	0"	30	22.8	22.6	–	22.5