

## Chapter 8 – Thermal Performance

Table 8-5 CMU backup wall with anchored masonry veneer: tabulated thermal modeling results

8" CMU Wall with Anchored Masonry Veneer, R-4.2/in - R-6/in Exterior Insulation						
Tie Type	Exterior Insulation Thickness	Nominal Insulation R-value	3D Thermal Modeling Effective R-Value of System (ft <sup>2</sup> ·°F·hr/Btu)			
			Without Penetrations (Through Exterior Insulation)	With Masonry Anchor Penetrations @ 16" x 16" o.c.		
				Ties Only	Anchors + Standoff Shelf Angle	Anchors + Continuous Shelf Angle
Embedded Wire Tie (e.g., ladder style) – Stainless Steel	3"	12.6–18.0	15.9–21.3	14.9–19.3	13.1–16.2	9.5–10.9
	4"	16.8–24.0	20.2–27.5	18.7–24.6	16.0–19.9	11.0–12.5
	5"	21.0–30.0	24.4–33.4	22.4–29.7	18.8–23.4	12.3–13.9
Embedded Wire Tie (e.g., ladder style) – Galvanized Steel	3"	12.6–18.0	15.9–21.3	13.2–16.4	11.8–14.1	8.8–9.9
	4"	16.8–24.0	20.2–27.5	16.3–20.4	14.2–17.1	10.1–11.3
	5"	21.0–30.0	24.4–33.4	19.3–24.2	16.5–19.8	11.3–12.6
Thermally Optimized Screw Tie – Stainless-Steel Hook	3"	12.6–18.0	15.9–21.3	14.1–17.9	12.4–15.2	9.2–10.4
	4"	16.8–24.0	20.2–27.5	17.4–22.2	15.1–18.4	10.5–11.9
	5"	21.0–30.0	24.4–33.4	20.6–26.3	17.4–21.2	11.7–13.1
Thermally Optimized Screw Tie – Galvanized Steel Hook	3"	12.6–18.0	15.9–21.3	14.0–17.8	12.4–15.1	9.2–10.4
	4"	16.8–24.0	20.2–27.5	17.4–22.1	15.0–18.3	10.5–11.9
	5"	21.0–30.0	24.4–33.4	20.5–26.2	17.4–21.2	11.7–13.1
Plate Tie (14 ga) – Stainless Steel	3"	12.6–18.0	15.9–21.3	14.1–18.0	12.5–15.3	9.2–10.5
	4"	16.8–24.0	20.2–27.5	17.7–22.8	15.3–18.7	10.7–12.0
	5"	21.0–30.0	24.4–33.4	21.1–27.2	17.8–21.8	11.9–13.3
Plate Tie (14 ga) – Galvanized Steel	3"	12.6–18.0	15.9–21.3	12.2–14.8	11.0–12.9	8.4–9.3
	4"	16.8–24.0	20.2–27.5	14.8–17.9	13.0–15.3	9.5–10.5
	5"	21.0–30.0	24.4–33.4	17.1–20.7	14.9–17.4	10.5–11.6