

AC SIZE CHART

Fifteen floor areas against all seven climate zones, in the half ton steps equipment is actually sold in.

Air conditioning is sold in tons, and a ton is 12,000 BTU per hour of cooling. Equipment comes in half ton steps up to five tons and whole tons above that, so the useful answer to how big a system a house needs is not a BTU figure, it is which box on the price list.

The table below is a square foot rule of thumb with a climate adjustment, the same one contractors use to sanity check a quote. It is not a Manual J load calculation and it cannot be. A real load calculation counts your windows, which way they face, how much insulation is in the attic, how leaky the envelope is and how many people live there, and two identical looking houses on the same street can land a full ton apart on those inputs alone.

Use this to know whether a quote is in the right neighborhood. If a contractor proposes something two sizes away from this table, that is the moment to ask for their load calculation.

Cooling size in tons, by floor area and climate zone

Floor area	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
600 sq ft	1.5	1.5	1.5	1.5	1.5	1.5	1.5
800 sq ft	2	2	2	1.5	1.5	1.5	1.5
1,000 sq ft	2.5	2	2	2	2	2	2
1,200 sq ft	2.5	2.5	2.5	2.5	2.5	2	2
1,400 sq ft	3	3	3	2.5	2.5	2.5	2.5
1,600 sq ft	3.5	3.5	3	3	3	3	3
1,800 sq ft	4	3.5	3.5	3.5	3	3	3
2,000 sq ft	4	4	4	3.5	3.5	3.5	3.5
2,200 sq ft	4.5	4.5	4	4	4	4	3.5
2,400 sq ft	5	5	4.5	4.5	4	4	4
2,600 sq ft	5.5	5	5	4.5	4.5	4.5	4.5
2,800 sq ft	6	5.5	5.5	5	5	4.5	4.5
3,000 sq ft	6	6	5.5	5.5	5	5	5
3,500 sq ft	7	7	6.5	6	6	6	5.5
4,000 sq ft	8	7.5	7.5	7	6.5	6.5	6.5

Tons of cooling, at eight foot ceilings, average sun exposure, three occupants and a kitchen inside the conditioned space. Zone 1 is south Florida and the Texas coast, zone 4 is the mid Atlantic and the lower Midwest, zone 7 is northern Minnesota and Maine.

The full sizing picture for zone 4

Floor area	Cooling load, BTU/hr	Tons	Size to buy	Heating output, BTU/hr	Furnace input at 80% AFUE	Furnace input at 95% AFUE
600 sq ft	16,600	1.38	1.5	27,000	33,750	28,421
800 sq ft	20,600	1.72	1.5	36,000	45,000	37,895
1,000 sq ft	24,600	2.05	2	45,000	56,250	47,368
1,200 sq ft	28,600	2.38	2.5	54,000	67,500	56,842
1,400 sq ft	32,600	2.72	2.5	63,000	78,750	66,316
1,600 sq ft	36,600	3.05	3	72,000	90,000	75,789
1,800 sq ft	40,600	3.38	3.5	81,000	101,250	85,263
2,000 sq ft	44,600	3.72	3.5	90,000	112,500	94,737
2,200 sq ft	48,600	4.05	4	99,000	123,750	104,211
2,400 sq ft	52,600	4.38	4.5	108,000	135,000	113,684
2,600 sq ft	56,600	4.72	4.5	117,000	146,250	123,158
2,800 sq ft	60,600	5.05	5	126,000	157,500	132,632
3,000 sq ft	64,600	5.38	5.5	135,000	168,750	142,105
3,500 sq ft	74,600	6.22	6	157,500	196,875	165,789
4,000 sq ft	84,600	7.05	7	180,000	225,000	189,474

The tons column is the raw load. The size to buy column is that load rounded to a size equipment is made in, which is why the two disagree. Furnace input is what the burner consumes, output is what reaches the house, and the gap between them is the efficiency rating.

Every figure on this sheet was produced by the same calculator that runs at contractorhandbook.com, free and with no signup.

These are estimating figures for ordering and pricing, not engineering. Nothing here sizes a structural member, checks a load, or replaces local code, a permit, or a manufacturer's installation instructions. Where a rule of thumb is doing the work it is written into the notes under each table rather than hidden.