

HVAC Trade-Off Worksheet

1. Calculate efficiency Increase in percent:

$$\frac{\text{EFF}_{\text{installed}} - \text{EFF}_{\text{standard}}}{\text{EFF}_{\text{standard}}} = \% \text{ increase}$$

2. Adjust the % increase according to Trade-off Ratio (Table 1 below):

$$(\% \text{ increase} \times \text{Trade-off Ratio}) + 1 = \text{Adjusted Ratio}$$

3. Adjust *Total Required UA* (from Manual Trade -Off Worksheet):

$$\text{Total Required UA} \times \text{Adjusted Ratio} = \text{Adjusted Required UA}$$

4. Use **Adjusted Required UA** as new *Total Required UA*, and check if *Total Proposed UA* is now less than or equal to it.

Total Proposed UA
(from Manual Trade-Off Worksheet)

Total Required UA

Work Space:

Table 1
Trade-off Ratios

City/Town	HDD ₅₅	Ratio, β	City/Town	HDD ₅₅	Ratio, β
Amherst	6404	1.15	Hyannis	6137	1.13
Bedford	6521	1.15	Lawrence	6322	1.14
Blue Hill	6398	1.15	Middleton	6268	1.14
Boston	5641	1.11	Nantucket	5848	1.12
Brocton	6225	1.14	New Bedford	5426	1.10
Chatham	6058	1.13	Plymouth	6333	1.14
Clinton	6698	1.16	Provincetown	6044	1.13
East Wareham	6297	1.14	Rochester	6267	1.14
Edgartown	5916	1.13	Springfield	5754	1.12
Falmouth	5713	1.12	Stockbridge	7060	1.17
Framingham	6262	1.14	Taunton	6346	1.14
Haverhill	6413	1.15	Tully Lake	7552	1.19
			Worcester	6979	1.17

Table 2
NAECA Minimum Equipment Efficiencies¹

Equipment Type	Minimum	Equipment Type	Minimum
Furnace	78 AFUE	Heat Pump: Heating Mode	6.8 HSPF
Boiler: Except Gas Steam	80 AFUE	Heat Pump: Cooling Mode	10 SEER
Boiler: Gas Steam	75 AFUE	Air Conditioner	10 SEER

¹ Note: No Trade-off available for electric Resistance Heating.