DELTA T HEAT EXCHANGERS
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"Quick" Heat Transfer Calculation Formulae

Most of the formulae listed below are "rules of thumb" for quick estimation purposes and are limited in their application. Most are to be applied under standard temperatures and pressures. For actual heat transfer performance information please contact Delta T Heat Exchangers and we would be pleased to provide an accurate assessment.

General

Btu/hr = kW x 3412 = HP x 2,544

Lbs/Hr = GPM x Density x 8.022 = GPM x 501.375 x Specific Gravity

Specific Gravity = Density / 62.4

PSIA = PSIG + 14.7

Btu/hr = Tons of Refrigeration x 12000

Btu/hr = Evaporative Cooling Tower Tons x 15000

SCFM $_{of\ air}$ = [ACFM x (psig + 14.7) x 528] / [(Temp + 460) x 14.7]

SCFM $_{of\ air}$ = Lbs/ Hr $_{of\ air}$ / 4.5 (at atmospheric temperature and pressure)

Sensible heating or cooling of fluids

Btu/hr = Lbs/ Hr x Specific Heat x Specific Gravity X Temp Rise

Btu/hr = K x GPM x Temp Rise

Water K = 500
30% glycol K = 470
40% glycol K = 450
50% glycol K = 433
Hydraulic Oil K = 210 to 243

For Air, Btu/hr = 1.085 x SCFM x Temp Rise

Steam condensing

Btu/hr = Lbs/ Hr x Latent Heat

Heating or cooling a solid

Btu/hr for Solids = Lbs/Hr x Specific Heat x Delta-T