

Temperature Correction Factor

AERCO sizing guidelines for selecting the number of gas fired units are based on 40°F entering cold water, 100°F mixed temperature at the fixtures, and no greater than 140°F heater set point. To select properly for alternate cold water inlet temperatures, a temperature correction factor may be applied:

T_c	40°	45°	50°	55°	60°	65°	70°	75°
TCF	1	.96	.93	.88	.83	.78	.71	.64

(For other coldwater inlet temperatures, see Formula Method below.)

Ex 1: A 120 room hotel with 1 65# and 1 50# clothes washer. Coldest year round entering water temperature is 60°:

From the chart:

For T_c = 60°, TCF = .83

120 x .83 = 99.6 rooms 115 x .83 = 95.5 total #

Therefore 1 KC-1000 can be selected having 60° inlet water where 2 KC-1000's would have been selected having 40° inlet water.

Formula Method

TCF = Temperature Correction Factor

T_M = Mixed temperature at fixtures

T_C = Entering cold water temperature

T_H = Water heater outlet temperature

$$TCF = \frac{\frac{T_M - T_C}{T_H - T_C}}{\frac{100 - T_C}{140 - T_C}} = \frac{\frac{100 - T_C}{140 - T_C}}{.6}$$

Ex 2: A 200 bed psychiatric center. Coldest year round entering water temperature is 50°:

$$TC = 50^\circ \quad TCF = \frac{\frac{100 - 50}{140 - 50}}{.6} = \frac{.90}{.6} = .93$$

TCF = .93

200 x .93 = 186

In this example 50° inlet water does not affect the sizing selection. 3 KC-1000's are still required.