

" Tank Heat Loss

MO. 38

DATE

KW REQUIREMENTS FOR MAINTAINING TANK TEMPERATURES AGAINST HEAT LOSSES

To use graph, assume a requirement for maintaining a fluid temperature of 250°F in an ambient of 30°F in a tank 12' diameter by 20' long. Chart is based upon still air.

A. Connect 12' on scale 2 with 20' on scale 6 (line A). The intersection of this line with scale 4 is the surface area of the cylindrical portion of the tank (approximately 800 sq. ft.). The intersection of line A with scale 3 is the tank volume (approximately 17,000 gallons).

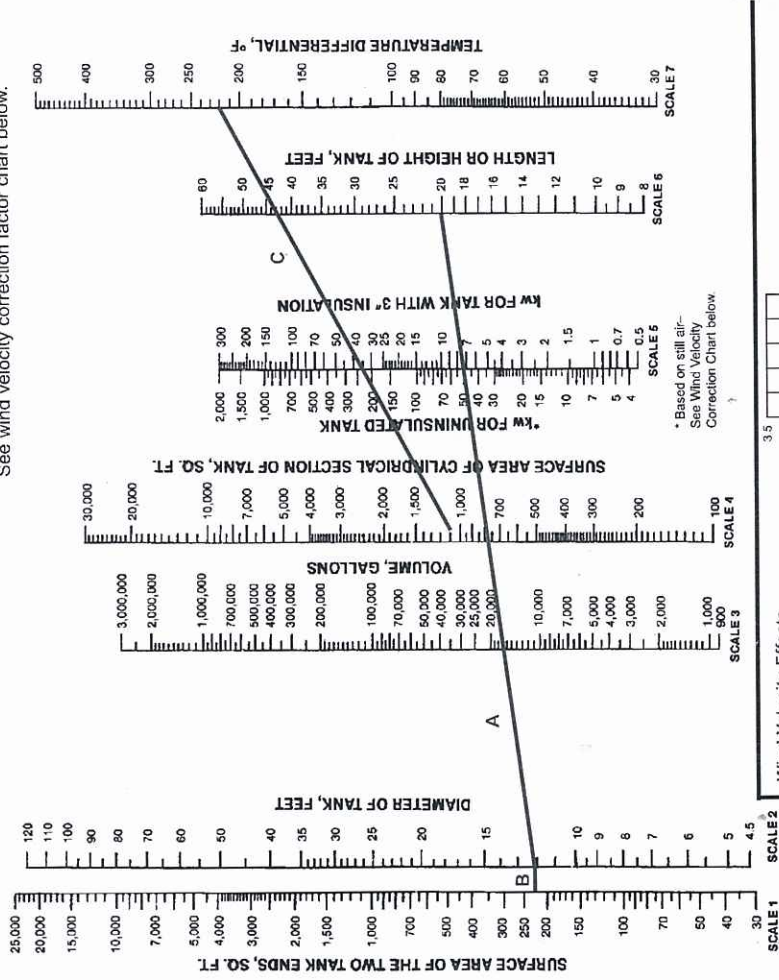
B. Draw horizontal line B to scale 1 to determine the surface area of the tank ends (approximately 225 sq. ft.).

C. Adding A and B is the total surface area of the tank (1,025 sq. ft.). Connect 1,025 on scale 4 and 220°F (250-30°F) on scale 7 with line C. The kw required is where line C intersects scale 5.

Insulated tank = 35kw

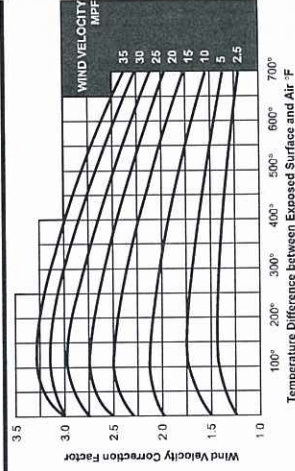
Uninsulated tank = 250kw

See wind velocity correction factor chart below.



Wind Velocity Effects
On exposed, Bare and
Insulated Surfaces

1. Determine surface heat losses at still air conditions as per calculation or chart above.
2. Multiply result by wind correction factor from above for total heat loss.



Ref: <http://ogdenmfg.com>