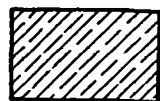
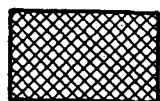




Iron or steel.



Bronze, brass, copper and compositions.



White metal.
Aluminum, zinc, lead, babbitt and alloys.



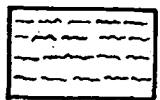
Electric insulation.



Vulcanite, fibre, mica, Bakelite, etc.



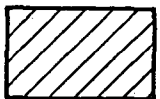
Sound or heat insulation.
Cork, hair-felt, wool, asbestos, magnesia, etc.



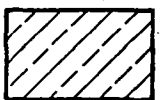
Flexible material.
Fabric, felt, rubber, etc.



Concrete.



Brick or stone masonry.



Fire-brick and refractory material.



Marble, slate, glass, porcelain, etc.



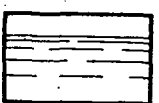
Earth.



Rock.



Sand.



Water and other liquids.



Across grain } Wood⁷
With grain }

⁷The symbols for wood may be used for sections and outside views.

⁸Used for outside views but not for sections.



Brick.⁸



Stone.⁸



Transparent material.⁸
Glass, celluloid, etc.

Chapter 2

PHYSICAL UNITS AND TABLES

PHYSICAL UNITS

One British thermal unit (B.t.u.) = $\frac{1}{180}$ of the heat required to raise the temperature of 1 lb. of water from 32 deg. to 212 deg. fahr. This is substantially equal to the quantity of heat required to raise 1 lb. of water from 63 deg. to 64 deg. fahr.

One mean calorie = $\frac{1}{100}$ of the heat required to raise 1 gram of water from 0 deg. to 100 deg. cent. This is substantially equal to the quantity of heat required to raise one gram of water from 17 deg. to 18 deg. cent.

One mean calorie = 0.003968 B.t.u. = 3.085 ft. lb. = 0.0011626 w.hr.

Power, Work, Etc.

1 ton refrigeration	= 199.038 B.t.u. per minute (approx.)
Latent heat of ice	= 143.33 B.t.u. per pound.
1 B.t.u. (British thermal unit)	= { 777.5 ft. lb. = 0.293 watt hours. 252.02 mean calories.
1 watt hour (w.hr.)	= 2,655.4 ft. lb. = 3.415 B.t.u.
1 kilowatt (1,000 watts) (kw)	= { 1.3405 horsepower = 56.89 B.t.u. per minute 44,236.5 ft. lb. per minute.
1 horsepower (hp.)	= 0.746 kilowatt
1 mech. horsepower	= { 42.44 B.t.u. per minute. 33,000 ft. lb. per minute.
1 boiler horsepower	= { 33,523.7 B.t.u. per hour or evaporation of 34.5 lb. of water per hour from and at 212 deg. fahr.

Weights and Volume

1 gal. (U. S.)	= 231 cu. in. = 0.13368 cu. ft.
1 British or Imperial gallon	= 277.274 cu. in.
1 cu. ft.	= 7.4805 gal. = 1,728 cu. in.
1 cu. ft. water at 60 deg. fahr.	= 62.37 lb.
1 cu. ft. water at 212 deg. fahr.	= 59.76 lb.
1 gal. water at 60 deg. fahr.	= 8.34 lb.
1 gal. water at 212 deg. fahr.	= 7.99 lb.
1 pound (avoir.)	= 16 oz. = 7,000 grains.
1 bushel	= 1.244 cu. ft.
1 short ton	= 2,000 lb.
1 long ton	= 2,240 lb.