

# Engineering Information

## Wind Velocity and Pressure at Various Exposed Heights

**Engineering Information**

Table No. 4

Height of exposed Surface above mean retarding surface (m)	Horizontal Wind Velocity (km/hr)	Horizontal pressure (km/m <sup>2</sup> )
0	80	40
3	96	58
6	108	73
9	115	85
12	123	98
15	128	105
18	133	112
21	137	120
24	141	127
27	144	133
30	147	141
38	155	151
46	160	166
53	165	175
61	169	185
76	175	200
92	181	210
107	186	224
122	191	234

42

**Engineering Information**

**HYDRAULIC AND GAS ENGINEERING**

**HYDRAULIC MEMORANDA**

Imperial Gallon = 1.2 United States Gallon.  
 1 ft. = 12 inches = .305 metres. 1 metre = 3.28 ft. = 39.37 ins.  
 1 cubic foot = 6.25 gallons = 28.2 litres = .0283 cubic metres.  
 1 Cubic metre = 1000 litres = 220 gallons = 35.32 cubic feet.  
 1 gallons = 277.27 cu. ins. = 16 cu. ft. = 4.543 litres = .004543 cu. m.  
 1 litre = .001 cubic metres x .035 cubic feet = .22 gallons.  
 1 cubic foot of water weights 2205 lb. = 220.5 imperial gallons.  
 1 gallons of water weight 10 lb. Petroleum 82 lb./gallons.  
 1 ton of water = 35.9 cu. ft. = 244 imp. galls = 1000 litres (app.)  
 1 ton Petroleum 275 imperial gallons.  
 1 litre of water weight 1 Kilogramme = 2.204 lb.  
 Density of water = 62.4 lb./cu. ft. gm./cu. cm.  
 Density of Oil = 50lb. lb./cu. ft. = 0.8 gm./cu. cm.  
 Density of Air 0.078 lb. cu. ft. = 0.00125 gm./cu. cm.  
 1 United States gallon = 231.0 cubic inches.  
 1 United States gallon 3.8 litre. 1 litre 264 U.S. gallon.  
 1 cubic foot water = 7.476 United States gallons.  
 Pressure of atmosphere = 14.7 lb. per square inch.  
 Pressure in 1 b. per sq. inch = head of water in feet, x 2.31  
 Head in feet = pressure in lb. per sq. inch. x 2.31.  
 300 lb./in.<sup>2</sup> working pressure = 700 ft. head = 20 atoms. or 21 kilos/sq. cm.  
 The quantity of water in cub. ft./min. flowing through a pipe at the rate if 3 feet per second in found approximately by squaring the diameter of the pipe in inches.  
 1 brake horse power = 33,000 ft. lb. per min 550 ft. lb. per sec.  
 1 forcece cheval = 75 kilogrammetres per sec. = 542.5 ft. lb./sec.

**MEASUREMENT OF FLOW OF WATER**

Water delivered into a tank provided with thin circular orifices of such a size that they are "drowned".

43