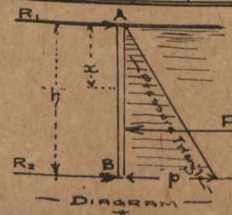


**WATER PRESSURES.**

"h"	"P"	"p"	"P"	"B.M."	"B.M."	"R <sub>1</sub> "	"R <sub>2</sub> "	Miscellaneous
Depth in Feet.	Pressure in lbs per Sq. Ft.	Pressure in lbs per Sq. Ft.	TOTAL PRESSURE in Pounds for 1 Ft. Width.	Max. B.M. in Foot-Pounds for 1 Foot Width.	Max B.M. in Inch-Pounds for 1 Foot Width.	Reaction at Top for 1 Foot Width.	Reaction at Bottom for 1 Foot Width.	Notes and Formulae.
1	0.4335	62.425	31.21	4	48	10	21	Pressure in Upper Squin
2	0.8670	124.850	124.85	32	384	42	83	= 0.433501 x head in ft.
3	1.3003	187.275	280.9	108	1296	94	187	Pressure in lbs per Sq. Ft.
4	1.7340	249.700	499.4	256	3072	166	383	= 62.425 x head in feet.
5	2.1675	312.125	780.3	500	6000	260	620	Total Pressure in Pounds
6	2.6010	374.550	1124	864	10368	375	750	= 31.2125 x (depth in ft) <sup>2</sup>
7	3.0345	436.975	1529	1372	16464	510	1019	Water at its maximum
8	3.4681	499.400	1998	2048	24576	666	1332	density .62.425 lbs per
9	3.9016	561.825	2528	2916	34992	843	1686	Cubic foot = 1 gram per
10	4.3351	624.250	3121	4000	48000	1047	2094	square centimetre.
11	4.7685	686.675	3777	5324	63888	1259	2518	corresponding to a Temp.
12	5.2021	749.100	4495	6912	82844	1498	2997	of 4° Cent = 39.2° Fahr.
13	5.6356	811.525	5275	8788	105456	1758	3517	HEAD PRESSURE
14	6.0691	873.950	6118	10976	131712	2039	4079	INCHES lbs per Sq. Ft.
15	6.5026	936.375	7023	13500	162000	2341	4682	1" 5.202083
16	6.9361	998.800	7990	16384	196608	2663	5327	2" 10.404167
17	7.3696	1061.225	9020	19652	235824	3007	6013	3" 15.606250
18	7.8031	1123.650	10113	23328	279336	3371	6742	4" 20.808333
19	8.2366	1186.075	11268	27436	329232	3756	7512	5" 26.010417
20	8.6701	1248.500	12485	32000	384000	4162	8323	6" 31.212500
21	9.1036	1310.925	13765	37044	444528	4588	9177	7" 36.414583
22	9.5372	1373.350	15107	42592	511104	5036	10071	8" 41.616667
23	9.9707	1435.775	16511	48668	584016	5503	11008	9" 46.818750
24	10.4042	1498.200	17978	55296	663552	5993	11985	10" 52.020833
25	10.8377	1560.625	19508	62500	750000	6503	13005	11" 57.222917
26	11.2712	1623.050	21100	70304	843648	7033	14067	12" 62.425000
27	11.7047	1685.475	22754	78732	944784	7584	15160	HEAD PRESSURE
28	12.1382	1747.900	24471	87808	1053696	8157	16314	INCHES lbs per Sq. Ft.
29	12.5717	1810.325	26250	97556	1170672	8750	17500	1 0.036126
30	13.0052	1872.750	28091	108000	1296000	9364	18727	2 0.072251
31	13.4387	1935.175	29995	119164	1429968	9998	19997	3 0.108377
32	13.8722	1997.600	31962	130072	1560864	10654	21308	4 0.144500
33	14.3057	2060.025	33990	143748	1724976	11330	22660	5 0.180623
34	14.7392	2122.450	36082	157216	1886592	12027	24055	6 0.216753
35	15.1727	2184.875	38236	171500	2058000	12745	25490	7 0.252879
36	15.6063	2247.300	40451	186624	2239488	13484	26967	8 0.289005
37	16.0398	2309.725	42730	202612	2431354	14243	28487	9 0.325130
38	16.4733	2372.150	45071	219488	2633856	15024	30048	10 0.361256
39	16.9068	2434.575	47474	237276	2847312	15824	31650	11 0.397381
40	17.3403	2497.000	49940	256000	3072000	16647	33293	12 0.433507
41	17.7738	2559.425	52468	275684	3307206	17489	34979	Thickness of 3/4" Lags-
42	18.2073	2621.850	55059	296332	3556224	18353	36706	h = depth of water in feet
43	18.6408	2684.275	57712	318028	3816336	19237	38475	t = thickness in inches
44	19.0743	2746.700	60427	340736	4088632	20142	40285	s = span in feet
45	19.5078	2809.125	63205	364500	4374000	21068	42137	F = extreme fibre stress in plank
46	19.9413	2871.550	66046	389344	4672128	22015	44031	t = 5/16" ①
47	20.3748	2933.975	68948	415292	4983504	22983	45965	Hardwood F = 1200
48	20.8083	3058.825	71914	442368	5308416	23971	47943	t = 5/8" ②
49	21.2418	3121.250	74941	470596	5647152	24980	49961	Softwood f = 800
50	21.6753	3183.675	78031	500000	6000000	26010	52021	t = 3/4" ③



Pressure varies from 0 at Top to a maximum = p at depth "h" (bottom)  
 $P = \frac{1}{2} \times 62.5 \times h^2$  lbs       $R_1 = \frac{1}{3} P = 62.5 h^2$        $R_2 = 62.5 h^2$   
 B.M. at distance "x" below A =  $R_1 x - 62.5 x^3 = 62.5 x (h^3 - x^3)$   
 A maximum for "x" =  $h \sqrt{\frac{1}{3}} = .577 h$   
 Maximum Bending Moment =  $.064 \times 62.5 h^3$   
 =  $4 h^3$  when units are feet & lbs.

Douglas L. McLean,  
 Ottawa-1909-

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