

GRAIN PRESSURE TESTS, No. 9.

Wheat.—Round Steel Bin.—Bottom Pressure Tests.

12" Diam. x 6' 6" deep.

Wheat 50 lbs. per cu. ft., equal to 62.2 lbs. per bushel.

Diaphragm 12" Diam. (Area 113.10 sq. inches) on bottom.

Grain weigh'd into bin.	Height of grain column	Equivalent fluid press'r	Pressure of grain on diaphragm.	Grain carried on bottom.		Grain carried on bin-sides.	
				Weight.	% of grain weighed in.	Weight.	% of grain weighed in.
lbs	ins.	ins. water.	ins. water.	lbs.		lbs.	
25	7.44	5.96	4 $\frac{1}{2}$	16.833	67.33	8.167	32.67
50	14.88	11.92	6 $\frac{1}{2}$	26.524	53.48	23.476	46.52
75	22.32	17.88	8 $\frac{1}{2}$	34.175	45.43	40.825	54.57
100	29.76	23.84	9 $\frac{5}{8}$	38.001	38.00	61.999	62.00
125	37.20	29.80	10	40.806	32.64	84.194	67.36
150	44.64	35.76	10 $\frac{1}{2}$	42.847	28.56	107.153	71.44
175	52.08	41.72	10 $\frac{3}{4}$	44.632	26.64	130.368	73.36
200	59.52	47.68	10 $\frac{1}{2}$	45.907	24.95	154.093	75.05
225	66.96	53.64	11 $\frac{1}{2}$	46.927	23.07	178.073	76.93
250	74.40	59.65	11 $\frac{1}{2}$	47.692	19.07	202.308	80.93
262 $\frac{1}{2}$	78.00	62.54	11 $\frac{1}{2}$	47.937	18.29	213.563	81.71

Carried on bottom 47.937 on sides 214.563

By sharply tapping sides of bin with hands, grain settled 2 $\frac{3}{4}$ in. from the top, and gave maximum guage reading of 13 $\frac{1}{4}$ in. water, equal total load on bottom of 54.063 lbs., or 20.5% of total grain in bin. Pressure per square inch on bottom = 11 $\frac{1}{2}$ in. water = 0.42394 lbs. per square inch x area of diaphragm 113.10 sq. inches = 47.957 lbs.