

D. ROWAN & CO. BOILERS N° 822

Circumferential seams Plate (front) $\frac{2.041 \times 3.416 - 1.375}{3.416} = \underline{60}$

" Rivet (back) $\frac{23 \times 1.77 \times 2}{30 \times 4.16 \times 1.485} = \underline{44.4}$

Longitudinal seams Plate $\frac{10.53 - 1.56}{10.53} = \underline{85.1}$

" Rivet $\frac{23 \times 1.92 \times 5 \times 1.875}{30 \times 10.53 \times 1.485} = \underline{87.8}$

Combined $\frac{10.53 - 3.12}{10.53} + \frac{87.8}{5} = 70.3 + 17.5 = \underline{87.8}$

Shell $\frac{45.5 \times 30 \times 85.1}{2.75 \times 192} = \underline{220}$

Furnaces $\frac{480 \times 18.5}{40.21} = \underline{220}$

Top ends $\frac{96 \times 2116}{451.56 + 462.25} = \frac{96 \times 2116}{913.81} = \underline{222}$

W.W. Space $\frac{72 \times 841}{76.56 + 196} = \frac{72 \times 841}{272.56} = \underline{222}$

Back tube plate $\frac{52 \times 576}{121.94} = \underline{247}$

Back tube plate in Compression
W.P. = $875 \times \frac{(4.4325 - 2.93) \times 25}{37.53 \times 4.4375} = 198$
requires tube plate 28/32 to give 222

Girders $\frac{371 \times 102.5 \times 56}{37.53 \times 28.53 \times 9} = \underline{221}$

C.C. top & sides $\frac{75 \times 529}{162} = \underline{244}$

Backs $\frac{75 \times 441}{68 + 68} = \underline{242}$

Bottoms $\frac{27}{32}$ thick

Lower back $\frac{86 \times 625}{175 + 68} = \underline{221}$

Main stay $(3\frac{1}{2})$ swelled end C = 108,209. $\frac{108209}{21\frac{3}{4} \times 21\frac{5}{8}} = \underline{230}$

" $3\frac{1}{2}$ " " " = 92767 - $\frac{92767}{23 \times 16\frac{1}{2}} = \underline{234}$

Screw stay $(1\frac{7}{8}) = \frac{15214}{68} = \underline{222}$

Screw stay $(1\frac{7}{8}) = \frac{21332}{8\frac{1}{2} \times 10\frac{3}{4}} = \underline{230}$

" $(1\frac{3}{4}) = \frac{18144}{81} = \underline{222}$

" $(2\frac{1}{4}) = \frac{32841}{11\frac{5}{16} \times 10\frac{3}{4}} = \underline{266}$

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