15423 Iron

S.S. "Dorunda"

No. Size and Description of Boilers Rec 25/11/75

Four. Round. Horizontal 14'·0" dia. × 9'·0" long. with 3 furnace in each. fired Athwartships. and Superheater. —

Working pressure 65 lbs

Shell plating $\frac{16}{16}$" (Bottom Boiler) 4 plates in the Circumference, and 3 widths in the length. Circumferential joints lapped. Single riveted. Rivets 1⅛" dia × 3½" pitch. Longitudinal joints lapped, treble riveted, Rivets 1⅛" dia × 4¼" pitch. End plating $\frac{12}{16}$" attached to angles 4½" × 4½" × ¾". Single riveted. 3¼" pitch. A double plate at Manholes.

$$\text{Formula} \quad \frac{51520 \times 2 \times 73\%}{166" \times 6\cdot5} = 69\cdot7 \text{ lbs}$$

Combustion Chamber plating $\frac{9}{16}$"   The top is supported by Screws passing through ∄ Bridge Bearers 1¼" dia. 8½" × 8½" pitch. Bearers are 6" deep × ½" thick.   Screw Stays 1½" dia = 1·76 Sect. area, 8½" × 9". pitch = 2825 lbs per inch

$$\text{Formula for flat plates} \quad \frac{100 \times 64}{76\cdot5} = 83\cdot6 \text{ lbs}$$

Furnace plating $\frac{9}{16}$" They are 5'·9" long × 3'·3" dia. butt joints fitted with double Straps, and riveted to front plate which is flanged.

$$\text{Formula for Flues} \quad \frac{89,600 \times \cdot26}{5\cdot75 \times 39} = 99 \text{ lbs}$$

Tube plates $\frac{12}{16}$" protected by 102 tubes 3¼" outside dia. 15 of which are Stay tubes in centre chambers, & 90 in Side chambers 15 of which are Stay tubes Screwed & fitted with Nuts. —

Longitudinal Stays 2" dia. = 3·14" Sect. area. 15" × 15" pitch. = 225" area. = 465·7 lbs per inch. —

Superheater. 10'·0" dia. × 8'·0" high, with Single Flue 7'·0" dia. Outside plating $\frac{12}{16}$" lap jointed. double riveted. inside plating $\frac{9}{16}$" End plating is riveted to angle iron rings 4½" × 4½" × ¾". Outer & Inner Shells are Stayed by Screwed Stays 1½" dia. —

Direct Spring loaded Safety Valves are fitted 4½" dia. They commenced to Blow at 64½ lbs. accumulated pressure attained 67½ lbs. —

James Mollison
Glasgow Nov 12th 1875

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