

Port *Liverpool* *August 1878* *31380 tons*
 Details of Main Boilers of the Steam Ship *"British Empire"* 2152.69 tons

Diameter *11' 6"* Length *17' 6"*

Thickness of shell plates *15" / 16"*

Description of riveting of longitudinal joints *Double butt straps riveted* of circumferential joints *Double riveted laps*

Pitch of rivets ditto *5"* ditto *3 3/4"*

Diameter of rivets ditto *1 1/4"* ditto *1 1/4"*

Breadth of butt straps ditto *14"* ditto *6"*
 Top of plating

No. Size of manholes in circular shell *16" x 12"*

How compensated for *plate rings*

Number of furnaces in boiler *Six*

Diameter of furnaces *2' 10"* Length of furnaces *6' 6"*

Thickness of furnace plates *Top 15/32" Bottom 14/32"*

Description of joint of furnaces *Welded*

Port Whether strengthened with rings *Yes* Greatest length between rings

Thickness of combustion chamber plating *7/16"*

Diameter of screw stays to ditto *1 1/4" & 1 3/8"* pitch of stays *8 1/2" fitted with double butts*

End plates, thickness *3/4"*

Diameter of longitudinal stays to end plates *2 1/2"* pitch of ditto *16 1/2" x 13"*

How stays are secured *Double nuts and washers*

Diameter of tubes *3 1/4" O. S.* pitch of tubes *4 3/4" x 4 1/2"*

Thickness of tube plates *4 1/4" & 1 1/8"*

Stayed by *Tube stays* pitch of stays *14 1/4" x 13 1/2"*

Description of steam receiver *Cylindrical horizontal*

Diameter of ditto *3' 6"* length of ditto *17' 6"*

Thickness of plating of ditto *5/16"* ends *10/16"*

how stayed *2 Gussat plates*

*Top of combustion chambers stayed by
 bridge stays and bolts.
 The rivet holes in shell plating drilled
 after bending.*

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S.S. "British Empire" 21380 Tons

Shell plating,

$$\frac{515.20 \times 1.87 \times .75}{138 \times 6.0} \} = 84 \text{ lbs.}$$

Per^{ce}nt^{ge} of str^{ength} }
in rivets

$$\frac{(1.22 \times 4) \times 100}{5 \times .934} \} = 104 \%$$

Per^{ce}nt^{ge} of str^{ength} }
in joints

$$\frac{(5 - 1.25) \times 100}{5} \} = 75\%$$

Furnace plates,

$$\frac{89600 \times .219}{4.0 \times 34} \} = 144 \text{ lbs.}$$

Flat plates,

$$\frac{120 \times 49}{68} \} = 86 \text{ lbs.}$$

Steam-chests.

$$\frac{515.20 \times 1 \times .60}{42 \times .65} \} = 113 \text{ lbs.}$$

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