

R is the radius of curvature of the end in inches, and it must not exceed the diameter of the shell (the radius shall be the inner radius for ends concave to pressure, and the outer radius of curvature for ends convex to pressure);

t is the thickness of the end plate in thirty-seconds of an inch, and must not be less than the thickness of the cylindrical shell plate.

The inside radius of curvature of the flange must not be less than four times the thickness of the end plate, and in no case less than $2\frac{1}{2}$ in.

When the end has a manhole in it $\frac{4}{32}$ in. must be added to the thickness of the plate as calculated from the above formula.

The total depth of the flange of the manhole from the outer surface in inches is to be at least equal to

$$\sqrt{T \times W}$$

where T is the thickness of the plate in inches and W is the minor axis in inches.

26. *Stays*.—The working-pressure for solid-bar stays shall be calculated from the following formula:—

$$\text{W.P.} = \frac{d^2 \times C}{A}$$

where W.P. is the working-pressure in pounds per square inch;

d is the diameter of the stay at the bottom of the thread; or, where the stays have enlarged ends and the body of the stay is smaller in diameter than at the bottom of the thread, d is the diameter of the smallest part of the body;

C = 7,100 for steel stays, or iron stays not welded;

C = 3,900 for welded iron stays;

A is the area in square inches supported by one stay.

NOTE.—For stays screwed Whitworth thread the diameter of the stay at the bottom of the thread is

$$d = D - \frac{1.28}{N}$$

where D is the diameter of the stay over the threads, and N is the number of threads per inch the stay is screwed.

The area of a circular end plate required to be supported by stays shall be determined as the area of a circle whose circumference passes through points a distance X, measured, where the plate is flanged, from the commencement of curvature, or from a line two and a half times the thickness of the plate distant from the side of flange next the inner radius of corner, whichever is nearer to the side of flange. If the plate is not flanged the distance X shall be measured from the centre-line of rivets. X shall not be greater than

$$X = \sqrt{\frac{22.5 \times t^2}{\text{W.P.}}}$$

where t is the thickness of the plate in thirty-seconds of an inch.

27. *Diagonal Stays*.—The working-pressure for diagonal stays shall be calculated as follows:—

$$\text{W.P.} = \frac{d^2 \times C \times l}{A \quad L}$$

where W.P., d , and C and A have the same meanings as above;

L is the length of the diagonal stay;

l is the length of a line drawn from the centre of the palm of the diagonal stay, at right angles, to the surface supported.

The ends of diagonal stays shall not be bent, but shall be fitted with bevelled washers and nuts, or they may be secured with pins to tee or angle bars riveted to the end plates. The cross-sectional area of pins in double shear shall be at least three-quarters of the required area of the stay.

The net sectional area of palms and the area of rivets shall be at least one and a quarter times the required area of the stay.

28. *Nuts for Stays*.—Longitudinal stays shall not have their ends merely riveted over, but shall be secured with nuts at each end, and with or without washers, loose or riveted, under the nuts.

29. *Inspection Openings*.—Air-receivers shall be fitted with inspection openings at each end, not less in number and dimension than the following:—

Receivers up to and including 24 in. diameter—two $2\frac{1}{2}$ in. by $3\frac{1}{2}$ in. handholes, or one manhole:

Receivers above 24 in. diameter and up to and including 36 in. diameter—two 4 in. by 6 in. handholes, or one manhole: