

Calculations

Staybolt stresses:

Stay bolt under greatest load, maximum stress _____ psi

Location _____

Crown stay, crown bar rivet, or crown bar bolt under greatest load, max. stress _____ psi

Location _____

Combustion chamber stay bolt under greatest load, maximum stress _____ psi

Location _____

Braces:

Round or rectangular brace under greatest load, maximum stress _____ psi

Location _____

Gusset brace under greatest load, maximum stress _____ psi

Location _____

Shearing stress on rivets:

Greatest shear stress on rivets in longitudinal seam _____ psi

Location (course #) _____ ; Seam Efficiency _____

Boiler shell plate tension:

Greatest tension on net section of plate in longitudinal seam _____ psi

Location (course #) _____ ; Seam Efficiency _____

Boiler plate and components, minimum thickness required @ tensile strength:

Front tube sheet _____ @ _____ Rear flue sheet _____ @ _____

1st course at seam _____ @ _____ 1st course not at seam _____ @ _____

2nd course at seam _____ @ _____ 2nd course not at seam _____ @ _____

3rd course at seam _____ @ _____ 3rd course not at seam _____ @ _____

Roof sheet _____ @ _____ Crown sheet _____ @ _____

Side wrapper sheets _____ @ _____ Firebox side sheets _____ @ _____

Back head _____ @ _____ Door sheet _____ @ _____

Throat sheet _____ @ _____ Inside throat sheet _____ @ _____

Combustion chamber _____ @ _____ Dome, top _____ @ _____

Dome, middle _____ @ _____ Dome, base _____ @ _____

Arch tubes _____ @ _____ Dome, lid _____ @ _____

Water bar tubes _____ @ _____ Thermic siphons _____ @ _____

Dry pipe _____ @ _____ Circulators _____ @ _____

Notes. 1. If tensile strength used is greater than 50,000 psi for steel or greater than 45,000 psi for wrought iron, supporting documentation must be furnished.

2. Any shell dimension less than 1/4" in thickness may not be adequate for support of or by other structures, particularly where threads or staybolts are concerned. Applicable codes should be consulted.

Boiler Steam Generating Capacity: _____ pounds per hour

The following may be used as a guide for estimating steaming capacity:

Pounds of Steam Per Hour Per Square Foot of Heating Surface:

Hand fired 8 lbs. per hr.

Stoker fired 10 lbs. per hr.

Oil, gas or pulverized fuel fired 14 lbs. per hr.