specifically in his certificate, fix the working pressure of such boiler at less than two-thirds of the test pressure:

Discretion allowed to Inspector as to working pressure.

6. And these rules shall be observed in all cases, unless the proportion between such boilers and the cylinders, or some other cause, renders it manifest that their application would be unjust, in which case the Inspector may depart from these rules if it can be done with safety; but in no case shall the working pressure allowed exceed the proportion hereinbefore mentioned, as compared with the hydrostatic test:

Determination of external working pressure on flues, &c.

7. The external working pressure to be allowed on circular furnaces and flues subjected to such pressure, when the longitudinal joints are welded or made within a butt strap, shall be determined by the following formula:—

Formula.

The product of 90,000 multiplied by the square of the thickness of the plate in inches,—divided by the length of the flue or furnace in feet plus 1, multiplied by the diameter in inches,—will be the allowable working pressure per square inch in pounds,—provided it does not exceed that found by the following formula,—

Formula.

The product of 8,000 multiplied by the thickness of the plate in inches, divided by the diameter of the furnace or flue in inches, will be the allowable working pressure per square inch in pounds,—

Length, how understood.

The length of the furnace to be used in the first formula being the distance between the rings if the furnace is made with rings; and that one of the two formulæ which gives the lowest pressure being the one by which the Inspector shall be guided:

Allowable pressure on flat surfaces

8. On flat surfaces the allowable working pressure shall not exceed six thousand pounds to each effective square inch of sectional area of the stays supporting it. The pressure to be allowed on plates forming flat surfaces shall be that found by the following formula:—

$$\frac{C \times (T+1)^2}{S-6} = \text{Working pressure in pounds per square inch, where—}$$

T=Thickness of plate in sixteenths of an inch;

S=Surface supported in square inches;

C=100; but when the plates are exposed to the impact of heat or flame, and steam only is in contact with the plates on the opposite side, C is to be reduced to 50: