

Public Works (1897) Department.

G.O., No. 31042

DATED 8 Nov 1897

11/11/97

[Despatch Abstract.]

Madras Steam Boilers' and Prime Movers Act. Approving
the Sanitary Engineer's recommendations regarding certain
rules under the — and directing that a notification
proposing ~~the~~ additional rules under the
act be published in the Madras Gazette
for consideration of any suggestions with respect to
those rules which may be received on or before
15th December 1897.

Not
Bomby who
sent to Sanitary Eng^r
in compliance with
19.6.97
18.9.97

Indexed

100
26/4

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—again the following paper:—

G.O., No. 2469 W., dated 6th September 1897.

READ—also the following papers:—

From Messrs. Richardson & Cruddas, dated 25th June 1897, No. 247.

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Secretary to Government, Public Works Department, dated Fort St. George, 7th July 1897, No. 1183.

I have the honour to inform you that, since the date of my No. 788 of 29th April 1897, the Boiler Inspector has found many deficiencies in the rules under the Boiler Act and has made several proposals for their amendment.

2. As the Madras rules were founded on the Bombay rules, it occurred to me that there must have been additions to the Bombay rules and on enquiry we find this to be the case.

3. I enclose a copy of the additional rules published on the 5th August 1896, and I therefore recommend that these rules should be similarly added to our existing rules noting the following:—

- (1) The new rules include a rule (addition to rule 10) which covers the rules sanctioned by Government in G.O., No. 1018 W. of 10th April 1897, and this latter rule should therefore be cancelled if new rules are approved.
- (2) The rule proposed under notification in G.O., No. 1444 W. of 28th May 1897, should also be cancelled as it is also covered by the additional rules added to rule 10 of Bombay original rules.
- (3) The words (if the proposed rules are sanctioned) "Add to rule 10 of the said rules" should be "Add to rule 22 of the said rules."
- (4) In the second paragraph of these additional rules the Boiler Inspector thinks that the words "a minimum of 27 tons may be used" should read "a minimum of 26 tons may be used," because, according to the adviser of the Board of Trade, steel may be found fit to bear only this tension.
- (5) On page 2 the words "see last paragraph of rule 10" should read "see last paragraph of rule 22."

4. I enclose a copy of the original Bombay rules for reference.

From the Sanitary Engineer, to Government, dated 12th July 1897, No. 1204.

" " " " 27th September 1897, No. 1548.

ORDER—No. 3104 W., dated 8th November 1897.

The proposals of the Sanitary Engineer are approved.

2. The following notification will be published in the *Fort St. George Gazette*:

NOTIFICATION.

In exercise of the power conferred by section 23 of Act III of 1893, the Madras Steam Boilers and Prime Movers Act, His Excellency the Governor in Council proposes to make the following rules under the said Act. They will appear as additions to the rules published in the *Fort St. George Gazette* of the 26th January 1897.

"Add as note to Rule 19 Y of the said rules."

The recognition of a certificate under this rule is limited to new boilers when first licensed and to boilers not less than ten years old, provided they have not shown any defect during that period.

Add to Rule 22 of the said Rules.

The constants for plain furnaces 10 per cent.

In cases where the Inspector is satisfied from tests made on the steel from which the boiler has been constructed that it is of a certain tensile strength per square inch, that strength may be substituted for the 47,000 lb. (allowed for iron plates) in the formula given in Rule 19, but in no case is a greater strength than 32 tons (71,680 lb.) to be allowed. In other cases, provided there is sufficient proof that the boiler is of steel, a minimum of 26 tons may be used.

Solid steel screwed stays which have not been welded or otherwise worked after heating may be allowed a working stress of 9,000 lb. per square inch of net section. Steel stays which have been welded or worked in the fire have been found to be unreliable; therefore, they should not be passed.

When furnaces are machine-made by Messrs. The Leeds Forge Company, of the Fox corrugated and Morison suspension types, or by Messrs. John Brown & Co., Sheffield, of the Purves ribbed and grooved type, if they are

practically true circles, and the plates not less than $\frac{1}{8}$ inch thick, the working pressure is found by the following formula:

$$\frac{C \times T}{D} = \text{working pressure.}$$

C = 14,000 for Fox's corrugated and Brown's ribbed and grooved furnaces.

C = 13,500 for Morison's suspension furnace.

T = thickness in inches.

D = outside diameter in inches, measured at the bottom of the corrugations when the furnace is of the corrugated or suspension type, or over the plain parts when it is of the ribbed and grooved description.

In Fox's corrugated furnaces, the pitch of the corrugations and the length of the plain parts at the ends should not exceed 6 inches, and in Morison's suspension furnaces the pitch should not exceed 8 inches, and the length at the ends 5 inches. In both descriptions of furnaces the depth from top of corrugations outside to bottom of corrugations inside should not be less than 2 inches, and the plates at the ends should not be unduly thinned in the flanging.

The plates of ribbed and grooved furnaces should be formed by rolling, the ribs should not be less than $1\frac{1}{2}$ inches above the plain parts, and the depth of the grooves not more than $\frac{3}{4}$ inch, the length between the centres of the ribs not over 9 inches, and that of the plain parts at the ends not over 6 inches, and the ends rolled slightly thicker than the plain parts, and not reduced at any part by flanging, &c., below the thickness of the body of the furnace.

If the furnace is rivetted in one or more lengths the case should be submitted for consideration.

When horizontal furnaces of ordinary diameter are constructed of a series of rings welded longitudinally, and the ends of each ring flanged and the rings rivetted together, and so forming the furnace, the working pressure is found by

the following formula, provided the length in inches between the centres of the flanges of the rings is not greater than $(120 T - 12)$, and the flanging is performed at one heat by a suitable flanging machine, and also the conditions which follow the formula are complied with:

$$\frac{9,900 \times T}{3 \times D} \left(5 - \frac{l + 12}{60 \times T} \right) = \text{working pressure.}$$

T = thickness of plate in inches.

l = length between centre of flanges in inches.

D = outside diameter of furnace in inches.

The radii of the flanges on the fire side should be about $1\frac{1}{2}$ inches. The depth of the flanges from the fire side should be three times the diameter of the rivet plus $1\frac{1}{2}$ inches, and the thickness of the flanges should be as near the thickness of the body of the plate as practicable. The distance from the edge of the rivet holes to the edge of the flange should not be less than the diameter of the rivet, and the diameter of the rivets at least $\frac{3}{4}$ inch greater than the thickness of the plate. The depth of the ring between the flanges should be not less than three times the diameter of the rivets, the fire edge of the ring should be about the termination of the curve of flange, and the thickness not less than half the thickness of the furnace plate. Turned rings are such as may be considered a first-class method of construction.

The holes in the flanges and rings should be drilled in place if practicable, but if not drilled in place they should be drilled sufficiently small, and afterwards when in place rimmed out until the holes are quite fair, the holes should be slightly tapered and the heads of the rivets of moderate size.

After all welding, and after all flanging and heating, each ring should be efficiently annealed in one operation.

Compressive stress on tube plates.

$$\frac{(D - d) T \times 20,000}{W \times D} = \text{working pressure.}$$

D = least horizontal distance between centres of tubes in inches.

d = inside diameter of ordinary tubes in inches.

T = thickness of tube plate in inches.

W = extreme width of combustion-box in inches from front of tube plate to back of fire box, or distance between combustion-box tube plates when boiler is double-ended and the box common to the furnaces at both ends.

When full allowance is wished the rivet section, if iron, in the longitudinal seams of cylindrical shells should, when those seams are lapped, be at least $\frac{1}{8}$ times the net plate section, and if steel rivets are used, their section should

Plate and rivet section.

be at least $\frac{2}{3}$ of the net section of the plate, if the tensile stress of the rivets is not less than 26 tons and not more than 32 tons per square inch. In calculating the working pressure, the percentage strength of the rivets may be found in the usual way by the Board of Trade rules, but in the case of iron rivets the percentages found should be divided by $\frac{1}{8}$, and in the case of steel rivets by $\frac{2}{3}$, the results being the percentages required. If the percentage strength of the rivets by calculation is less than the calculated percentage strength of the plate, calculate the working pressure by both percentages. When using the percentage strength of the plate 4.5 plus the additions suitable for the method of construction as by the rules for iron boilers, may be used as the nominal factor of safety, but when using the percentage strength of the rivets 4.5 may be used as the factor of safety. The less of the two pressures so found is the working pressure to be allowed for the cylindrical portion of the shell, or otherwise in accordance with the formulæ in Appendix.

Add as an Appendix to the said Rules.

APPENDIX.

(See last paragraph of Rule 22.)

CYLINDRICAL BOILER SHELLS.

JOINTS WITH DRILLED HOLES.

Formulæ for ordinary chain-riveted and ordinary zigzag-riveted joints, and for joints of these descriptions, when every alternate rivet in the outer or in the outer and inner rows have been omitted—

Let E = distance from edge of plate to centre of rivet in inches.

V = distance between rows of rivets in inches.

V¹ = distance between inner and middle row of rivets in inches for joints J and K (Figs. 19 and 15).

B = boiler pressure in lb. per square inch.

C = 1 for lap or single butt joints.

C = 1.75 for double butt joints.

d = diameter of rivets in inches.

D = inside diameter of boiler in inches.

F = factor of safety for shell plates, as by clause 87 or clause 103.

n = number of rivets in one pitch.

p^d = diagonal pitch in inches.

p^v = diagonal pitch in inches between inner and middle rows of rivets in inches for joint J.

p = greatest pitch of rivets in inches.

r = percentage of plate left between holes in greatest pitch.

R = percentage of rivet section.

R¹ = percentage of combined plate and rivet section.

S = tensile strength of material in lb. per square inch of section.

T = thickness of plate in inches.

T¹ = thickness of each butt-strap in inches.

% = least value of r, R, R¹, as the case may be, divided by 100.

When joints are used in boiler construction other than those shown in the attached sketches, or when any of the rivets are pitched less than two diameters apart, the particulars of such joints should be submitted for the consideration of the Senior Inspector.

ORDINARY CHAIN AND ZIGZAG RIVETTED JOINTS.

Iron plates and iron rivets or steel plates and steel rivets:

$$\frac{100(p - d)}{p} = r.$$

Iron plates and iron rivets:

$$\frac{100 \times d^2 \times .7854 \times n \times C}{p \times T} = R.$$

Steel plates and steel rivets:

$$\frac{100 \times 23 \times d^2 \times .7854 \times n \times C \times F}{4.5 \times 28 \times p \times T} = R.$$

GIVEN C, d, F, n, T, TO FIND p, SO THAT r AND R ARE EQUAL.

Iron plates and iron rivets:

$$\frac{d^2 \times .7854 \times n \times C}{T} + d = p.$$

Steel plates and steel rivets:

$$\frac{23 \times d^2 \times .7854 \times n \times C \times F}{4.5 \times 28 \times T} + d = p.$$

GIVEN C, F, n, T, r, TO FIND p AND d.

Iron plates and iron rivets:

$$\frac{r \times T}{(100 - r) \times .7854 \times n \times C} = d.$$

$$\frac{100 \times r \times T}{(100 - r)^2 \times .7854 \times n \times C} = p.$$

Steel plates and steel rivets:

$$\frac{4.5 \times 28 \times r \times T}{23 \times (100 - r) \times .7854 \times n \times C \times F} = d.$$

$$\frac{100 \times 4.5 \times 28 \times r \times T}{23 \times (100 - r)^2 \times .7854 \times n \times C \times F} = p.$$

Iron plates and iron rivets or steel plates and steel rivets when d is found first, then:

$$\frac{100d}{100 - r} = p.$$

BUTT-STRAPS.

Iron plates and iron butt-straps or steel plates and steel butt-straps:
Double butt-straps:

$$\frac{5 \times T}{8} = T^1$$

Single butt-straps:

$$\frac{9 \times T}{8} = T^1$$

FOR DISTANCE BETWEEN ROWS OF RIVETS, &c.

Iron and steel:

$$\frac{3 \times d}{2} = E.$$

Chain-riveted joints (Figs. 2, 4, 6, 9, 11), not less than:

$$2 \times d = V.$$

See note at the end.

Zigzag-riveted joints (Figs. 3, 5, 7, 10, 12):

$$\sqrt{\frac{(11p + 4d)(p + 4d)}{10}} = V.$$

Diagonal pitch (Figs. 3, 5, 7, 10, 12):

$$\frac{6p + 4d}{10} = p^d.$$

TO DETERMINE THE WORKING PRESSURE.

$$\frac{S \times \% \times 2 T}{F \times D} = B.$$

CHAIN AND ZIGZAG RIVETTED JOINTS IN WHICH EVERY ALTERNATE RIVET HAS BEEN OMITTED IN THE OUTER ROW, OR IN THE OUTER AND THE INNER ROWS SUCH AS ARE SHOWN BY THE FOLLOWING SKETCHES:—

Iron plates and iron rivets or steel plates and steel rivets:

$$\frac{100 (p - d)}{p} = r.$$

Iron plates and iron rivets:

$$\frac{100 \times d^2 \times .7854 \times n \times C}{p \times T} = R.$$

Steel plates and steel rivets:

$$\frac{100 \times 23 \times d^2 \times .7854 \times n \times C \times F}{4.5 \times 28 \times p \times T} = R.$$

Iron plates and iron rivets or steel plates and steel rivets:

$$\frac{100 (p - 2d)}{p} + \frac{R}{n} = R^1.$$

BUTT-STRAPS.

Where the number of rivets in the inner row is double the number in the outer row—

Iron plates and iron butt-straps or steel plates and steel butt-straps—

Double butt-straps:

$$\frac{5 \times T (p - d)}{8 \times (p - 2d)} = T^1.$$

Single butt-straps:

$$\frac{9 \times T (p - d)}{8 \times (p - 2d)} = T^1.$$

When the number of rivets in the inner row is the same as in the outer row—

Double butt-straps:

$$\frac{5 \times T}{8} = T^1.$$

Single butt-straps:

$$\frac{9 \times T}{8} = T^1.$$

FOR DISTANCE BETWEEN ROWS OF RIVETS, &c.

Iron and steel:

$$\frac{3 \times d}{2} = E.$$

Chain-riveted joints (Figs. 13, 14, 15, 16):

$$\sqrt{\frac{(11p + 4d)(p + 4d)}{10}} = V \quad \left\{ \begin{array}{l} \text{The greater of these two values of } V \text{ to be} \\ \text{used. See note at the end.} \end{array} \right.$$

or

$$2 \times d = V$$

For joint K (Fig. 15):

$$2 \times d = V^1. \text{ See note at the end.}$$

Zigzag riveted joints (Figs. 17, 18, 19, 20):

$$\sqrt{\frac{(11p + d)(\frac{1}{2}p + d)}{10}} = V.$$

Diagonal pitch (Figs. 17, 18, 19, 20):

$$\frac{3}{10}p + \frac{1}{2}d = p^d.$$

For joint J (Fig. 19):

$$\sqrt{\frac{(11p + 8d)(p + 8d)}{20}} = V^1.$$

Diagonal pitch (Fig. 19):

$$\frac{3p + 4d}{10} = P^d.$$

TO DETERMINE THE WORKING PRESSURE—

$$\frac{S \times \% \times 2 T}{F \times D} = B.$$

MAXIMUM PITCHES FOR RIVETTED JOINTS.

T = Thickness of plate in inches.

p = Maximum pitch of rivets in inches, provided it does not exceed 10 inches.

C = Constant applicable from the following table:

Number of Rivets in one Pitch.	Constants for Lap Joints.	Constants for Double Butt Strap Joints.
1	1.31	1.75
2	2.62	3.50
3	3.47	4.63
4	4.14	5.52
5	—	6.00

$$(C \times T) + 1\frac{5}{8} = p.$$

When the work is first class, such pitches may be adopted so far as safety is concerned, yet in some cases it may be well not to adopt the greatest pitch found by the formula. The maximum pitch should *not*, however, exceed 10 inches with the thickest plates for boiler shells. If in any case the pitch is found to exceed that arrived at by the foregoing formula, for the particular description of joint and thickness of plate, such pitches should *not* be passed, but in all cases reported.

NOTE.—The minimum value of V or V¹ for chain riveted joints is given as 2d, but $\frac{4d + 1}{2}$ is more desirable."

The rules proposed in the notifications published on pages 566 and 738 of the *Fort St. George Gazette*, dated 4th May and 15th June 1897, respectively, which are covered by the additions now made to rule 22, will be cancelled.

The Government will consider any suggestions made in respect of the above rules which may be received on or before the 15th December 1897.

(True Extract.)

Under Secretary to Government.

To the Superintendent, Government Press.
 „ the Sanitary Engineer to Government.
 „ the Local and Municipal Department.
 „ the Judicial Department.
 „ Messrs. Richardson and Cruddas.

Exd. T. K. Narayana Aiyangar.

[$\frac{40}{500}$]

H. S. the Governor

Papers to be read in proceedings:—

Again G.O., dated 6th September

1897, No. 2469 W

Again G.O., dated

189 , No.

Current No. 9893

of 1897, dated 7th July

, from the Sanitary Engr. to Cont.

Print

Quote

Quote

Quote

" " 6602

" 1897, " 25th June

" Messrs. Richardson & Criddle

" " 9894

" 1897, " 12th July

" the Sanitary Engr. to Cont.

" " 9646

" 1897 " 27th Sept

" — do — do

ORDER.

The proposals of the Sanitary Engineer are approved.

2. The following notification will be published in the Fort Saint George Gazette

Notification

In exercise of the power conferred by Section 23 of Act III of 1893, or Madras Steam-boilers and Locomotives Act, His Excellency the Governor-in-Council propose to make the following rules under the said Act. They will apply as additions to the rules published in the Fort Saint George Gazette of the 26th January 1897.

"Add as Note to Rule 19 V
said rules

The recognition of a certificate
this rule is limited.

& G.O. 215 W of 23rd January 1897

new boilers when first licensed
and to boilers not less than 10 years
old, provided they have not shown
any defect during that period.

(Here Enter Bombay Additional
rules as corrected.)

X X X

The rules proposed in the notifi-
cations published on pages 566 and
38 of the Fort Saint George Gazette
of 4th May and 15th June 1897 res-
pectively which are covered by
the additions now made to Rule
2 will be cancelled.

The Govt. will consider any
suggestions made in respect of the
above rules which may be received
before the 15th December 1897.

W
13.10.97

To
The Supt. Govt. Press
" Sanitary Engrs. to Govt.
" L & M. Department
" Judicial Department
Messrs. Richardson & Cuddas

26/11/97

These words should not be printed
Print the accompanying printed rules.
here

* G.O. 1018 W of 10 April 1897.

* G.O. 1444 W of 28 May 1897.

W

For favour of orders when
the draft G.O. may now issue.

The only modification
proposed in the Bombay
Additional Rules is the
substitution of "26" for "27"
tons fixed in those rules as
the maximum tensile
strength of steel. This altera-
tion has been proposed accor-
ding to the opinion of the
adviser of the Board of Trade
vide para 5 of the Note and
para 3 (4) of the Sanitary
Engineer's letter No: 1183 d/7th
July 1897.

Yes
W. H. H. / 26/11/97

Issue the G.O.
on
26/11/97

May

26/11/97

Note.

This is a purely technical matter on which I am not competent to give an opinion, except that it seems desirable to adopt the rules of the N'way Inst. which are commended in our engineering advisers.

Ad

15710797

trial

was issued by the Boiler Inspectors.

The Sanitary Engineer reported that the boiler in question, although under steam only 300 days, was five years old, and that it might have been exposed to action during that time, and suggested therefore that the recognition of the certificate under rule 19 V should be limited to new boilers when first licensed, and to boilers not more than 10 years old, provided they have not shown any defect during that period. This suggestion was ordered to be considered in connection with the amendment of the rules under the Madras Steam-boilers and Prime-movers act vide G. O. No: 2469 W of 6th September 1897. It is therefore proposed in the accompanying draft order to add a Note to rule 19 V in the terms suggested by the Sanitary Engineer which appear

Flag A.

to be reasonable.

3. In his letter No. 1183 of 7th July 1897, the Sanitary Engineer reports that the Boiler Inspector found many defects in the rules framed under the Boiler Act and submitted several proposals for their amendment. As the Madras rules were ~~from~~ based on the Bombay rules, it occurred to the Sanitary Engineer that there ^{must} ~~should~~ have been some additions to the Bombay rules and on inquiry this was found to be the case. The Sanitary Engineer forwards a copy of the additional rules published in Bombay and recommends that these rules be added to the present Madras rules. This recommendation may be approved, as the original rules framed by this Board were copied from the Bombay rules.

4. As the rules published in G. O. No: 1018 W of 10th April 1897

Flag B.

1444 Wd/28 May 1897 are
ruled by the additional rules
now introduced, the former
will be cancelled as suggested
by the Sanitary Engineer.

The Sanitary Engineer
states that the Boiler Inspector
is of opinion that the words
"a minimum of 27 tons ^{weight} may
be used" in the second para
of the Bombay additional
rules should be altered into
"a minimum of 26 tons may
be used", as according to the
adviser of the Board of Trade,
steel may be found fit to
bear only this ~~tension~~ tension.

In their letter No: P. T. 247
d/25 June 1897, Messrs. Richard-
son and Buddas, Bombay,
request that the Bombay
rules may be adopted in this
Presidency. As it is proposed
to introduce these rules with
the modification referred to
in the above para, no further

action is necessary.

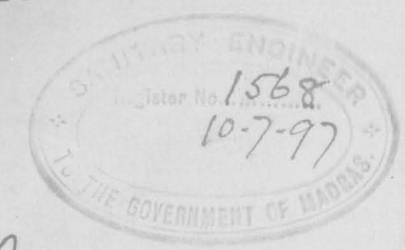
May

13.10.
W

R.H.
2.11.97

Public Works (1897) Department.

CURRENT No. 6602



No. 3134 C, dated 9th July 1897
Order

Referred to the
Sanitary Engineer for
remarks with reference
to G.O. No. 1444W, dated 28th
May 1897.

From Messrs Richardson & Co.
Bombay.

No. 247

J. H. C. Col., R.E.
Secretary to Government.

Dated 25th June 1897
Received 30th —
Enclosures 7-7-97

Spare copies

SUBJECT.

Steel boilers offers certain
suggestions in regard to
the notification as to —
in the Fort St. George Gazette
of 15th June 1897, page 738

BACK PAPERS.

FURTHER PAPERS.

No.

Date.

No.

Date.

RICHARDSON & CRUDDAS.
BOMBAY.
FOREIGN TELEGRAPHIC ADDRESS:
"IRONWORKS."

CORRESPONDING FIRM:
RICHARDSON & HEWETT.
LONDON.

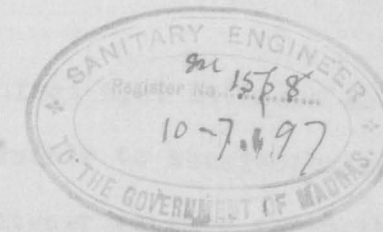
BOMBAY,

25th. June

1897

P.T.

247
No.



The Secretary to Government

MADRAS.

Sir,

Re. Notification as to steel boilers in the "Fort St. George" Gazette dated 15th. June 1897 page 738.

We have the honor to state that our attention has been drawn to the above in which 58240 lbs (26 tons) per square inch is allowed for the ultimate tensile strength of the steel used in cylindrical boiler shells.

We would point out

- 1st. that the Manchester Steam Users Association's specification to which we build all our Lancashire boilers allows from 26 tons to 30 tons per square inch.
- 2nd. that the Bombay Government Gazette No.3440 of August 1896 allows from 27 to 32 tons.
- 3rd. that the Calcutta Gazette Notification No.318 J.D. of October 7th. 1896 paragraph 12 - states that the tensile strength of the steel for cylindrical shell plates should be from 28 to 32 tons.

We have made and supplied Lancashire Boilers to Madras & hold test certificates of the steel for the shell plates all of which are over 28 tons the steel being made by the Siemens Martin process.

Might we venture to point out that if a maximum of 26 tons only is

is allowed the working pressure of the boiler is consequently reduced. Also that if the boiler was moved to another Presidency an increased pressure would be allowed.

We would also call your attention to the fact that although an arbitrary rule such as it is proposed to introduce, is unfair to manufacturers of first class boilers who invariably use a steel of higher tensile strength than is allowed for, it also enables the owner of a boiler made of steel of inferior quality to insist on the allowance of 26 tons although the steel might not be of that strength.

We would venture to suggest that the rules in force in Bombay would be more equitable. They are similar to those of the Board of Trade which are as follows :-

29	tons	for steel where minimum per square inch is not less than 27 & maximum not greater than 32 tons.
30	do do	where minimum is 28 tons & the case is submitted to the Board.
28	do do	for ordinary requirements where great lightness is not an object.

We have the honor to b,

Sir,

Your obedient Servants,

Richardson & Co.

Public Works
Local & Munl. (1897) Department.

CURRENT No. 9893

C.F.
8/10

Full for 10736

From

The Sanitary Engineer
to Govt

Order.

No. 1183

Dated 7. 7. 97

Received 9. 7. 97

Registered

Enclosures 2

Spare copies

SUBJECT.

Madras Steam boilers &
Prime movers Act

Submitting for con-
sideration certain
additions to rules in
connection with the

Await receipt of
reply from the Sanitary Eng.
to the reference made him on
letter from Messrs Richardson
& Brindley regarding the rule
proposed in 82. 1444 W 928.5.97

10/9/97
15.

No. 1018 W 2/10-4-97
" 1444 W 28-5-97

BACK PAPERS.

G.O.	No.	Department.	Date.
S.O.	2469 W	P.W.	6-9-97
	3336 C	"	27-7-97
	3134 C	"	9-7-97
	1444 W	"	28-5-97
	1018 W	"	10-4-97
	215 W	"	23-1-97
	2162 W	"	27-7-96
	174	Judl.	25-1-95

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Print
S.E. 1,000-8-3-97.
No. 1183

GOVERNMENT OF MADRAS.
OFFICE OF SANITARY ENGINEER,
Fort St. George, 7th July 1897.

From
J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
SANITARY ENGINEER TO GOVERNMENT,

To
The Secretary to Government,
Public Works Department.

SIR,

I have the honor to inform you that, since the date of my No. 788 of 29th. April 1897, the Boiler Inspector has found many deficiencies in the rules under the Boiler Act and has made several proposals for their amendment.

2. As the Madras Rules were founded on the Bombay Rules, it occurred to me that there must have been additions to the Bombay Rules and on enquiry we find this to be the case.

3. I enclose a copy of the additional rules published on the 5th. August 1896 and I therefore recommend that these rules should be similarly added to our existing rules noting the following:-

(1) The new rules include a rule (addition to Rule 10) which covers the rules sanctioned by Government in G.O.No. 1018 W of 10th. April 1897 and this latter rule should therefore be cancelled if new rules are approved.

(2) The rule proposed under notification in G.O.No. 1444 W of 28th. May 1897 should also be cancelled as it is also covered by the additional rules added to rule 10 of Bombay original rules.

(3) The words (if the proposed rules are sanctioned)

"Add to rule 10 of the said rules"

1444 W
28-5-97

should be

" Add to rule 22 of the said rules"

(4) In the second para of these additional rules the Boiler Inspector thinks that the words " a minimum of 27 tons may be used" should read " a minimum of 26 tons may be used" because according to the adviser of the Board of Trade, steel may be found fit to bear only this tension.

(5) On page (2) the words " See last para of rule 10" should read " See last para of rule 22".

4. I enclose a copy of the original Bombay rules for reference.

I have the honor to be,

Sir,

Your most obedient servant,



Sanitary Engineer to Government.

Public Works
Local & Munl. (1897) Department.

CURRENT No. *9894*

*C. J.
7/10*

From

*The Sanitary Engineer
to Govt*

Order.

No. *1204*

Dated *12-7-97*

Received *13-7-97*

Registered *80*

Enclosures */*

Spare copies

SUBJECT.

Steel boilers

*Replying to official
Memorandum No. 3134
dated 9-7-97 re —
the notification in
the Fort Saint George
Gazette concerning*

*File incomplete
Rev
14/7/97
J. C. Campbell
15/7/97*

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

S. E.
C. 1,000-8-3-97.

S. E.
C. 1,000-8-3-97.

No. 1204

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,

Fort St. George, 12 July 1897.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,

SANITARY ENGINEER TO GOVERNMENT,

To

The Secretary to Government,

Public Works Department.

SIR,

In reply to your reference No. 5154.C dated 9th. July 1897 (herewith returned), I have the honor to refer you to my No. 1185 of 7th. July 1897 wherein it is proposed that the rule referred to by Messrs. Richardson and Cruddas should not be sanctioned but that the Bombay additional rules should be adopted as a whole and this meets Messrs. Richardson and Cruddas' objection.

I have the honor to be,

Sir,

Your most obedient servant,

[Signature]

Sanitary Engineer to Govt.

Public Works
Local & Munl. (1897) Department.

CURRENT No. 9646

From

*The Sanitary Engineer
to Govt*

Order

No. 1548

Dated 27.9.97

Received } 28.9.97
Registered }

Enclosures one

Spare copies.

SUBJECT.

*Stating that the letter
from Messrs. Richardson
and Cuddas referred
to in his memo no: 3134
of 9.7.97 was returned to
him with reply no: 120
of 12.7.97.*

No. 3134 C/9-7-97
14th July 28-5-97

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

S. E. 1,000-8-3-97.

No. 1528

(GOVERNMENT OF MADRAS)

S. E. 1,000-8-3-97.

No. 1204

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,

Fort St. George, 12th July 1897.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,

SANITARY ENGINEER TO GOVERNMENT,

To

The Secretary to Government,

Public Works Department.

SIR,

In reply to your reference No. 3134.C dated 9th. July 1897, (herewith returned), I have the honor to refer you to my No. 1183 of 7th. July 1897 wherein it is proposed that the rule referred to by Messrs. Richardson & Cruddas should not be sanctioned, but that the Bombay additional rules should be adopted as a whole and this meets Messrs. Richardson & Cruddas' objection.

I have the honor to be,

Sir,

Your most obedient servant,

(Sd) J. A. Jones

Sanitary Engineer to Govt

(True copy)

Wm. Jones

Asst Sanitary Engineer to Govt

no 1
enclosed to letter No. 1548 of 1897

S. E. 1,000-8-8-97
C.

No. 1548

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,

Fort St. George, 27th Sept 1897

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,

SANITARY ENGINEER TO GOVERNMENT,

To

The Secretary to Government,

Public Works Department.

SIR,

With reference to your Reminder Memo
No. 3134 C dated 23rd. September 1897, I have the honor to
state that the letter from Messrs. Richardson & Cruddas
referred with your memo No. 3134 C of 9th. July 1897 was
returned to you with my reply No. 1204 dated 12th. July
1897 of which I enclosed a copy in case the original has
been miscarried.

I have the honor to be,

Sir,

Your most obedient servant,

Wm. Jones

Asstt. Sanitary Engineer to Government.

for Sanitary Engineer to Government.

207

P.W.D.
9646/97