

GOVERNMENT OF GOA

The Goa Boiler Rules, 1983

[Under the Boilers Act, 1923 (Central Act 5 of 1923)]

The Goa Boiler Rules, 1983

1.	The Goa, Daman and Diu Boiler Rules, 1983 , published in the Official Gazette, Series I No. 38 (Extraordinary No.2) dated 26-12-1983 and came into force at once.
2.	The Goa, Daman and Diu Boiler (Amendment) Rules, 2004 , published in the Official Gazette, Series I No. 42 dated 15-1-2004 and came into force at once
3.	The Goa, Daman and Diu Boiler (2nd Amendment) Rules, 2010 , published in the Official Gazette, Series I No. 29 dated 14-10-2010 and came into force at once
4.	The Goa Boiler (3rd Amendment) Rules, 2014 , published in the Official Gazette, Series I No. 13 dated 26-6-2014 and came into force at once
5.	The Goa Boiler (4th Amendment) Rules, 2019 , published in the Official Gazette, Series I No. 48 dated 28-2-2019 and came into force at once
6.	The Goa Boiler (5th Amendment) Rules, 2022 , published in the Official Gazette, Series I No. 1 dated 07-4-2022 and came into force at once
7.	The Goa Boiler (6th Amendment) Rules, 2024 , published in the Official Gazette, Series I No. 27 dated 03-4-2024 and came into force at once

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GOVERNMENT OF GOA
Industries and Labour Department

Notification

26/1/81-ILD (I)

Whereas the draft rules of certain rules which the Government of Goa, Daman and Diu proposed to make in exercise of the powers conferred by section 29 of the Indian Boilers Act, 1923 (Central Act 5 of 1923), were published, as required under sub-section (1) of section 31 of the said Act at pages 75 to 85 of the Official Gazette, Series I No. 9 dated 2nd June 1983 under the Notification No. 26/1/81-ILD (I), dated 6th May, 1983 of the Industries and Labour Department, Government of Goa, Daman and Diu, Secretariat, Panaji inviting, suggestions and objections from all persons likely to be affected thereby, before the expiry of one month from the date of publication of the said Notification in the Official Gazette;

And whereas the said Gazette was made available to the public on 2nd June, 1983;

And whereas no objections or suggestions have been received from the public on the said draft by the Government;

Now, therefore, in exercise of the powers conferred by section 29 of the Indian Boilers Act, 1923 (Central Act 5 of 1923), and all other powers enabling in this behalf, the Government of Goa, Daman and Diu, hereby makes the following Rules as required by sub-section (1) of section 31 of the said Act, namely:—

CHAPTER I

Preliminary

1. Short title and commencement. — (a) These rules may be called the Goa ¹[] Boiler Rules, 1983.

(b) They shall come into force at once.

2. Definitions. — In these rules, unless the context otherwise requires, —

(a) "Act" means the ²[] Boilers Act, 1923 (Central Act 5 of 1923);

(b) "Appellate Authority" means the appellate authority constituted under rule 58 of these rules;

(c) "Board" means the Board constituted under section 27A of the Act;

³[(d) "Government" means the Government of Goa;]

(e) "Inspection Authority" and "Inspecting Officer" shall have the respective meanings assigned to them in the Indian Boilers Regulations, 1950;

(f) "Regulation" means a Regulation framed by the Board;

⁴[(g) "Rules" means the Goa Boiler Rules, 1983;]

¹ Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O. G. Series I No. 13 dated 26-06-2014.

² Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O. G. Series I No. 13 dated 26-06-2014.

³ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O. G. Series I No. 13 dated 26-06-2014.

⁴ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

(h) "Section" means a section of the Act;

⁵[]

(j) Every reference in these rules to a boiler or boilers shall be deemed to include also a reference to an economiser or economisers respectively.

3. Location of office.— The Boiler Inspection Office for the whole of the ⁶[State of Goa] shall be located at Panaji, Goa, and shall be under the charge of the Chief Inspector of Boilers.

CHAPTER II

Duties of the Chief Inspector

4. Administrative control.— The Chief Inspector shall work under the administrative control of the Secretary, Industries and Labour Department, Government of Goa ⁷[], Panaji, and shall submit to him—

(a) an Annual Report on the administration of the Act;

(b) such other reports and returns as may be called for from time to time by the Secretary, Industries and Labour Department, Government of Goa ⁸[], Panaji.

5. Duty of general control.— The Chief Inspector is vested with all the powers of an Inspector under the Act. His main duty, however, consists in supervising and controlling the work of the Inspectors and he should only actually inspect or examine boilers in exceptional cases, or where he considers that the work of an Inspector requires a personal check.

6. Specific duties.— The Chief Inspector shall—

(a) approve all drawings and plans for construction of boilers or any part thereof, steam receivers, separators and similar equipments;

(b) supervise the work of all Inspecting Officers in respect of construction of boilers or any part thereof, steam receivers, separators and similar equipments;

(c) issue certificates in Forms II and III-A of the Regulations and countersign certificates in Form III of the Regulations for boilers or any part thereof, steam pipes, steam receivers, separators and similar equipments;

(d) supervise the working of any testing laboratory set up for the testing and examination of boilers or any part thereof under construction;

(e) examine all reports regarding examination of boilers or any part thereof under construction in stages as enumerated in Appendix 'J' of the Regulations.

(2) The Chief Inspector shall further—

(a) personally check the registration particulars and calculations submitted by Inspectors for all boilers inspected for registration as prescribed in Chapter IX of the Regulations and enter under his own signature the approved working pressure and all

⁵ Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

⁶ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

⁷ Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

⁸ Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

orders required by section 7;

(b) enter under his own signature any subsequent entries required in the registration book;

(c) obtain from the State of registry, the registration book of any boiler, the transfer of which is reported under section 6 (b);

(d) fix the area of jurisdiction of each Inspector.

(e) approve the programmes of all the Inspectors subordinate to him with due regard to the convenience of the owners of the boilers generally;

(f) examine and countersign the Inspectors' Memorandum of Inspection Book of each boiler after each inspection;

(g) examine and pass orders on the diaries and returns of the Inspectors;

(h) pass orders in all cases in which an Inspector proposes to increase or reduce the pressure allowed for any boiler under section 8 or to revoke, cancel or refuse to renew the certificate of a boiler after issuing due notice thereof or to order important repairs, structural alterations or renewals in a boiler under section 8;

(i) pass orders in all cases in which it is reported that after due notice the boiler has not been properly prepared for inspection;

(j) sanction prosecutions under the Act;

(k) inquire into serious accidents to boilers.

7. Instructions to owners.— The Chief Inspector, shall issue a set of instructions on the lines indicated in Form C appended to these rules to the owners as regards the maintenance, working and cleaning of boilers. These instructions should be kept in each boiler house.

8. Registers to be kept.— (1) The Chief Inspector, as an Inspecting Authority, shall keep in his office—

(a) a register of boilers and scantlings manufactured in the ⁹[State of Goa]

(b) a register of all tests carried out for the purpose of testing the specimens against the boilers under manufacture;

(c) a register of radiographic and non-destructive examinations carried out with the results thereof against each boiler of welded construction under manufacture;

(d) a register of approved drawings and plans of the boilers;

(e) a register of examination fees received in connection with the construction of the boilers steam pipes or parts thereof;

(f) a schedule of stage examination of the boilers or parts thereof in accordance with the provisions lay down in Appendix 'J' of the Regulations.

(2) The Chief Inspector shall also keep in his office—

⁹ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

(a) ¹⁰ [a register in Form A of all boilers registered in the State or the registry of which has been transferred from another State];

(b) the Registration Book and Memorandum of Inspection Book of all boilers borne on his register;

(c) a register of appeals;

(d) a register of accidents;

(e) a register of registration and inspection fees.

CHAPTER III

Inspecting Staff

9. ¹¹ [General duties of inspectors].— ¹²[]

(2) The main duties of the Inspector, as laid down in the Act, are the inspection and examination of boilers, economisers and steam pipes. Inspections shall be carried out in strict accordance with Chapter IX of the Regulations and Chapters IV and V of these rules.

10. Inspectors to see that boilers are worked according to law.— In addition to the inspection and examination of boilers it is the duty of Inspectors to search for unregistered or un-certificated boilers within their areas, and to see that certificate boilers are worked in accordance with the terms of their certificates and with any regulation or rule under the Act for their safe working.

11. Inspectors to advise owners.— At the time of inspection, Inspectors should advise the owner and the person-in-charge of the boiler, of the management and upkeep of the boiler with special reference to the amount of cleaning required in view of the quality of water used.

12. Specific duties.— (1) The Inspectors shall also carry out the following duties namely:—

(a) prepare a programme of inspections with regard to the convenience of owners generally in the most suitable order of places to save time and expenditure in cross journeys and submit it at such periods as may be prescribed at least 14 days before the first date fixed in the programme, to the Chief Inspector for approval to enable 10 days' notice required under sections 7 and 8 to be given to the owner;

(b) maintain a Memorandum of Inspection Book for each boiler under their charge and submit it to the Chief Inspector for examination and counter signature after each inspection;

(c) keep diary for weekly submission to the Chief Inspector showing places visited, boilers registered or inspected with fees paid thereon, variations from the programme and any other important particulars;

(d) receive applications for registration or inspection under sections 7 or 8,

¹⁰ Substituted vide Goa Boiler (Fifth Amendment) Rules, 2022 Published in the O.G. Series I No. 1 dated 07-04-2022.

¹¹ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

¹² Omitted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014.

proposals for repairs, alterations or renewals under sections 12 and 13 and reports of accidents under section 18;

(e) inquire into accidents to boilers and steam pipes and report to the Chief Inspector;

(f) report to the Chief Inspector cases of unreported accidents discovered at the time of inspection;

(g) submit for the orders of the Chief Inspector—

(i) the Memorandum of Inspection Books of all boilers proposed for registration under section 7;

(ii) proposals for increasing or decreasing the pressure of a boiler after inspection under section 8;

(iii) proposals for necessary repairs, structural alterations or renewals to a boiler under section 8 or 12;

(iv) proposals for revoking, cancelling or refusing to renew a certificate under section 8 or 11;

(v) report when boilers have not been properly prepared for inspection under section 14;

(vi) proposals for prosecution under the Act.

(2) As an Inspecting Officer, the Inspector shall—

(a) prepare a programme of examination with regard to the convenience of the makers generally and submit it to the Inspecting Authority for approval;

(b) maintain a schedule of such examination of boilers or parts thereof;

(c) maintain a diary of examinations carried out for monthly submission to the Inspecting Authority, showing places visited, boilers or parts thereof examined;

(d) submit to the Inspecting Authority reports on the results of the examinations carried out on boilers or parts thereof in accordance with the standards laid down in the regulations and with particulars reference to variations thereof;

(e) report the results of tests carried out to materials or scantlings in his presence;

(f) maintain a record of all tests — both destructive and non-destructive — carried out by him or under his supervision;

(g) when radiographic examinations are carried out to boilers or parts thereof, give his opinion in writing to the Inspecting Authority with regard to the acceptability or otherwise of the parts examined.

13. Inspections at special times.— No examination of a boiler shall be made by an Inspector for the purpose of registering or issuing a certificate for a boiler on a Sunday or gazetted public holiday or between the hours of sunset and sunrise without the specific orders of the Chief Inspector in each case. In such case an extra fee equal to the usual registration or inspection fee for the boiler may be charged.

14. Attendance during hearing of appeals.— Under the orders of the Chief Inspector, Inspectors shall attend during the hearing of appeals with regard to boilers under their charge before the Chief Inspector or the Appellate Authority.

15. Registers to be kept.— Every Inspector in charge of an office shall keep.—

- a) a register in Form 'A' of all registered boilers situated within his jurisdiction;
- b) a register of accidents;
- c) a register of registrations and inspection fees received.

CHAPTER IV

Procedure for Registration

16. Importance of registration.— Technical regulations for the registration of boilers and the scale of fees for registration are prescribed in Chapter IX of the Regulations. The details of measurements recorded at the time of registration constitute a permanent record for the boiler and determine the original pressure at which the boiler is allowed to work. It is accordingly essential that the work should be done with the greatest care and precision.

17. Receipt of applications.— Applications for registration shall be made under sub-section (1) of section 7 either to the Chief Inspector or to the Inspector having jurisdiction over the area in which the boiler is situated and shall be accompanied by a receipt for the prescribed fee. No application shall be accepted without the receipt. No boiler shall be registered if on measurement, the fee is found to be deficient until the deficit has been paid. Any excess payment will be refunded to the party but shall bear no interest.

18. Necessity of avoiding delay.— It is essential that no delay should occur in registration. The measurements under sub-section (3) of section 7 should ordinarily be completed and the report submitted to the Chief Inspector within seven days of the receipt of the application; in no case should the interval exceed thirty days. The Chief Inspector should issue his orders under sub-section (4) of section 7 without delay.

19. Register of registered boilers.— The Chief Inspector shall maintain a register of registered boilers in serial order in Form A in two parts; in Part I, the boilers originally registered in the ¹³[State of Goa], the registered number of a boiler shall be the one immediately following the last serial number in the register. Gap number due to boilers being broken up or transferred to another State or Union territory shall not be filled up but will be marked with special code numbers. In Part II, the boilers originally registered in other States or Union territories, the entries shall be made as prescribed in rule 21, Inspectors in charge of an office shall keep a similar register for ail boilers within their jurisdiction.

20. Procedure on transfer of a boiler.— Whenever a boiler is transferred from one State or Union territory to the ¹⁴[State of Goa], the owner shall, under section 6(b), apply to the Chief Inspector for the registration of such transfer; the boiler cannot be used until registration has been effected. The Chief Inspector shall then obtain from the State or the Union territory from which the boiler was transferred the Registration Book and Memorandum of Inspection Book of the boiler.

¹³ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014

¹⁴ Substituted vide Goa Boiler (Third Amendment) Rules, 2014 published in the O.G. Series I No. 13 dated 26-06-2014

21. Entry of the transferred boiler in register.— On receipt of the Registration and Memorandum of Inspection Books, the Chief Inspector shall enter the boiler under its original number in Part II of his Register, and shall instruct the Inspector of the local area in which the boiler is situated to enter it similarly in his Register. The Registration Book and the Memorandum of Inspection Book shall be kept in the Chief Inspector's office.

22. Note of transferred and dismantled boilers.— Whenever a boiler has been transferred to other State or Union territory or broken up, the fact shall be recorded in the Register. In the case of a boiler that has been permanently dismantled the Registration Book and the Memorandum of Inspection Book of such boiler shall be kept in the safe custody and weeded out after expiry of 90 days.

CHAPTER V

Procedure for Inspection

23. Internal inspection.— Detailed instructions for the inspection of boilers are contained in Chapter IX of the Regulations. The general procedure at inspection to be observed is as under:—

(a) At a thorough inspection of a boiler, the Inspector should, whenever the size and construction of the boiler permit, go inside it and make a thorough inspection of all its internal parts. But before doing so he should satisfy himself that proper provision has been made for disconnection from any other boiler under steam.

(b) In case he finds that proper provision for disconnection has not been made or that the boiler has not been properly cleaned or scaled or that it is unreasonably hot he should decline to proceed with the inspection and shall report the facts to the Chief Inspector for his orders under sub-section (2) of section 14 of the said Act.

(c) When a boiler is of such a size or its construction is such that the Inspector cannot go inside it there must be sufficient sight holes or hand holes provided to enable him to see the principal internal parts. If any important part of a boiler is so constructed that the Inspector cannot examine it, he shall report the facts to the Chief Inspector for his orders.

24. External inspection.— (a) Boilers must be examined externally as well as internally; particular attention should be paid to the external parts of the boilers where in contact with seating blocks and brick works, especially when the situation is damp. Having regard to any serious defects discovered, Inspectors should take care, in order to ensure proper inspection, that boilers, of which the whole of the outside cannot be readily examined, are cleared whenever they consider it necessary of any concealed covering, supports or fittings.

(b) Saddle tanks and engine fittings of locomotive type boilers should be removed for inspection of the parts underneath at the first inspection and at any reasonable period afterwards if the Inspector cannot satisfy himself. If the owners in any special case have any good reasons for not wishing to clear covered parts, the case should be submitted to the Chief Inspector for orders. The Inspector must keep in mind that he is not to certify as efficient any boiler regarding the condition of which he cannot thoroughly satisfy himself.

¹⁵ [24A. **Bare Inspection and Non Destructive Testing of shell type boilers -**

- (1) All Shell type / Shell type with Membrane Panel Assembly boilers upon completion of every ten years of service /operation, shall be cleared of entire lagging, at the time of hydraulic test / inspection for renewal of certificate for use of a boiler and condition assessment Non Destructive Tests of the boiler shall be carried out as specified in Table 2 in sub-clause (ii) of clause (b) of Regulation 391A of the Indian Boiler Regulations, 1950:

Provided that the boilers which have already completed ten years of service / operation, the owner of such boiler shall comply with the requirements specified under sub-rule (1) at the time of immediate hydraulic test / inspection for renewal of certificate for use of a boiler and subsequent bare inspection and condition assessment Non Destructive Tests shall be carried out at a frequency of every ten years thereafter.

- (2) Such condition assessment Non Destructive Tests as specified in Table 2 in sub-clause (ii) of clause (b) of Regulation 391A shall mandatorily be carried out by Remnant Life Assessment Organisation recognized by the Board:
Provided that nothing contained in this rule shall be applicable to small industrial boilers as defined under Chapter XIV of the Regulations.]

25. Casual working inspections.— At the inspection of one of a battery of boilers, the Inspector shall take the opportunity of examining the other boilers under steam with special reference to the water gauges, pressure gauges and safety valves.

26. Proposals for reduction of pressure.— When the Inspector decides that a boiler in one or more of its parts is no longer fit for the pressure approved for it, he shall, without delay, report his proposals for reducing the pressure to the Chief Inspector and at the same time submit his calculations for wasted parts for check and approval of pressure. With regard to pitting and wasting of shell plates, the Inspector must bear in mind that shell plates ordinarily are considerably stronger in the body of the plate, owing to being un pierced, than at the seams and consequently may become reduced in thickness to an appreciable extent in the body of the plate, i.e. else where than at the seams, and still be stronger than the seams.

27. Repairs to boilers.— (a) Under section 12 of the Act the sanction of the Chief Inspector to all repairs proposed for boilers must be obtained beforehand.

(b) A few water tubes or smoke tubes, however, may, in an emergency, be renewed pending the sanction of the Chief Inspector but all such cases must be reported immediately to the Chief inspector who may, if he deems fit, notify his sanction to the owner without verification of the renewals by an Inspector.

(c) Generally in repairing boilers the object to be obtained is to make up for damage or wastage by suitable compensation, either by renewal or repair of the part affected.

¹⁵ Inserted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

Covering patches applied with the object of hiding defects are a source of danger and must not be passed.

(d) Welding by electric and oxy-actylene processes may be employed in the repair of boilers, but, as the efficiency of the welding depends largely on the skill and care of the operator, each case will have to be decided on its merit.

(e) Proper attention must be paid to the annealing of welded parts. An Inspector shall, wherever possible, be present during some part at least, of the welding operations.

(f) Extensive repairs such as renewal of furnaces and plates, parts of shell, fire-boxes, grinders, etc. shall be supervised, so far as his other duties permit, by the Inspector and at such time when fireboxes and smoke tubes of locomotive type boilers are withdrawn, advantage of the opportunity shall be taken to inspect the internal parts otherwise inaccessible to close inspection.

(g) Repairs to boilers are prescribed in Chapter IX, Regulation 392 of the Regulations.

28. Entries in Memorandum of Inspection Book.— (a) An Inspector shall, as soon as convenient after an inspection, make the necessary entries in the Memorandum of Inspection Book for the boiler and submit the book to the Chief Inspector. Care shall be taken to preserve the books and to keep them clean and tidy. Inspection notes shall briefly state the extent to which the boilers were cleared of brickwork, lagging or concealing parts; the general condition of the boiler; parts requiring attention or repair and if special preparation is required at the next inspection.

(b) Inspectors shall also note in the Memorandum of Inspection Books, all casual visits, inspections of steam pipes, visits for inspection of repairs, inquiry into accidents, etc. and so provide an useful record of the history of the boiler for the subsequent inspections.

(c) In marking inspections it is important that the Inspector shall pay particular attention to entries made in the Memorandum of Inspection Book at previous inspections.

29. Entries in certificates.— (a) In addition to the entries required to be made under Regulation 389 in a certificate for a boiler the Inspector shall state in the remarks column his requirements, if any, with regard to hydraulic test, removal of lagging, brickwork or other concealing part for the next inspection to enable the owner to have the same properly prepared at that time. He shall also state in the same place his requirements regarding the repair or removal of any part that may be considered fit only for the period of the certificate.

(b) In the repairs column shall be entered the day, month and year of the repairs and description of repairs effected in clear and precise terms.

(c) The Inspector's remarks shall be brief and in the absence of any remarks on the condition of boiler, the boiler will be considered to be in good condition, unless found otherwise.

30. Engraving of registry number.— Paper slips of the proper size bearing the registry number allotted for a boiler will be supplied by the Chief Inspector. The slip shall

be pasted on the part of the boiler pointed out by the Inspector and the device traced through with a cutting tool. The engraving shall then be completed by the removal to the prescribed depth of the metal between the traced lines.

31. Arranging for inspections.— In arranging for inspection particular attention shall be paid to the provisions of clause (a) of sub-rule (1) of rule 12. The notice required under sub-section (2) of section 7 and sub-section (4) of section 8 shall be sent in Form B. If a hydraulic test is necessary in addition to the ordinary inspection, sufficient notice must be given to the owner.

32. Issue of certificates and provisional orders.— In cases in which the Inspector is empowered to issue a certificate under section 8 without further reference, the certificate should ordinarily be issued within 48 hours from the completion of the inspection. Where he proposes to issue a provisional order, the Inspector must satisfy himself that the boiler is fit to be worked at the maximum pressure for the period of not less than 30 days continuously as entered in the provisional order. The fact of issue of a provisional order must be reported to the Chief Inspector.

33. Provisional orders to be issued after hydraulic tests.— (1) Provisional orders shall be issued in every case of registration after hydraulic test of boiler if the Inspector, is satisfied;

(2) The steam test may be carried out at any prefixed convenient time within the period of the provisional order after which if test is satisfactory, the certificate under sub-section (6) of section 7 has to be issued.

34. Forms of provisional orders and certificates.— Provisional orders and certificates are prescribed in Forms V and VI respectively, of the Regulations.

The period specified in any provisional order or certificate shall begin on the day following that on which the enabling thorough inspection or hydraulic test is made. Where a certificate supersedes a provisional order during the period of its currency, the period of the certificate shall be retrospective and shall begin from the same time as that of the provisional order.

35. Duplicate certificates.— A duplicate of any certificate granted earlier under section 7 or section 8 of the Act which is at the time in force shall be granted by the Chief Inspector on the application of the Owner of the boiler if the Chief Inspector is satisfied that the duplicate is required for a bonafide purpose and the fees prescribed under rule 42 are paid.

36. Fees for inspection.— Fees for inspection shall be calculated on the basis of boiler rating, as prescribed in Chapter IX, Regulation 384 of the Regulations. The following fees are prescribed:—

(1) **Registration fees.**— Fees for registration and first inspection of boilers and miniature boilers shall be levied as prescribed in Regulations 385 and 621(d) respectively of the Regulations.

¹⁶[“(2) Inspection fees – Inspection fees for renewal of certificate of boilers shall be calculated on the basis of rating and shall be levied in accordance with the following scale, namely: -

¹⁶ Substituted vide Goa Boiler (Sixth Amendment) Rules, 2024 published in the O.G. Series I No. 27 dated 03-10-2024.

Boiler rating	Fees in Rs.
For boiler rating not exceeding 10 sq. mts.	3400/-
For boiler rating exceeding 10 sq. mts. but not exceeding 30 sq. mts.	4000/-
For boiler rating exceeding 30 sq. mts. but not exceeding 50 sq. mts.	4800/-
For boiler rating exceeding 50 sq. mts. but not exceeding 70 sq. mts.	5800/-
For boiler rating exceeding 70 sq. mts. but not exceeding 90 sq. mts.	6600/-
For boiler rating exceeding 90 sq. mts. but not exceeding 110 sq.mts.	7400/-
For boiler rating exceeding 110 sq. mts. but not exceeding 200 sq. mts.	8300/-
For boiler rating exceeding 200 sq. mts. but not exceeding 400 sq. mts.	9100/-
For boiler rating exceeding 400 sq. mts. but not exceeding 600 sq. mts.	9900/-
For boiler rating exceeding 600 sq. mts. but not exceeding 800 sq. mts.	11400/-
For boiler rating exceeding 800 sq. mts. but not exceeding 1000 sq. mts.	13100/-
For boiler rating exceeding 1000 sq. mts. but not exceeding 1200 sq. mts.	14900/-
For boiler rating exceeding 1200 sq. mts. but not exceeding 1400 sq.mts.	16500/-
For boiler rating exceeding 1400 sq. mts. but not exceeding 1600 sq.mts.	18000/-
For boiler rating exceeding 1600 sq. mts. but not exceeding 1800 sq.mts.	19800/-
For boiler rating exceeding 1800 sq. mts. but not exceeding 2000 sq.mts.	23100/-
For boiler rating exceeding 2000 sq. mts. but not exceeding 2200 sq.mts.	26300/-
For boiler rating exceeding 2200 sq. mts. but not exceeding 2400 sq.mts.	29600/-
For boiler rating exceeding 2400 sq. mts. but not exceeding 2600 sq.mts.	32900/-
For boiler rating exceeding 2600 sq. mts. but not exceeding 2800 sq.mts.	36100/-
For boiler rating exceeding 2800 sq. mts. but not exceeding 3000 sq.mts.	39400/-

Above 3000 sq.mts, for every 200 sq.mts. or part thereof, an additional fee of Rs. 1800/- shall be charged:

Provided that when any owner is willing to accept a renewed certificate for less than twelve months in order to approximate the date of annual inspection to the date on which other boilers in the locality are inspected, a certificate for such period of less than twelve months, as may be necessary for such approximation of dates, may be granted at a reduced fee to be calculated at one twelfth of the ordinary fee for each full month and portion of a month will be reckoned as one full month.”.];

(3) Fees for examination of pipes and plans.— Fees for examination of steam, feed and blow off pipes under fabrication shall be charged in accordance with the following scales:—

(a) for pipes not exceeding 114.3 mm. (4½" OD)—

(i) up to 30 metres in length, a fee of ¹⁷[Rs. 2500/-],

(ii) for every additional length of 30 metres or part thereof, a fee of ¹⁸ [Rs. 1300/-].

¹⁷ Substituted vide the Goa Boiler (Sixth Amendment) Rules,2024, Published in the O.G., Series I No 27 dated 03-10-2024.

¹⁸ Substituted vide the Goa Boiler (Sixth Amendment) Rules,2024, Published in the O.G., Series I No 27 dated 03-10-2024.

(b) For pipes exceeding 114.3 mm. OD (4½" OD):—

(i) up to 30 metres in length, a fee of¹⁹[Rs. 3800/-] and

(ii) for every additional length of 30 metres or parts thereof, a fee of Rs.²⁰ [2500/-]

(c) The fee for examination of plans of steam, feed and blow off pipes required under sub-regulation. (a) of Regulation 395 of the Regulations shall be at the rate of²¹[Rs. 400/-] per 30 mts. of all fittings, excepting fittings like de- super heaters, steam receivers, feed heaters and separately fired super heaters. For any fittings like de-super heaters, steam receivers and separators, the fee shall be²²[Rs. 2500/-] for each such fitting.

(4) Fees for examination of boiler mountings, fittings, etc.—

(a) (i) Cast mountings and fittings—

A Fee of²³[Rs. 6000/-] shall be charged for examination and certification of a single lot of mountings and fittings and made from the same cast but the number of items in one such lot shall not exceed fifty.

(ii) Fabricated mounting and fittings—

A fee of²⁴ [Rs. 6000/-] shall be charged for examination and certificate of single lot of mountings and fittings not exceeding ten.

(iii) Drawings—

The charges for the examination of drawing only for the mountings and fittings to be manufactured shall be²⁵[Rs. 3000/-] for each such drawing.

²⁶[(iv) Fees for inspection of other fittings like skids shall be as per Regulation 395B of Indian Boiler Regulations, 1950.]

(b) Boilers and parts thereof under fabrication—

Fees for inspection of boilers and parts thereof under fabrication shall be the same as prescribed in Regulation 395-A:

Provided that the Chief Inspector may require the manufacturer or the fabricator to pay fresh fee equal to the usual inspection fee in any particular case where due to fault or neglect of the owner, the visit paid by any Inspector for examination was fruitless.

²⁷[NOTE: - Fees payable under this rule shall be increased by five percent of such fees last payable, at the beginning of each calendar year with effect from 01-01-2026.]

¹⁹ Substituted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²⁰ Substituted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²¹ Substituted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²² Substituted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²³ Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

²⁴ Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

²⁵ Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

²⁶ Inserted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

37. Fee to cover inspection and tests.— A fee paid for the inspection of a boiler shall cover thorough inspection, hydraulic test and steam test where such tests are necessary, subject to the provisions of sub-section (2) of section 14.

38. Second fee in default.— A second fee will be leviable for re-inspection in any case where the inspection of a boiler is begun, but owing to the fault or neglect of the owner or person in-charge, is not completed within a period of six months from the date of commencement of inspection.

²⁸ **[38-A. Fees for approval and renewal.** — The fees for the approval of following firms and renewal of its approval shall be calculated on the basis of rates levied in accordance with the following scale, namely: —

		Rs.
a	(i) for approval of firm for pipe fabrication	6,300/-
	ii) for renewal of approval of firm as pipe fabrication firm	4,000/-
b	(i) for approval of firm as boiler repairer / erector	6,300/-
	(ii) for renewal of approval of firm as boiler repairer/erector firm	4,000/-
c	(i) for approval of firm for manufacture of boilers, economisers, pipes, tubes, pressure vessels and heat exchangers	25,000/-
	(ii) for renewal of approval of firm for manufacturer of boilers, economisers, pipes, tubes, pressure vessels and heat exchangers	13,300/-
d	(i) for approval of firm for manufacture of castings, forgings, Valves, forged-flangers and such other fittings	15,600/-
	(ii) for renewal of approval of firm for manufacture of castings, forgings, Valves, forged-flanges and such other fittings	8,800/-
e	(i) for approval of firm for manufacture of plate flanges	11,000/-
	(ii) for renewal of approval of firm for manufacture of plate flanges	6,300/-
f	(i) for approval of testing laboratory	11,000/-
	(ii) for renewal of approval of testing laboratory	6,300/-
g	(i) for approval of electrode manufacturer (initial qualification)	6,300/-
	(ii) for renewal of approval of electrode manufacturer (periodical testing)	4,000/-

NOTE: - Fees payable under this rule shall be increased by five percent of such fees last payable, at the beginning of each calendar year with effect from 01-01-2026.]

²⁷ Inserted vide the Goa Boiler (Sixth Amendment) Rules,2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²⁸ Substituted vide the Goa Boiler (Sixth Amendment) Rules,2024, Published in the O.G., Series I No 27 dated 03-10-2024.

²⁹**[38-B. Procedure for approval of firm and renewal. -**

(1) Any firm seeking an approval or renewal of approval shall submit an application on plain paper accompanied by a treasury receipt for payment of fees specified in rule 38-A along with duly filled in questionnaire in Form D hereto.

(2) If the Chief Inspector is satisfied with the equipment and facilities, supervisory personnel engaged and quality control procedure in place of the applicant firm, shall grant approval / renewal of approval subject to such conditions and limitations as may be specified by the Chief Inspector. The approval / renewal of approval shall be valid for a period of one year and shall be renewed every year thereafter.

(3) Any change in the equipment and facilities, supervisory personnel engaged and quality control procedure in place during the validity of the approval / renewal shall be communicated to the Chief Inspector in writing within seven days from such change.]

39. Sanction of Chief Inspector to second fee.— No extra fee shall be levied except with the sanction of the Chief Inspector.

40. Special fee for inspections out of season.— For any inspection of a boiler situated at a place which is visited by an Inspector one or more times in a year for the purpose of inspecting boilers, if an owner or person in-charge of a boiler fails to avail himself of the services of the Inspector during the usual period for visiting the district and applies for inspection at a time which would necessitate a special journey, the owner or person in addition to the registration or inspection fee, pay such sum into the Government Treasury to cover the rail, conveyance and travelling allowance charges of the Inspector from the nearest Headquarters and of any Class IV servant accompanying him as the Chief Inspector may determine:

Provided that, if two or more owners apply for inspection at a time which would necessitate a special journey by the Inspector, then before the Inspector undertakes such a journey, the owners or persons in-charge shall, in addition to the usual prescribed fees, pay such proportionate travelling allowance charges as would be determined by the Chief Inspector.

41. Fee for copy of Registration Book.— The fee for obtaining the copy of Registration Book, excluding inspection notes and calculations shall be ³⁰ [Rs.500/-].

42. Duplicate certificate fees.— Fees for duplicate certificate under rule 35 shall be ³¹ [Rs. 300/-] .

43. Refund of fees.— Fees paid in excess and fees paid for an inspection which for any reason not due to any fault or omission of the owner or person in-charge of the boiler has

²⁹ Inserted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

³⁰ Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

³¹ Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

not been made, shall be refunded if a refund is applied for within one year from the date of payment.

CHAPTER VI

Accidents

44. Investigation of accidents.— On the receipt of a report of an accident to a boiler or steam pipe under section 18, the Inspector shall with the least possible delay, proceed to the place to investigate the accident. If the report is received by the Chief Inspector, he shall forward it at once to the Inspector within whose jurisdiction the accident has occurred for necessary action.

45. Procedure during inquiry.— The Inspector at his inquiry shall make a careful examination of the damaged parts, and shall take such measurements and make such sketches for the purpose of his report, as he may deem necessary. He shall inquire into the circumstances attending the accident and note the time of its occurrence, its nature and extent of the injury caused to persons and the damage done to property. The report shall be in the style of the Reports of Preliminary Enquiries under the British Boiler Explosions Act, 1882 and 1890.

46. Power to hold inquiry in writing.— Inspectors are authorised to take the written statements of witness and other persons immediately concerned with the accident. In order to comply with the provisions of sub-section (2) of section 18 the Inspector shall present to the owner or person in-charge of the boiler a series of written questions on all points that are material to the inquiry.

47. Use of boiler after accident.— The Inspector must decide whether the use of the boiler can be permitted at the same or at a lower pressure without repairs or pending the completion of any repairs or alterations that he may order. In no case should he issue a provisional order or renewal certificate until his orders have been carried out.

48. Procedure in case of serious accident.— The report shall be sent without delay to the Chief Inspector; if he considers that the investigation has been sufficient, he will record the facts in his Register of Accidents and enter a brief account of the accident in the Registration Book, copy being made in the Memorandum of Inspection Book. If, however, the accident is of a serious nature and in all cases in which an explosion has occurred, the Chief Inspector, shall, after receipt of the Inspector's report, proceed to investigate the accident personally or with the assistance of a member of the panel of assessors appointed under rule 59 who may be appointed for this purpose by the Commissioner. Report of such inquiries shall be recorded as indicated above.

49. Remuneration of Assessor.— The Assessor shall be remunerated at such rate as may be prescribed by the Government and be allowed the travelling expenses incurred by him in attending the inquiry.

50. Reference in annual report.— A brief account of all accidents and their causes shall be included in the Chief Inspector's annual report.

51. Unreported accidents.— If in the course of an inspection or at any other time the

Inspector discovers damage which comes within the definition of an accident, but which has not been reported, he shall report the facts at once to the Chief Inspector for action under clause (d) of section 24.

CHAPTER VII

Appeals

52. Filing of appeal.— Every petition of appeal shall be made in writing within thirty days of the order/decision appealed against, and shall bear stamp of ³²[rupees five hundred] only.

53. Presentation of appeal.— An appeal is to be presented either personally or by registered post to the Chief Inspector or the Appellate Authority or the Central Government, as the case may be.

54. Form of appeal.— The petition of appeal shall be accompanied by the original order, notice or report appealed against or by a certified copy thereof or where no such order, notice or report has been made in writing, by a clear statement of the facts appealed against, the grounds of appeal and the referring section of the Act.

55. Fixing date for hearing.— On receipt of an appeal the Chief Inspector shall, if the appeal is to be heard by himself, fix a date for hearing of the appeal; and if it is to be heard by the Appellate Authority, obtain a date for the hearing of the appeal from the President of the Appellate Authority. It is important that there shall be no delay in the decision of appeals, as the stoppage of a boiler is likely to put the owner thereof to great inconvenience. The decision shall ordinarily be given within 10 days from the receipt of the petition of appeal.

56. Procedure before hearing.— When the date for hearing has been fixed, the Chief Inspector shall issue a notice to the appellant stating the date for hearing and informing him that if he wishes to be heard in support of the appeal or to produce evidence he must be present either in person or by his duly authorised agent with his evidence on the date fixed. The notice shall be sent by registered post to such address as shall be entered in the petition of appeal.

57. Presence of Inspector.— In all appeals the Chief Inspector shall decide whether the presence of the Inspector is required and accordingly shall issue orders calling upon the Inspector to be present without fail at the appointed place and time.

58. Appellate Authority.— For the purpose of hearing appeals under section 20, there shall be an Appellate Authority consisting of the President and six assessors, appointed by the Government.

59. Qualifications of President and Assessors.— (1) No person shall be appointed as the President of the Appellate Authority unless,—

(i) he is holding or has held any judicial office of the rank of “Civil Judge, Junior Division” or “Judicial Magistrate, First Class” or in case of a Government Officer, he, in the opinion of the Government is holder of an equivalent office;

(ii) he is an advocate enrolled under the Advocate Act, 1961 with three years

³² Substituted vide Goa Boiler (Fourth Amendment) Rules, 2019 published in the O.G. Series I No. 48 dated 28-02-2019.

standing.

(2) No person shall be appointed as an assessor unless he is a Mechanical or Electrical Engineer and possesses such other qualifications as the Government may determine.

60. Constitution of Appellate Authority.— (1) Whenever the date for an appeal before the Appellate Authority has been fixed, the Chief Inspector shall arrange for the attendance of all the assessors.

(2) The quorum for sitting of the Appellate Authority shall be 3 members.

61. Attendance of witnesses.— The Appellate Authority shall have power to secure the attendance of witnesses and to make local inquiries under the provisions of the Code of Civil Procedure, 1908.

62. Ex-part decisions.— If the appellate is not present on the date fixed for hearing the appeal may be decided ex-parte.

63. Cost in appeals.— In appeals before the Appellate Authority the President is authorized to fix the costs and recover them from the Appellant in any case in which the appeal is dismissed; in all cases of appeal in which a local inspection is required by the appellant he shall deposit in advance the full costs of such inspection.

64. Fees required for certificates granted on appeal.— Any order on appeal authorizing the registering of a boiler or the grant or renewal of a certificate shall be deemed to be subject to the payment of such fees as are prescribed by rules or regulations framed under the Act.

CHAPTER VIII

Penalty

65. Penalty for offences.— The owner of a boiler who operates or permits or causes the boiler to be operated at any time in contravention of any of these rules shall be punishable under section 30.

66. Repeal and savings.—The Goa Boiler Rues, 1964 as in force in the whole of the District of Goa are hereby repealed from the date of coming into force of the Goa, Daman and Diu Boiler Rules, 1983:

Provided that the provisions of section 6 of the General Clauses Act, 1897 (Central Act No. X of 1897), shall be applicable as regards such repeal:

Provided further that anything done or any action taken under such repealed rules shall be deemed to have been done or taken under the corresponding provision of these rules.

APPENDIX

FORM 'A'

Boiler Inspection

Register of Boilers (Rules 8, 15 and 19)

Register	Type	Boiler	Name of	Year and	Date of	Name	Place	Transfers
----------	------	--------	---------	----------	---------	------	-------	-----------

number	of boiler	rating	Manufacture	place of construction	Registration	of owner	where in use	remarks etc.
1	2	3	4	5	6	7	8	9

In Part II of the Register, Column (1) should contain registry numbers and letters.
FORM 'B'

³³[The Boilers Act, 1923] (Central Act V of 1923)

Notice for Examination of Boiler under sections 7 and 8
(Rule 31)

No.

of 19

³⁴[BOILER INSPECTION OFFICE]

Date the 19

To

...

...

Sir,

In reply to your application datedyou are hereby informed that Boiler Registry No. at the above named premises will be thoroughly examined by the Government

hydraulically tested

Inspector on the

To enable the examination to be made, you are bound.—

(a)to afford to the Inspector all reasonable facilities for the examination and all such information as may reasonably be required of you;

(b)to have the boiler properly prepared and ready for examination in the prescribed manner; and

(c)in the case of an application for the registration of a boiler, to provide such drawings, specifications, certificates and other particulars as may be prescribed.

Voucher No. in acknowledgement of Bank Treasury Receipt No. for Rs. accompanies.

³⁵[CHIEF INSPECTOR OF BOILERS, GOA]

(See reverse for preparation required)

(REVERSE OF FORM B)

³³ Substituted vide Goa Boiler (Fifth Amendment) Rules, 2022 Published in the O.G., Series I No. 1 dated 07-04-2022.

³⁴ Substituted vide Goa Boiler (Fifth Amendment) Rules, 2022 Published in the O.G., Series I No. 1 dated 07-04-2022.

³⁵ Substituted vide Goa Boiler (Fifth Amendment) Rules, 2022 Published in the O.G., Series I No. 1 dated 07-04-2022.

Preparation for examination

See Chapter IX of the Regulations (Regulation 376)

(a) Preparation for Inspection.

At every examination of a boiler for the grant or renewal of a certificate, the boiler shall be empty and thoroughly clean in all its parts. All those of manholes, hand holes and sight holes and cleaning plugs and all caps in the headers and mud-drums of water tube boilers, all fire bars, bearers, front plates, bridge plates, fire bridges, brick arches, oil fuel burners and mechanical stokes fittings shall be removed. All valves and cocks comprising the boiler mounting shall be opened up and taken apart and the valves or cocks ground, when necessary, before the Inspector's visit:

Provision shall, if required by the Inspector, be made for the removal of lagging or brickwork or other concealing part and for the drilling of plates and for verifying the pressure gauge and safety valve dimensions and weights. All smoke tubes, exterior of water tubes, smoke-boxes and external flues shall be swept clean.

Provision shall be made for the effective disconnection of all steam and hot water communication with any other boiler under steam as prescribed in Chapter X of the Regulations. This shall be effected either by the removal of a length of pipe from the steam and feed piping or by the insertion of substantial blank flanges. Where blank flanges are employed, they shall be inserted between the flange of the chest and the pipe attached to it. No blank flange shall be inserted between a safety valve chest and the boiler.

In the case of forced flow and forced circulation types of boilers provision shall be made for checking that proper circulation is maintained through all sections of the circuit by the flow of water.

Note: These provisions as to effective disconnection shall extend to every case wherein a person is sent or with the assent of the owner or person in-charge goes into boiler for any purpose (See Part III of Regulation).

(Regulation 378)

(b) Preparation for Hydraulic Test.

The chest of all mountings, subject to steam pressure shall be in place and shut tight or blank flanged. The safety valves shall either be jammed down or removed and the chest opening blank flanged. The attachment for the Inspector's test pump shall be in order. All doors shall be properly joined and tightened up. The boiler shall be completely filled with water, care being taken to allow all air to escape and, if possible, a preliminary test not exceeding the working pressure of the boiler be taken before the Inspector's visit to test the tightness of the joints.

When a boiler is hydraulically tested for the first time, it shall be entirely cleared of lagging or brickwork; at subsequent tests the lagging or brickwork or portions thereof, shall be removed if required by the Inspector/Chief Inspector.

PREPARATION NOW REQUIRED — (a) (b)

FORM 'C'

General Working of Boilers

(See rule 7)

Instructions to Boiler Attendants

These instructions should be frequently and carefully studied with a view to keeping in mind

the precautions to be observed and the ordinary procedure to be followed in the safe working of boilers.

Precautions before starting the fires:

Before starting the fires in a boiler, the attendant should —

- 1) see that there is sufficient water in the boiler and that the gauge cocks are working freely;
- 2) case safety valves or open cock on top of boiler to allow air to escape;
- 3) see that the blow-off cock is fully closed and tight;
- 4) see that the safety valves and feed check valve are free and workable;
- 5) note if the pressure gauge pointer is at zero;
- 6) see that the feed pump is in working order.

Shut off the lower gauge cock and empty the glass by the drain cock; then shut the drain cock and open the gauge cock; if everything is in order, the water will then rise in the glass to the same height as before.

Raising steam:— In getting up steam in all types of boilers, the operation should be as gradual as circumstances will allow. Nothing turns a new boiler into an old one sooner than getting up steam too quickly. Forcing the fires when starting work is liable to cause straining of the steam and tubes of the boiler. In the case of large boilers generally steam should not be got up in less than six hours. Before getting up steam, the water level should be observed to ensure that water is at the proper heights in the glass, the pressure gauge noted and the safety valves tried to see they are free. The blow-off cock should be examined to see that it is completely shut and tight.

Pressure gauge:— The pressure or steam gauge should be kept in order and be in such a position as to be easily seen by the boiler attendant. There should be a plain mark on it showing the highest pressure allowed for the boiler and the dial should be kept clean so that the figures may easily be read.

Steam pressure:— Ordinarily, the safety valve will prevent the steam from raising much above the working pressure, but if the steam gauge shows a rapid increase of pressure as to indicate danger of exceeding the highest limit, water should be immediately fed into the boiler and the dampers partially closed in order to diminish the effect of the fire. If, however, the water has fallen so low that there is danger of an accident from this cause the fires should be withdrawn before feeding in water, the safety valves eased and if the engine is at rest it should be started so as to reduce the pressure.

The safety valves are provided to guard against overpressure.

They should be moved by hand every day so as to prevent them from sticking. If moved only occasionally, they are liable to leak.

The valve can be rested by slowly raising it a little, and when let down, it should close perfectly tight. It should never be opened by a sudden knock or pull. If it does not close tight turn it on its seat until it fits, or when its construction does not permit this, raise it slowly a few times and let it down again, but on no account must the valve be screwed further or loaded more than what has been allowed by the Inspector.

Safety valves must never be over-loaded and spring valves should have ferrules or other provisions against the valves being screwed down too far. In case of an accident resulting from willful overloading or otherwise the offender might be held criminally responsible at the official inquiry or inquest, besides being liable for prosecution.

Low water safety valves:— If there is low water safety valve, test it occasionally by lowering

the water level to see that valve begins to blow at the right point. It should give warning "before" the water level has sunk too low and before damage can be done when the boiler is open, examine the floats and level and see that they are free and that they give the valve the full rise. With the ordinary type of high steam and low water safety valve the float should be down at its lowest position and valve full open when the boiler is empty.

The water gauge:— These will be kept in best order by frequently blowing through. The cocks are thus kept in good working condition without leaking. Blow through the drain cock at the bottom of the gauge and shut and open the steam and water cocks every few hours. These cocks should be blown through more frequently when the water is dirty. Should either of the passage become choked, or whenever the water in the gauge glass moves sluggishly the passage must be cleaned. This is best done with a wire. The gauge glass is so arranged that its top cock connects with the steam space and its bottom cock is below the water line. The water line will ordinarily be near the middle of the glass tube. Always test the glass water gauges thoroughly, the first thing in the morning and at the commencement of every shift. This is done by first opening drain cock and then shutting the upper cock which should give water; the upper cock should then be opened and the bottom cock closed which should give steam; during this test the drain cock should be kept open.

If water and steam do not appear in proper order, the cocks are choked and the passage should be cleaned. To lessen the risk of breaking the gauge glass, the water cock should always be re-opened after the steam cock.

Gauge glasses with a narrow white stripe running the whole length of the glass on the side next to the boiler are recommended as they show the water line more clearly especially when the water is dirty.

The boiler regulations framed by the Board require every water gauge glass to be fitted with a guard to prevent injury to the attendants. See that it is always in place and clean when there is steam in the boiler.

Special note.— It does not follow that there is plenty of water in the boiler because there is plenty of water in the gauge glass. The passage may be choked and empty gauge glasses are sometimes mistaken for full ones and explosions have resulted there from. Hence the importance of keeping the gauge cocks perfectly tight and clean and of blowing through the test cocks frequently.

A large number of accidents have been occurring due to inoperative water gauges and due to negligence of the attendant in not carefully reading the water level.

The blow-off cock:— The blow-off should be used daily if the water is at all dirty or sedimentary especially with locomotive type and vertical boilers, as their narrow water spaces are liable to get choked with mud, which soon hardens into a solid mass. The amount of water to be blown out depends on the size of the boiler and can be determined only from experience. When blowing out, the best result is obtained if the water has been at rest for some time (say before the engine is started) thus giving the sediment time to settle if the feed water is cleaned merely turns the cock round.

The scum cock:— When scum cocks are fitted, if the feed water is dirty, a little should be blown off daily; if the water is clean, merely turn the cock round. Before opening the scum cock, see that the water is at the height indicated by the water level pointer; otherwise the scumming will be ineffective. Water should be blown from the

surface through the scum cock when steam is being drawn off i.e. when the engine or other machinery is working.

Manholes and other door joints:— When making such joints the jointing materials should never be of round sectioned packing. Care must be taken that the spigot of the door is centrally placed in the hole, as many accidents have resulted from packing being blown out between the spigot and side of hole, even the clearance was only 3mm. The nuts must be carefully and evenly tightened. Further, tightening should be made during the process of heating up the boiler when raising steam.

Steam-pipes:— When they are properly arranged, should give no trouble. Frequently, however, they are so designed as to contain pockets, in which, while out of use, condensed steam accumulates. Such water is exceedingly dangerous and great care should be taken to see that the pipes are properly drained before the stop-valve is opened otherwise "water hammer" will take place even with the best designed steam pipes, and disastrous, explosion causing loss of life and property may occur.

Scale and grease:— Roughly speaking, scale offers a hundred times as much resistance to the passage of heat as does a similar thickness of steel or iron. A 12.7 mm. furnace plate covered with 2.5 mm. scale is as efficient a heat retarder as steel furnace 254 mm. thick. Grease is about ten times worse than scale. In a boiler at work the temperature of a clean furnace plate is only slightly in excess of that of the water in the boiler; but if scale or grease is interposed between the water and the plate, the latter acquires a temperature more nearly approximately that of the flame with which it is in contact. If the fire is fierce (artificial draught) the furnace tube may grow so hot that it elongates considerably. If in addition cold air is admitted during each firing, a concerting action of the furnace takes place which is done of the worst causes of boiler wear and tear.

Wear and tear:— Can be reduced and the life of a boiler prolonged if scale and grease are prevented from accumulating in a boiler. The combined effects of scale and grease water, level should never be lowered below the furnace-top unless the boiler is afterwards entered and this scum cleaned off the furnace plate before firing again.

Scale Removal:— The customary method is not a satisfactory one. The boiler is emptied and then cooled down by opening all the manholes and the result is that the scale which would otherwise be soft, hardens through contact with the air and requires laborious chipping off.

A very effective but slower is to retain the water in the boiler until cool and not to run it out until the men are ready to enter the boiler with water hose brushes and scrapers. The scale will then be soft and easily removed.

If time is a consideration, the cooling can be accelerated by adding cold feed to the hot water in the boiler and slowly running off the cold water. Another method is to blow off the boiler with the lowest possible pressure (not more than 1.4 kgs. per sq. cm.) and to keep it closed until cold. The scale will then be easily removed.

Treatment of Feed Water:— Many feed waters require soda or other chemicals to arrest corrosion or to change the nature of the scale.

There is no harmless chemical which will remove scale or sediment when it has once got into the boiler and the only effective process is to purify the feed water before it enters the boiler. By this means, the sediment and generally too, the added chemical, can be deposited in tanks or in filters and therefore never goes into the boiler. Excepting when the water obtainable is very good, water purifying apparatus ought to be used by any boiler owner, particularly at those works where three or more boilers are in constant work. Boiler owners wishing to have definite advice as to the best treatment of their feed water should have it analysed at some chemical laboratory and ascertain in best treatment in the particular circumstances.

Special attention is drawn to the not infrequent but very bad practice of allowing the waste steam from the Engine Cylinders or Pumps to be drained into the Boiler Feed Water tanks. The waste steam from cylinders is always fixed with a certain amount of oily matter which will be deposited in the feed water tanks and ultimately be pumped into the boiler, with possibly disastrous results as it will be obvious to every careful boiler attendant that should the oil be deposited on the furnace crowns they may become overheated and collapse.

Care should be taken by the boiler owner and the boiler attendant to see that feed water is kept as pure as possible. Impure feed water means additional expense on the upkeep of the boiler.

Preservation of boilers when not in use:— Steam boilers when not in use are liable to deterioration from corrosion and unless well cared for and made rust-proof, they may depreciate more rapidly than when in use. They should be thoroughly drained and thoroughly dried and all valves, cocks and openings closed so as to exclude moisture. Another method is to fill the boiler with water to which about 1/100 per cent caustic soda has been added.

Special instructions for Boiler No.:— This boiler should be opened up and thoroughly cleaned after a period of work which should not exceed..... A record of such cleanings should be maintained and produced, when required by the Inspector/Chief Inspector.

³⁶[FORM – D
(see rule 38-B)

Questionnaire to be submitted for approval / renewal of approval of firm for _____

1. Name and Address of the Firm :
2. Year of Establishment of Firm :
3. Type of Firm (Ltd/Pvt Ltd/Partnership/Proprietor) :

³⁶ Inserted vide the Goa Boiler (Sixth Amendment) Rules, 2024, Published in the O.G., Series I No 27 dated 03-10-2024.

4. Premises Own / Rented / Lease etc :
5. Description of the work carried out presently :
6. Details of Promoters/Owners :
(Qualification / Experience, etc)
7. Details of Technical personnel employed :
8. Details of Supervisory & Quality Control
personnel employed :
9. Details of Machineries available :
10. Details of Testing facilities :
11. Details of Quality Assurance equipment's :
12. Knowledge of code of manufacture :
13. Details of IBR welders employed :
14. Details of NDT Testing Facilities :
15. Details of Safety Equipment's :

(Name and Signature of the Owner)

Note: Details for the questionnaire above shall be furnished in separate sheets.]

By order and in the name of the Lieutenant Governor of Goa, Daman and Diu.
S. D. Sadhale, Under Secretary (Industries and Labour).
Panaji, 15th December, 1983.