

MINISTRY OF COMMERCE AND INDUSTRY
(Department of Industrial Policy and Promotion)

(CENTRAL BOILERS BOARD)

NOTIFICATION

New Delhi, the 26th August , 2015

G.S.R. 664 (E).—Whereas certain draft regulations namely, the Indian Boiler (Second Amendment) Regulations, 2015 further to amend the Indian Boiler Regulations, 1950 were published as required under sub-section (1) of Section 31 of the Boilers Act, 1923 (5 of 1923) *vide* notification number G.S.R. 285(E), dated the 15th April, 2015 for inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of the period of forty-five days from the date on which the copies of the said Gazette notification were made available to the public;

And whereas, copies of the said notification were made available to the public on the 23rd April, 2015;

And whereas, objections and suggestions have been received from various persons and stakeholders within the specified period in respect of the amendments contained in the said notification and all the objections and suggestions have been duly considered;

Now, therefore, in exercise of the powers conferred by section 28 of the Boilers Act, 1923 (5 of 1923), the Central Boilers Board hereby makes the following regulations further to amend the Indian Boiler Regulations, 1950, namely:—

1. **Short title and commencement.**—(1) These regulations may be called the Indian Boiler (Second Amendment) Regulations, 2015.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Indian Boiler Regulations, 1950 (hereinafter referred to as the said regulations) in regulation 4,—

(i) for clause (e), the following clause shall be substituted, namely:—

“(e) **Certificates for pipes.**—A certificate of manufacture and test in Form III-A, signed by the maker and the Inspecting Authority shall be furnished and well known pipe makers shall also be allowed to furnish digitally signed on-line certificate of manufacture and test in Form III-A.”;

(ii) for clause (f), the following clause shall be substituted, namely:—

“(f) **Certificates for tubes.**—A certificate of manufacture and test in Form III-B, signed by the maker and the Inspecting Authority shall be furnished and well known tube makers shall also be allowed to furnish digitally signed on-line certificate of manufacture and test in Form III-B.”.

3. In the said regulations, in regulation 290,-

(i) for clause (a), the following clause shall be substituted, namely:—

“(a) All chests and fittings shall be smooth, sound and free from flaws, cracks or other injurious defects and after completion, the chests shall be hydraulically tested at minimum one and half times the working pressure of the boiler for which they are intended.

Hydraulic test shall be made with water which may contain a corrosion inhibitor, with kerosene or with other suitable liquid provided its viscosity is not greater than that of water at a test temperature not above 52°C.”;

(ii) in clause (d), for the words, letters and figures “where, f = allowable stress in kg/mm^2 for the material at the working metal temperature ‘ t ’ to be determined on the basis given below:

The allowable stress ‘ f ’ at or below 454°C is the lower of the following two values:

$$f = \frac{Et}{1.5} \qquad f = \frac{R}{2.7}$$

For temperature above 454°C the least of the following three values—

$$(a) f = \frac{Et}{1.5} \qquad (b) f = \frac{Sr}{1.5} \qquad (c) f = Sc$$

“where, f = maximum allowable stress as available in the governing codes of the country of the material to which it belongs in kg/mm^2 . In case of non-availability of the value, the following procedure for evaluating the allowable stress values shall be adopted.

For temperature at or below 454°C, the lower of the following two values:

$$f = \frac{Et}{1.5} \qquad f = \frac{R}{2.7}$$

For temperature above 454°C the least of the following three values—

$$(a) f = \frac{Et}{1.5} \qquad (b) f = \frac{Sr}{1.5} \qquad (c) f = Sc$$

4. In the said regulations, for regulation 385, the following regulations shall be substituted, namely:—

“385: **Registration fee.**—The required fee to accompany an application under sub-section (1) of section 7 of the Act shall be as follows:—

TABLE

Sl. No.	Boiler Ratings	Fee in rupees
(1)	(2)	(3)
1	For Small Industrial Boiler as per Chapter XIV	1200
2	For Boiler Rating not exceeding 10 sq. meters	1800
3	For Boiler Rating exceeding 10 sq. meters but not exceeding 30 sq. meters	2400
4	For Boiler Rating exceeding 30 sq. meters but not exceeding 50 sq. meters	2700
5	For Boiler Rating exceeding 50 sq. meters but not exceeding 70 sq. meters	3300
6	For Boiler Rating exceeding 70 sq. meters but not exceeding 90 sq. meters	3900
7	For Boiler Rating exceeding 90 sq. meters but not exceeding 110 sq. meters	4500
8	For Boiler Rating exceeding 110 sq. meters but not exceeding 200 sq. meters	5100
9	For Boiler Rating exceeding 200 sq. meters but not exceeding 400 sq. meters	5700
10	For Boiler Rating exceeding 400 sq. meters but not exceeding 600 sq. meters	6600
11	For Boiler Rating exceeding 600 sq. meters but not exceeding 800 sq. meters	7200
12	For Boiler Rating exceeding 800 sq. meters but not exceeding 1000 sq. meters	8100
13	For Boiler Rating exceeding 1000 sq. meters but not exceeding 1200 sq. meters	9600
14	For Boiler Rating exceeding 1200 sq. meters but not exceeding 1400 sq. meters	10800
15	For Boiler Rating exceeding 1400 sq. meters but not exceeding 1600 sq. meters	12600
16	For Boiler Rating exceeding 1600 sq. meters but not exceeding 1800 sq. meters	13500
17	For Boiler Rating exceeding 1800 sq. meters but not exceeding 2000 sq. meters	15000
18	For Boiler Rating exceeding 2000 sq. meters but not exceeding 2200 sq. meters	16200
19	For Boiler Rating exceeding 2200 sq. meters but not exceeding 2400 sq. meters	18000
20	For Boiler Rating exceeding 2400 sq. meters but not exceeding 2600 sq. meters	18900
21	For Boiler Rating exceeding 2600 sq. meters but not exceeding 2800 sq. meters	20400
22	For Boiler Rating exceeding 2800 sq. meters but not exceeding 3000 sq. meters	21600

Above 3000 sq. meters, for every 200 sq. meters or part thereof, an additional fee of Rs. 600 shall be charged:

Provided that the Chief Inspector may direct that no fee shall be payable in respect of a fresh application made in pursuance of sub-section (2) of section 14 of the Act.

Inspection fee for separately fired Super-heater, Re-heater and Economiser shall be charged at the same rate as the registration fee.

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For Heat Recovery Steam Generators with finned tubes, the fee shall be calculated on heating surface area of bare tubes and on one fourth of heating surface area of fins.

Note: The State Government may, by notification in the Official Gazette, make rules for prescribing fees as per clause (f) of sub-section (1) of section 29 of the Act, which shall prevail.

385A. Inspection fee for renewal of Certificate.-- The required fee to accompany an application under sub-section (5A) of section 8 of the Act shall be as follows :—

TABLE

S.No.	Boiler Ratings	Fee in rupees
(1)	(2)	(3)
1	For Small Industrial Boiler as per Chapter XIV	1000
2	For Boiler Rating not exceeding 10 sq. meters	1600
3	For Boiler Rating exceeding 10 sq. meters but not exceeding 30 sq. meters	2100
4	For Boiler Rating exceeding 30 sq. meters but not exceeding 50 sq. meters	2400
5	For Boiler Rating exceeding 50 sq. meters but not exceeding 70 sq. meters	2700
6	For Boiler Rating exceeding 70 sq. meters but not exceeding 90 sq. meters	3400
7	For Boiler Rating exceeding 90 sq. meters but not exceeding 110 sq. meters	4000
8	For Boiler Rating exceeding 110 sq. meters but not exceeding 200 sq. meters	4500
9	For Boiler Rating exceeding 200 sq. meters but not exceeding 400 sq. meters	5000
10	For Boiler Rating exceeding 400 sq. meters but not exceeding 600 sq. meters	5800
11	For Boiler Rating exceeding 600 sq. meters but not exceeding 800 sq. meters	6300
12	For Boiler Rating exceeding 800 sq. meters but not exceeding 1000 sq. meters	7100
13	For Boiler Rating exceeding 1000 sq. meters but not exceeding 1200 sq. meters	8400
14	For Boiler Rating exceeding 1200 sq. meters but not exceeding 1400 sq. meters	9500
15	For Boiler Rating exceeding 1400 sq. meters but not exceeding 1600 sq. meters	11100
16	For Boiler Rating exceeding 1600 sq. meters but not exceeding 1800 sq. meters	11900
17	For Boiler Rating exceeding 1800 sq. meters but not exceeding 2000 sq. meters	13200
18	For Boiler Rating exceeding 2000 sq. meters but not exceeding 2200 sq. meters	14300
19	For Boiler Rating exceeding 2200 sq. meters but not exceeding 2400 sq. meters	15800
20	For Boiler Rating exceeding 2400 sq. meters but not exceeding 2600 sq. meters	16600

21	For Boiler Rating exceeding 2600 sq. meters but not exceeding 2800 sq. meters	18000
22	For Boiler Rating exceeding 2800 sq. meters but not exceeding 3000 sq. meters	19000

Above 3000 sq. meters, for every 200 sq. meters or part thereof an additional fee of Rs. 500 shall be charged:

Provided that the Chief Inspector may direct that no fee shall be payable in respect of a fresh application made in pursuance of sub-section (2) of section 14 of the Act.

Inspection fee for separately fired Super-heater, Re-heater and Feed water heater shall be charged at the same rate.

For Heat Recovery Steam Generators with finned tubes, the fee shall be calculated on heating surface area of bare tubes and on one fourth of heating surface area of fins.

For renewal of certificate for a period of six months or less on the request of owner, half of applicable fee shall be payable.

Applicable fee shall be payable again for the re-inspection of a defective boiler after completion of repairs.

For inspection on Sundays and Public Holidays under the Negotiable Instrument Act, 1881 (26 of 1881), on the request of owner, additional fee equivalent to half of applicable fee shall be payable.

Note: If any State Government has notified rules before the commencement of these regulations, for fee payable for renewal of certificate which is higher than that specified in this regulation, they may exercise option to charge fee as per those rules or as provided in this regulation.”

5. In the said regulations, regulation 388 shall be numbered as sub-regulation (1) thereof and after sub-regulation as so re-numbered, the following sub-regulation shall be inserted, namely:—

“(2) A fee of Rs. 1000 per boiler shall be charged by the transferor State from the boiler owner.”

6. In the said regulations, for regulation 392, the following regulation shall be substituted, namely:—

“392. Repairs to Boilers and Steam Pipes.-- (1) Major repairs or replacements such as tubes, coils, headers, drums, fusion welded or riveted patches to shells, fireboxes and end plates of boilers and extensive building up of wasted parts of boilers permitted under these regulations, the renewal of furnaces and end plates, parts of shell, fireboxes, girders and steam-pipes, etc., shall only be entrusted to a firm who is recognised as a repairer under these regulations.

(2) Any firm seeking recognition shall apply to the Chief Inspector of Boilers of the State in which the recognition is sought alongwith the following fee:—

TABLE

S.No.	Class of boiler repairer	Fee for recognition in rupees	Fee for renewal of recognition in rupees	Fee for endorsement in rupees
(1)	(2)	(3)	(4)	(5)
1.	Special Class	15,000/- ✓	7,500/-	5,000/-
2.	Class I	10,000/-	5,000/-	4,000/-
3.	Class II	5,000/-	2,500/-	2,000/-
4.	Class III	2,500/-	1,250/-	1,000/-

(3) A firm seeking recognition as a repairer shall meet the following requirements depending upon the class of boilers, namely:—

- (i) Class I boiler repairer.—The owner of the firm himself shall have a degree in mechanical or Production or Power Plant or Metallurgical engineering or the firm shall have on its rolls a permanently employed engineer having a degree in mechanical or Production or Power Plant or Metallurgical engineering and the said owner or the permanently employed engineer shall also have an experience of at least five years in an organisation engaged in fabrication, erection, repair or maintenance and quality control of boilers; and the firm shall also have qualified and permanently employed welders as per the provisions of these regulations;
- (ii) Class II boiler repairer.—The owner of the firm himself shall have a diploma in mechanical engineering or the firm shall have on its rolls a permanently employed engineer having a diploma in mechanical engineering and the said owner or the permanently employed engineer shall also have an experience of at least three years in an organisation engaged in fabrication, erection, repair or maintenance and quality control of boilers; and the firm shall also have qualified and permanently employed welders as per the provisions of these regulations;
- (iii) Class III boiler repairer.—The owner of the firm himself or a person permanently employed with the firm shall have a minimum three years' experience in repair, maintenance, operation, erection or inspection of boiler and the firm shall also have qualified and permanently employed welders as per the provisions of these regulations;
- (iv) Special class boiler repairer.—The owner of the firm himself shall have a degree in mechanical or welding engineering alongwith specialised experience in welding technology for a minimum period of three years or the firm shall have on its rolls a permanently employed engineer having a degree in mechanical or welding engineering alongwith specialised experience in welding technology for a minimum period of three years, and have permanently employed welders as per the provisions of these regulations who should also have valid certificate for carrying out Tungsten Inert Gas welding;
- (v)
 - (a) Where the power stations, fertilizer plants, chemical and petrochemical plants or refineries apply for repair of their own boilers, they shall have all the facilities in-house and may apply to the Chief Inspector of Boilers of the State for permission to repair their own boilers in accordance with these regulations;
 - (b) On receipt of the application for permission to repair to a boiler, the Chief Inspector of Boilers of the State shall reply to the request within a period of fifteen days of the receipt of the application.

(4) On receipt of the application under sub-regulation (3), the Chief Inspector shall send a questionnaire in 'Form XVIII' to the applicant.

(5) The Chief Inspector shall scrutinise and evaluate the application along with the replies to the questionnaire and after satisfying himself that the following requirements are fulfilled, shall recognise the firm as a repairer within a period of thirty days, in the category applied for, namely:—

- (i) that the firm possesses rectifier or generator, grinder, general tools and tackles, dye-penetrant kit, expander and measuring instruments;
- (ii) that the electric arc or oxy-acetylene welding sets and all other tools and plant in his possession for carrying out repairs are suitable for the work undertaken;
- (iii) that the quality of material used conforms to the specifications prescribed in these regulations;
- (iv) that the supervisory and operational staff employed by the firm possesses the necessary training and experience for the work undertaken;
- (v) that all welders employed by the firm possess certificates issued as required under Chapter XIII of these regulations;
- (vi) standard of work should be of high order and comply with all the requirements and test that may be specified by the Chief Inspector.

(6) The recognition of the firm as a repairer shall be for a period of two years and thereafter it shall apply for renewal of its recognition at least two months before the expiry of said period.

(7) A repairer recognised in one State shall be eligible to work in any other State by getting his recognition endorsed from the Chief Inspector or Director of Boilers of the concerned State on making payment of fee as prescribed in this regulation.

(8) In case the repairer is found indulging in violating the provisions of the Act or regulations, the firm shall be blacklisted under intimation to Chief Inspector or Director of Boilers of all the States and Union Territories and Secretary, Central Boilers Board and renewal shall not be done in any case.”.

7. In the said regulations, in regulation 393,—

(i) for clause (a), the following clause shall be substituted, namely:—

“(a) In the case of land boilers and boiler components including spares made in India for use in the States, the manufacturing drawings and the particulars of materials, design and construction of boilers shall be submitted by the makers of the boilers or boiler components or spares, as the case may be to the Inspecting Authority of the State, where the principal parts of the boilers will be manufactured, for examination and approval before commencement of the manufacture of boilers.”;

(ii) in clause (b), for the words “In the case of boilers”, the words “In the case of boilers and boiler components including spares” shall be substituted.”;

(iii) for clause (d), the following clause shall be substituted, namely:—

“(d) The fees for the scrutiny of the manufacturing drawings and the particulars of the materials design and construction of boilers and boiler components including spares under clauses (a) or (b) shall be on the scale prescribed in regulation 385A, but when the manufacturing drawings have been scrutinised and in respect of them alterations have been suggested and the same are resubmitted for scrutiny, separate fee at the rate of ten per cent of the fee for the first scrutiny of the drawings shall be payable if the manufacturing drawings contain alterations other than those previously suggested.”.

8. In the said regulations, for regulation 395, the following regulation shall be substituted, namely:—

“395. Submission of Plans of steam pipes.—(a) Plans of steam pipes including mountings and fittings shall be submitted with the prescribed fee to the Inspecting Authority before construction and to the Chief Inspector at the time of registration of the boiler for his decision whether the pipes and their arrangement comply with the regulations.

(b) (i) The fees for examination of plans and the particulars of materials, design and construction of steam pipes before the commencement of manufacture of the steam pipes shall be at the rate of **Rs. 200 for 30 metres** of piping or part thereof subject to a **minimum of Rs. 5,000**.

(ii) The fees for examination of plans and the particulars of materials, design and construction of any fitting, mountings and components (without heat transfer) like valves, dished ends, hand hole covers, man hole covers, flanges, etc., shall be Rs. 300 for each category of such identical fittings, but for fittings like de-superheaters, steam receivers, separators, fee shall be Rs. 1,000 for each category of such identical fittings.”.

9. In the said regulations, for regulation 395A, the following regulation shall be substituted, namely:—

“395A. Inspection fee for boilers and part thereof constructed in India.-- (1) The inspection fee for boilers shall be calculated at **four times the fee for renewal of certificate** for a boiler as prescribed in regulation 385A.

(2) For inspection of tubes and pipes, the fee shall be charged at the rate of Rs. 360 per metric tonne or a part thereof.

(3) Fees for inspection of boiler at the site of construction shall be charged at the rate of **four times** the fee for renewal of certificate for a boiler as prescribed in regulation 385A.

(4) For inspection of forged pipe fittings, the fees shall be charged at the rate specified for forged and cast flanges under clause (i) of sub-regulation (2) of regulation 395C.

(5) For inspection of pipe fittings other than forged pipe fittings, the fees shall be charged at the rate two times as specified for forged and cast fittings under clause (i) of sub-regulation (2) of regulation 395C.

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(6) For inspection of pipe and tube bends, the fee shall be charged at the rate of Rs. 10 per meter subject to a minimum of Rs 300 .”.

10. In the said regulations, for regulation 395B, the following regulation shall be substituted, namely:—

“395B. Inspection fee for pipes.--(a) For the pipes of nominal bore not exceeding 100 mm inclusive of all fittings excepting fittings like de-superheaters, steam-receivers, feed heaters and separately fired superheaters Rs. 500 for 30 metres of pipe or part thereof.

(b) For pipes of nominal bore exceeding 100 mm inclusive of all fittings excepting fittings like de-superheaters, steam receivers, feed heaters and separately fired superheaters Rs. 1200 for 30 metres or part thereof .”.

11. In the said regulations, for regulation 395C, the following regulation shall be substituted, namely:—

“395C. Inspection fee for valves and flanges.-- (1) Subject to a minimum inspection fee of Rs. 600 per inspection, the fees for inspection of valves shall be charged as under:—

(a) upto 25 mm	Rs. 20 per piece;
(b) above 25 mm and upto 100 mm	Rs. 60 per piece;
(c) above 100 mm and upto 250 mm	Rs. 400 per piece;
(d) above 250 mm	Rs. 1000 per piece.

(2) Fees for inspection of flanges shall be charged as under:—

(i) for forged and cast flanges,-

(a) upto and including 25 mm for a batch of 50 or part thereof	Rs. 300;
(b) upto and including 25 mm for a batch of 100 or part thereof	Rs. 520;
(c) over 25 mm upto and including 50 mm for a batch of 50 or part thereof	Rs. 580;
(d) over 50 mm upto and including 100 mm for a batch of 25 or part thereof	Rs. 580;
(e) over 100 mm upto and including 250 mm for a batch of 10 or part thereof	Rs. 620;
(f) over 250 mm for a batch of 5 or part thereof	Rs. 720;

(ii) for plate flanges, the fees shall be charged at half the rate as charged for forged and cast flanges.”.

12. In the said regulations, for regulation 395E, the following regulation shall be substituted, namely:—

“395E. Inspection fee for feed water heaters and other fittings.-- (1) Fees for inspection of feed water heaters shall be charged at Rs. 10,000 per heater.

(2) Fees for inspection of other fittings like de-superheaters, steam receivers and separately fired superheaters shall be charged at Rs. 2500 per fitting.”.

13. In the said regulations, for regulation 395G, the following regulation shall be substituted, namely:—

“395G. Inspection fee for spares and boiler components.--The inspection fee for all types of coils, namely, economiser coils, superheater coils, reheater coils, the fee shall be charged at four times the fee for renewal of certificate on the basis of surface area as provided in regulation 385A.”.

14. In the said regulations, for regulation 533, the following regulations shall be substituted, namely:—

“533. Registration fee.-- An application for registration of economiser shall be accompanied by appropriate fee as specified in regulation 385.

533A. Fee for renewal of certificate.--An application for renewal of certificate of registration of economiser shall be accompanied by appropriate fee as specified in regulation 385 A."

15. In the said regulations, for regulation 534B, the following regulation shall be substituted, namely:—

"534B. Submission of plans of feed pipes.--(1) The fees for the scrutiny of plans and particulars of the material, design and construction of feed pipes, before commencement of manufacture of the feed pipes shall be at the rate of Rs. 200 for 30 metres of piping or part thereof.

(2) The fees for the scrutiny of plans and particulars of the material, design and construction of any such fittings like feed water heater shall be charged at Rs. 2500 per fitting."

16. In the said regulations, in regulation 592, in clause (b), for the letters, symbol, words, figure and bracket "E_t = is the specified minimum elevated temperature yield stress or the 0.2% proof stress at the design temperature (in kg/cm²)", the letters, symbol, words, figures and bracket "E_t = the specified minimum elevated temperature yield stress or the 0.2% proof stress at the design temperature (in kg/cm²) as available in the governing codes of the country of the material to which it belongs" shall be substituted.

17. In the said regulations, in regulation 605A, in clause (ii), for the letters and figures "Rs. 25.00", the letters and figure "Rs. 300" shall be substituted.

18. In the said regulations, for regulation 616, the following regulation shall be substituted, namely:—

"616. Fees for examination of welders.--(1) Fees for examination of welders under these regulations shall be Rs. 600 which shall be borne by the applicant or sponsor, as the case may be and in addition, the applicant or sponsor shall bear all other expenses like cost of material and workshop and testing facilities as fixed by the Competent Authority.

(2) The fee for **endorsement of welder's certificate** shall be **Rs. 200** and shall be borne by the applicant or sponsor, as the case may be."

19. In the said regulations, for regulation 617, the following regulation shall be substituted, namely:—

"617. Penalty.--(1) Whoever employs a person in welding a boiler or steam-pipe in contravention of these regulations shall be punishable with fine which may extend to Rs. 5000.

(2) Any employer or welder who fails to maintain the records as required under regulation 615 shall be punishable with fine which may extend to Rs. 2500."

20. In the said regulations, in regulation 622, for clause (a), the following clause shall be substituted, namely:—

"(a) (i) The fee required to accompany an application under sub-section (1) of section 7 of the Act shall be as per regulation 385;

(ii) The annual inspection fee shall be as per regulation 385A."

21. In the said regulations, in Form III-A, after Note (3), the following Note shall be inserted, namely:—

"Note (4): From well known pipe manufacturers, digitally signed on-line Form shall also be accepted."

22. In the said regulations, in Form III-B, after Note (3), the following Note shall be inserted, namely:—

"Note (4): From well known tube manufacturers, digitally signed on-line Form shall also be accepted."

23. In the said regulations, for Form IV, the following form shall be substituted, namely:—

"FORM IV

STEEL MAKER'S CERTIFICATE OF MANUFACTURE AND RESULTS OF TESTS

[Regulation 4(c)(iv)]

We hereby certify that the material described below has been made by M/s. by the process, as per specifications and rolled by and has been satisfactorily tested in the presence of our Test House Manager or his representative in accordance with the stipulated tests and tolerances.

For plates and bars, the physical properties are required to be mentioned whereas, for ingots, billets, blooms, slabs and concast bars which are to be processed further, the physical properties are not required to be mentioned by the steel manufacturer.

RESULTS OF TESTS										
Heat Number	Brand and Number	Name of Product	Size			Number of pieces	Ultimate tensile strength in Kgs./mm ²	Percentage elongation	Bend tests	Remarks
			Length (meters)	Breadth (meters)	Thickness or diameter (mm)					

Chemical analysis

Other tests.....

Maker's Representative
(Name and signature)

Maker _____
(Name and signature)

We have satisfied ourselves that the _____ have manufactured the products in accordance with Indian Boiler Regulations, 1950. The tests conducted on the samples taken from the finished products have been witnessed by us and the particulars entered herein are correct.

Name and signature of
Competent Person

Name and signature of
Inspecting Authority/ Well Known Steel Maker ."

Place _____

Date _____

24. In the said regulations, for Appendix-J, the following Appendix shall be substituted, namely:—

"APPENDIX J

**INSPECTION AND TESTING OF BOILERS, BOILER COMPONENTS AND OTHER PARTS
DURING MANUFACTURE****GENERAL**

The Inspecting Authority/Competent Person shall have access to the works of the manufacturer at all reasonable times and shall inspect the manufacture of the boiler at least at the following stages and may reject any part that does not comply with the requirements of the Indian Boiler Regulations, 1950. In case of any doubt, the Inspecting Authority/Competent Person may examine at any stage other than the stages stipulated below. The manufacturer shall give at least 4 working days' notice to the Inspecting Authority/Competent Person before reaching each stage. Before undertaking any of the stage inspections, the Inspecting Authority/Competent Person shall satisfy himself that the testing equipment/instrument has been properly calibrated.

STAGES OF INSPECTION

Each boiler shall be inspected during manufacture by a Competent Person nominated by the Inspecting Authority. Sufficient inspections shall be made to ensure that the materials, manufacturing and testing conform to the requirements of these regulations.

Stages of Inspection During Manufacture**A. Shell Type Boilers**

- (a) (i) When the materials are ready for identification with the relevant material test certificates at boiler maker's works;
- (ii) In laying out and cutting the plates, the plate identification mark shall be located so as to be clearly visible after the boiler part is completed. If the plate's identification mark is unavoidably cut out, it shall be transferred by the manufacturer to another part of the component to the satisfaction of the Inspecting Authority/Competent Person;
- (iii) The Inspecting Authority/Competent Person shall identify weld test plate material if production weld tests are required;
- (b) When the Shell plate and end plates have been formed with plate edges prepared for welding and test plates are attached;
- (c) When the welding of main cylindrical shell is completed and checked for circularity;
- (d) To examine radiographs and/or reports of non-destructive testing;
- (e) When openings have been prepared and stand pipes and similar connections including end plates have been tackwelded in position and subsequently on completion;
- (f) When welding of drum or shell is completed and to check the records of heat-treatment when heat treatment is required under these regulations;
- (g) When weld test specimens have been prepared from the test plate, previously selected to witness the required testing;
- (h) During hydraulic test, followed by external and internal examination and stamping.

B. Water Tube Boilers**(I) Welded drums, headers, separators and vessels**

- (a) (i) When the materials are ready for identification with the relevant material test certificates at boiler maker's works;
- (ii) In laying out and cutting the plates, the plate identification mark shall be located so as to be clearly visible after the boiler part is completed. If the plate's identification mark is unavoidably cut out, it shall be transferred by the manufacturer to another part of the component to the satisfaction of the Inspecting Authority/Competent Person;
- (iii) The Inspecting Authority/Competent Person shall identify weld test plate material if production weld tests are required;

- (b) When the plates are formed to cylindrical shape with the edges prepared for welding and set up in readiness for commencement of welding and attachment of test plates;
- (c) When the welding of the main cylindrical shell is completed, the shell checked for circularity and the radiographic or ultrasonic test reports, records are available for scrutiny;
- (d) When the end plates are ready for identification with the mill certificate, formed to shape with weld edges prepared and set on to the cylindrical shell in readiness for the circumferential welding operation;
- (e) When the welding of the end plates to the drum or the header is complete and the radiographs or ultrasonic examination records are available for scrutiny;
- (f) When each drum or header is prepared to receive any compensation plates and attachments, and when at least 10% of each type of branch of tube stub is set up ready for welding;
- (g) When all welding on each drum or header is complete, the Inspecting Authority/Competent Person will check the records of heat treatment, and mark off of specimens for preparation and testing from test plates;
- (h) During non-destructive examination, after stress relieving, on alloy steel drums and carbon steel drums with carbon content exceeding 0.25 % or thickness more than 100 mm;
- (i) During hydraulic test followed by final examination and stamping.

(II) Seamless drums, headers, separators and vessels

- (a) When materials are ready for identification with the relevant material test certificates, also when each cylinder is prepared for forming, or welding of separate end closures and to identify test plate material;
- (b) When the end plates are ready for identification with the mill certificate, formed to shape with weld edges prepared and set on to the cylindrical shell in readiness for the circumferential welding operation;
- (c) When the welding of the end plates to the drum or the header is complete and the radiographs or ultrasonic examination records are available for scrutiny;
- (d) When each drum or header is prepared to receive any compensation plates and attachments, and when at least 10% of each type of branch of tube stub is set up ready for welding;
- (e) When all welding on each drum or header is complete, the Inspecting Authority will check the records of heat treatment, and mark off of specimens for preparation and testing from test plates;
- (f) During non-destructive examination, after stress relieving, on alloy steel drums and carbon steel drums with carbon content exceeding 0.25 % or thickness more than 100 mm;
- (g) During hydraulic test followed by final examination and stamping.

C. Tubular and piping components

- (a) When the tubes or pipes are ready for identification with the relevant material test certificates at the boiler makers' works;
- (b) When all welding of tubes or pipes and their attachments are complete and the non-destructive examination and stress relieving report/records are available for scrutiny;
- (c) During hydraulic test followed by final examination and stamping.

D. Inspections and tests to be carried out at Steel Makers' Works Foundry/Forging Units and the pipe and tube makers' works by the Inspecting Authority/Competent Person:

(I) Steel Makers Works

- (a) For manufacture of the billets, ingots, slabs, blooms, plates, bars, concast bars or any other material to be used in the construction of the boilers:
 - (i) checking of the chemistry of steel as per regulations;
 - (ii) when ready for non-destructive examination and selection of mechanical test specimen after heat treatment;
 - (iii) testing, final examination and stamping.

Note : Notwithstanding anything specified above where the steel is made by the Well-known Steel Maker as recognised under the Indian Boiler Regulations, 1950 by the Central Boilers Board these tests will be carried out and certified by the Steel Makers themselves and the records maintained.

(II) Pipe and Tube Makers

- (i) Identification of materials with relevant material test certificates;
- (ii) when ready for non-destructive examination and selection of mechanical test specimens after heat treatment;
- (iii) when specimen is tested and pipes/tubes are ready for hydraulic tests.
- (iv) final inspection and stamping

Note : Notwithstanding anything specified above, when the pipes/tubes are manufactured by well-known pipes/tubes makers recognised under the Indian Boiler Regulations, 1950 by the Central Boilers Board, all the above stages of inspections shall be carried out and certified by the manufacturers of pipes and tubes themselves and records maintained.

(III) Forging Units:

- (i) checking of the chemistry of steel as per regulations;
- (ii) when ready for non-destructive examination and selection of mechanical test specimen after heat treatment;
- (iii) testing, final examination and stamping.

Note: Notwithstanding anything specified above, when the forgings are made by well-known forging units as recognised under the Indian Boiler Regulations, 1950 by the Central Boilers Board then tests will be carried out and certified by the Forges themselves and all records are maintained properly.

(IV) Foundry Units:

- (i) checking of the chemistry of molten metal;
- (ii) verification of heat number and stamping of test bars;
- (iii) verification of non-destructive examination report and heat treatment reports/records, mechanical testing, final examination & stamping.

Note: Notwithstanding anything specified above, when the castings are made by well-known foundry units as recognised under the Indian Boiler Regulations, 1950 by the Central Boilers Board then tests will be carried out and certified by the Foundries themselves and all records are maintained properly.

E. Valves and Mountings

- (a) identification of materials with the relevant material test certificates;
- (b) hydraulic test and stamping."

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