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Under the Indian Boiler Regulations, 1950

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“FORM I

(See regulation 386)

MEMORANDUM OF INSPECTION BOOK
OR
REGISTRATION BOOK

BOILER INSPECTION DEPARTMENT

BOILER REGISTRY NUMBER

GENERAL

District……
Owner……
Address of Factory……..

Nearest Railway Station…….
Factory is…….. KMs …… from station
Work or Factory……..…..
Working Season ……

Boiler registered at…… on……
Register Book No. …… Page……...
Registry Number…… verified on…….
Approved Working Pressure
Boiler Rating…… Inspection Fee……...
Registration Book Filed at……. on……. …….

Remarks on transfers, etc.

PROVISIONAL ORDER AND CERTIFICATE RECORD

Fee Rs	*Date of Payment*	*Date of Inspection*	*Certificate No. and Date*	*Period of certificate*	*Working Pressure Kg/cm2*	*Boiler Rating*	*Evaporation T/hr or Kg/hr*	*Initials of Inspector/ Competent Person*

PARTICULARS AND DIMENSIONS

Type of Boiler:
Maker:
Place and Year of make :
Description of Boiler:

Leading Dimensions:
Intended Working Pressure :
Maker's Number :

Details of Maker's stamp

Position of Stamp ……

MAKER'S CERTIFICATE

Boiler Name……
Maker Manufacture, hydraulic test to …… Kgs/Cm². Drawing No.…… received……

Inspecting Name……
Authority Tests of material, construction, supervision, hydraulic test…… received……..

DETAILS OF PRESSURE PARTS

S NO	NAME OF THE PRESSURE PART	SIZE	MATERIAL SPECIFICATION

CYLINDRICAL SHELL

	(a) *Shell or Mud Drum*	*(b)* *Steam Drum*
Name of parts		
Number		
Length between end plates		
Length between end plates seam		
Diameter inside largest belt		
Thickness of Plates		
Number of belts of plating		
Longitudinal seams		
Position (o'clock)		

Circumferential seams No. of seams (end and inner)		

SHELL END PLATES AND STAYS

PLATES	Flat, dished, hemispherical (in……. pieces,) not stayed, not flanged			
	Diameter (outside), front…… back,……...		crown……	Largest circle ……...
	Radius of curvature front…….		back, ……	crown ……...
	Radius of curvature, corner of flange,……...		shell, ……	furnace, …… uptake, …
	Plate, thickness, front …… back, …….		crown……	tubeplate F,…….. B, ….
	Attach. to shell, crown or front, …….			
	Attach. to shell, back end, ……...			
	Attach. to uptake or furnace crown or front,…….			
	Attach. to furnace flue, back end……...			

STAYS	Gusset Stay, No. F.E., top, ……	Bottom, ……..	B.E., top, ……...	bottom, ……..
	Longtl. Stays No. …….	dia., …….....	…….	, ……...
	Longtl. Stays pitch, Vertical ……..	Horizontal…… ….....	Circumferential	……...
	Diagl. Do, …….			

MANHOLES, HAND AND SIGHT HOLES, DOORS AND STAND BLOCKS

Parts and materials hereunder.....……..

MANHOLES	No. and position			
	Framed or plate flanged			
	Boiler opening, length × width			
	Frame opening, length × width			
	Frame inside, outside, raised, pressed			
	Frame solid, welded, cast			
	Frame section on longtl. axis			

	Door, type and thickness Door, if inside, spigot clearance Bolts, No. dia., threads Nut Bolts, pitch circle Compensation ring, width x thickness			

SIGHT HOLES	No. …….....	dimensions …….	positions ……...
	Compensation rings fitted ……	section ……	
	Doors, type …….	bolts dia.,…….. threads……	spigot clearance……..
	Cleaning plugs, No ……	dia. …….....	position ……
BLOCK ETC.	Height ……...	dia. (outside), top,… bottom….	thickness ……..……..
	Standpipe below stop valve, ……	height,…… dia. (outside) ……	thickness ……..……..
	Flanges ……...		

FIREBOX DETAILS

DETAILS OF FLUE TUBES

I &II PASS TUBES	No. plain, …….....	Stay overall	length …… specification ……...
	Plain, dia. (out) …….....	thickness, …	Front End.,welded, expd., beaded, feruled. Smoke End.,welded Expd., beaded, or …..
	Stay, dia. (out) …….....	thickness, …….	F.E.,welded, expd., beaded, , S.E,welded, Expd., ..
	Pitch of plain tubes, V ….	H …….....	D ……. C.Z. …….
	Pitch of stay tubes, V …..	H…….	D ……... C, Z …….
II &III PASS TUBES	No. plain, ……...	Stay overall	length …… specification ……...
	Plain, dia. (out) …….....	thickness, …	Front End.,welded, expd., beaded, feruled. Smoke End.,welde Expd., beaded, or …..
	Stay, dia. (out) …….....	thickness, …….	F.E.,welded, expd., beaded, , S.E,welded, Expd., ..
	Pitch of plain tubes, V ….	H ……. D …….	C.Z. …….
	Pitch of stay tubes, V …..	H…… D ……...	C, Z …….

FURNACE, CROWN AND UPTAKE

HORIZONTAL AND VERTICAL FURNACES

No., …… Type ……

No. of stiffener rings in each Furnace…… Longtl. seams position

Length between Centre	
Inside diameter	
Plate thickness	
Positions of cross tubes or stiffener	

MOUNTINGS AND FITTINGS

Valves etc.

	Number	*Diameter*	*Type*	*Material*	*Bolted OR welded to*
Safety					
Safety					
Main. Stop					
Aux. Stop					
Feed					
Blow Down					
Injector					

MISCELLANEOUS FITTINGS

Water gauges, No. …… type …… Test cocks No. ……

Water gauges, top of lower nut is …… …… mm above ……..

Pressure gauge, Type …….. dia.in mm … range …… Kg/cm²

Pressure gauge, Maker …… No. ……. red line at …… Kg/ cm²

Fusible plug, type ……. ……. position …….

Blow down pipe connected to ……

Feed apparatus ……

Additional fittings ……

SAFETY VALVES

	(A)	(B)	(C)
No. of valves each chest …….			
Type ……			
Diameter of valve seat(mm)..			
Diameter of Neck(mm)……..			
Diameter of outlet(mm)…….			
……..			

REQUISITE AREA OF SAFETY VALVES

For Saturated steam

$$A = \frac{E}{C.P.}$$

For Superheated steam

$$As = A\sqrt{\left(1 + \frac{1.5T}{1000}\right)}$$

E = ; C = ; P = ; A =

As = ; T = ; A = ;

HEATING SURFACE

Total Heating Surface ……Sq. m.

Boiler Rating ……..……

HYDRAULIC TEST (REGISTRATION)

Inspector …… Date of test …… Test pressure …… Kgs/ cm²

Duration of test …… mins. Boiler pressure, gauge No. …..…… use at test ……..

Boiler pressure gauge compared with ……... on …… found …….

Position of Boiler at test ……

Brick work …… Lagging ……..……

Condition of boiler under test ……..

Condition of boiler mountings under test ……...……

M I book prepared by …… on …… submitted on …….

M I Book Checked by …….. on ……..

Least pressure, that for……Kg/ cm²

Approved working pressure…… Kg/ cm²

Chief Inspector/Director of Boiler's remarks and signature ……

STEAM TEST (REGISTRATION)

Inspector …… Date of Test …… …

Approved working pressure ……. .Kg/ cm² Test pressure …….. Kg/ cm²

Boiler connections …… Condition of fire ……..

Fuel used …….. Draught …….

Safety Valve lifted at (A) …… kg/ cm².. (B) …… kg/ cm². (C) …… kg/ cm²..

	Beginning	5 mins.	10 mins.	15 mins.	Difference
Timing of test……					
Height of water in glass……					
Pressure by Boiler gauge……..					

Accumulation of pressure, in (%)……..

Do safety valves efficiently relieve boiler? …….

Condition of boiler under steam ……

Condition of mountings under steam ……..

Thickness of washers or ferrules …….

Feed pump or injector worked ……..

Water gauge tested ……

Boiler Attendant (or) Boiler Operation Engineer ……..

Limit of load on safety valves to be entered in Certificate ……

NOTES ON WORKING OF BOILER

Boiler is used for ……..
Constant, intermittent or seasonal work ……
Is boiler relieved by spare boiler ? ……..
Nature of feed water ……
Fuel used …… Are printed instructions kept near boiler ? ……
Period between cleanings recommended by Inspector ……..

STEAM-PIPES

PLAN OF MAIN STEAM-PIPES

Registry Nos. of connected boilers ……

Provisions for disconnection from other boiler …….

RECORDS OF INSPECTIONS AND TESTS

First inspection by …… on ……

First hydraulic test to Kgs/ cm² … by …… on ……

INSPECTION NOTES

PARTICULARS OF BOILER ATTENDANTS &BOILER OPERATION ENGINEER				
Date of visit	Name	Grade	Certificate No.	Date of Issue".

".

"FORM II (1)

[See regulation 4(c)(i)]

CERTIFICATE OF INSPECTION FOR SHOP ASSEMBLED BOILERS

INSPECTING AUTHORITY:_____ Certificate No._____

We hereby certify that the _____Boiler, built by M/s_____ _____ under Maker's number _____ was constructed under our supervision and inspected at various stages of construction by the Competent Person and that the construction and workmanship were satisfactory and in accordance with the standard conditions for the design and construction of boilers as per regulations framed under the Boilers Act, 1923.

The boiler is stamped on the _____ Shell Plate with stamp as shown hereunder:-

MAKER'S NAME : _____

MAKER'S NO. : _____ YEAR OF MAKE : _____

TESTED TO : _____ Kg./cm² (g) ON : _____

W.P. : _____ Kg./cm² (g)

COMPETENT PERSON'S OR INSPECTING AUTHORITY'S OFFICIAL STAMP

The boiler on completion was subjected to a Hydrostatic test pressure of _____ kg/cm² (g) in the presence of the Competent Person on _____ day of _____ and satisfactorily withstood the test.

All welded seams were subjected to destructive and Non-Destructive examination wherever applicable and found satisfactory.

We have satisfied ourselves that the construction and dimensions of the boiler are as shown in the Maker's Drawing Number _____ signed by us and that the particulars entered in Maker's certificate of manufacture in Form III countersigned by us are correct to the best of our knowledge and belief.

Signature of Competent Person

Signature of Inspecting Authority
Date and Seal

FORM II (2)

[See regulation 4(c)(i)]

CERTIFICATE OF INSPECTION FOR SITE ASSEMBLED BOILERS

INSPECTING AUTHORITY :_____ Certificate No. _____

We hereby certify that the_____ boiler; built by M/s_____ _____ under Maker's Number _____ was constructed under our supervision and inspected at various stages of construction by the Competent Person and that the construction and workmanship were satisfactory and in accordance with the Standard Conditions for the design and construction of boilers as per regulations framed under the Boilers Act,1923.

The Boiler components are stamped as per details below, wherever applicable.

Component Name Drawing No.

Stamping Details

Maker's Name :_____
Maker's Number :_____ Year of make :_____
Tested to :_____ Kg/cm²(g) on _____
W.P. : _____ Kg/ cm² (g)

Competent Person's or Inspecting Authority's Official Stamp

Samples of materials used in the constructions of the boiler were tested in the presence of the Competent person and found to comply with the regulations.
All welded seams were subjected to destructive and Non-Destructive examination wherever applicable and found satisfactory.

We have satisfied ourselves that the construction and dimensions of the boiler are as shown in the Maker's Drawing Number_____ signed by us, and that the particulars entered in the Maker's certificate of manufacture in Form III countersigned by us are correct to the best of our knowledge and belief.

Signature of Competent Person Signature of Inspecting Authority
Date and Seal ".

FORM II-A

INSPECTING AUTHORITIES CERTIFICATE OF INSPECTION DURING CONSTRUCTION IN RESPECT OF A BOILER MADE TO FOREIGN CODE FOR EXPORT

[Regulation 3A]

Designation of Inspecting Authority

We hereby certify that the …… type boilers; length …… diameter …… working pressure …… built by Messrs …… under Shop No. …… was constructed under our supervision and inspected at various stages at construction by the Competent Person and that the design, construction and workmanship were satisfactory and in every respect in accordance with …… Code Specification. The boiler is stamped as under :

The boiler on completion was tested to …… in the presence of the Competent Person on …… and it satisfactorily withstood the test. Details of tests and inspections are furnished with this certificate.

We have satisfied ourselves that the design, construction and dimensions of the boiler are as shown in the Maker's Drawing No. …… approved and signed by us, and that the particulars entered in the Maker's Certificate of manufacture are correct to the best of our knowledge and belief.

Maker's certificate, signed by them and countersigned by us, as required by the …… Code/Specification, is enclosed.

Signature of Inspecting Authority

FORM II-B

INSPECTING AUTHORITY CERTIFICATE OF INSPECTION DURING CONSTRUCTION OF BOILERS FOR WHICH VARIATIONS FROM STANDARD CONDITIONS HAVE BEEN PERMITTED

[Regulation 4(c)(1) Note]

Designation of Inspecting Authority

We hereby certify that the …… type boilers; length …… diameter …… working pressure …… built by Messrs …… at …… under Shop Number …… was constructed under our supervision and inspected at various stages of construction by the Competent Person, and that the design, construction and workmanship were satisfactory and in accordance with the variations from the standard conditions laid down in the Indian Boiler Regulations, 1950, for material design and construction features have been permitted by the Board of Inspecting Authority under the Indian Boilers Act, 1923.

The Boiler is stamped on the front end plate with our stamp as shown hereunder :—

Maker's Name …… Year of Make …… Works Number …… Tested to …… on …… W.P. Competent Person's or Inspecting Authority's official stamp.

The boiler on completion was
The drum and header were

subjected to a water pressure test of…… in the presence of Competent Person on …… 20 …… and satisfactorily withstood the test.

*Samples of materials used in the construction of the boiler were tested in the presence of the Competent Person and found to comply with the requirements. All welded seams were subjected to physical tests and radiographic examination wherever applicable and found satisfactory.

Note: Strike off this paragraph where no such test have been carried out and the certificate in Form IV by a Well-Known Maker is intended to be furnished.

* Strike out which is not applicable.

We have satisfied ourselves that the constructions and dimensions of the boiler are as shown in the Maker's Drawing No. …… signed by us and that the particulars entered in the Maker's certificate of manufacture in Form III countersigned by us, are correct to the best of our knowledge and belief. Particulars of variations from the standard conditions laid down in the said regulations as permitted by the Board or Inspecting Authority are enclosed.

Signature of Inspecting Authority

Dated at …… this …… day of …… 20……

“FORM IIC
INSPECTING AUTHORITIES CERTIFICATE OF INSPECTION DURING ERECTION
[Regulation 4 (c) (1)]

Designation of Inspecting authority

We hereby certify that the.....type boilers working pressure.....kg/square cm built by Messrs..... at..... under makers number ..... was erected under our supervision and inspected at various stages of erection by the Competent Person and that the erection and workmanship were satisfactory and in accordance with the Standard Conditions for construction of land boilers under the Indian Boilers Act, 1923.

All welded seams were subjected to post weld Heat treatment and Non-destructive examination wherever applicable and found satisfactory.

The boiler on completion of erection was subjected to a water pressure tests of .....Kg per Square cm in the presence of the Competent Person on.....and satisfactorily withstood the test.
We have satisfied ourselves that the erection of the boiler are as shown in the Maker’s Drawing No.....are correct to the best of our knowledge and belief.

Signature of Competent Person *Signature of Inspecting authority*
Dated at .....this..... Day of .....20..... .”.

"FORM III

[See regulation 4(c)(ii)]

Constructor's Certificate of Manufacturer and Test

1. Description	Constructor's Name and address…… Manufactured for/Stock purposes …….. Contract No. …….. Type of Boiler …….. Length overall Diameter inside Largest belt …… Design pressure …….. Kg/cm² Reheater Pressure ---------- ----------Kg/ cm² Maker Number of boiler …….. Year of Make …….. Total heating surface …… Sq. m Evaporation capacity …… (for calculation of relieving capacity of safety valves) Final Temperature of steam (Design) Superheater Outlet……ºC Reheater Outlet …… ºC Brief description of boiler ……
2. Parts manufactured at the constructor's works	Name of Components(s)…….. Drawing No…….. Manufactured by …… Identification marks …….. Part(s) manufactured, inspected at all stages of construction by …… (Inspecting Authority). Part(s) hydraulically tested and inspected after test by …….
3. Parts manufactured outside the constructor's works	Name of Components(s) …… Drawing No…….. Manufactured by …… Identification marks …….. Part(s) manufactured, inspected at all stages of construction by …… (Inspecting Authority). Part(s) hydraulically tested and inspected after test by …….

Note: Similar information is to be furnished for each part manufactured outside the constructor's Works.

4. Construction

(a) The construction is in accordance with Chapter III/ V / X / XII / XIV of the Indian Boiler Regulations.

Number of longitudinal seams in shell/drum in each belt ……..

Number of longitudinal seams in furnace in each ring ……

Number of circumferential seams in shell/drum ……..

(including end seams) ……

Number of circumferential seams in the furnace ……

Details of repairs, if any, carried out in welded seams during construction ……

Details of heat treatment ……

All welded seams were subjected to Radiographic examination to the satisfaction of the Inspecting Authority, where required.

Note : Strike out whichever is not applicable

5. Details of Drums/Shells

No.	*Nomenclature*	*Nominal dia.*	*Length*	*Shell plate*		*Tube plate*		*Head*			*Manholes No. & Size*	*Hydrostatic test lbs./sp.in*
				Thickness in mm.	*Inside radius mm.*	*Thickness in mm*	*Inside radius mm*	*Thickness in mm*	*Type**	*Radius of dish in. mm*		
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*

*Indicate (1) Flat (2) Dished (3) Ellipsoidal (4) Hemispherical.

6. Headers and Boxes

Description	*Size and shape*	*Thickness in mm*	*Head or end*		*Hydrostatic test* Kg/ cm²
			Shape	*Thickness in mm*	

7. Mountings

No.	*Nomenclature*	*Material*	*Type*	*No.*	*Size*
1.	Main stop valve				
2.	Auxiliary stop valves				
3.	Safety valves (a) (b) (c)				
4.	Blow down valves				
5.	Feed Check valves				

8. Details of the safety valves and test results (Regulation 4 (c) (Vii)

Manufacturer …….
Identification marks of valves …….
Maker's No. ……..
Type ……
Life (mm) …… Drawings Nos. ……..
Valves details :
Material
……
Valve Seat
…….
Flat/Bevel
……..
Diameter of valve seating ……..
Valve Body :
Material
……
Opening at neck ……..
Opening at outlet …….
Springs:
Material
……..
Process of manufacture ……..
Chemical composition …….
Dimensions :
Outside diameter of coil ……..
Section of wire …….
Number of coils
…….
Free length of coils ……..
Test results :
Place of test …… Date ……
Closing down pressure ……

Remarks :
Does the valve chatter? ……..

Does the valve seat leak? ……..
Blow off pressure ……..…
Type of valve and extract of test results ……..
Type of valve
……..
Place of test …… date ……
Constant 'C' by test results …….

Capacity of the valve for the intended blow off pressure ……..

Signature of Maker's representative *INSPECTING AUTHORITY witnessing tests*

---

9. Certified that the particulars entered herein in manuscript by us are correct and that parts and fittings in sections 2 to 9, against the names of which entries are made have been used in the construction and fittings of the boiler.

The particulars shown against the various parts used are in accordance with the enclosed certificates from the respective Makers.
The design of the boiler is that as shown in Drawing Nos. ……

The boiler has been designed and constructed to comply with the regulations under the Boilers Act, 1923, for a working pressure of …… *Kg/* cm² at our Works above-named and satisfactorily withstood a water test of …… *Kg/* cm² on the …… day of …… 20 …… in the presence of our responsible representative whose signature is appended hereunder.

Least pressure is for (name of the component)_____ and is _____ kg/cm²(g)

Maker's Representative

(Name, signature and stamp)

Maker _____

(Name, signature and stamp)

Name, signature and stamp of
Competent Person

Name, signature and stamp of
Inspecting Authority

Dated …… the day of …… 20……".

" FORM III-A
[See regulation 4(e)]

Certificate of Manufacture and test for Pipes

Certificate No.---------- Date:-------
Name of part & Quantity……
Drawing No…….
Maker's name and address……..
Customer's Name & Address……..
Design pressure……Kg/cm²
Design temperature…….. ºC

RAW MATERIAL
Process of manufacture……
Fully Killed/rimmed……
Chemical composition…….
Heat Number……..
Size……
Test Certificate No. & Date……....
Name of the Steel Maker…….
Name of Inspecting Authority…….
PIPES
Process of manufacture……..
Main dimensions……...
Tolerances……
Specification……
Bend test on pipe or weld ……..
Flattening test…….
Other tests…….
Tensile strength……..
Chemical Composition…….
Heat treatment……...
Hydraulic test…… Kg/cm²

Identification mark of Inspecting Authority/Well known pipe maker …….

NOTE.- In addition, the following information in respect of the material shall be furnished in a tabular form in conformity with the requirements of regulation 4(c)(vi) or the note thereto, as the case may be. The information may be given from the established test data or if the material is of standard quality an extract from the standard may be furnished instead.

Metal temperature °C	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
E_t															
S_c															
S_r															
MAWP															

Tensile strength at 20°C.

Where

E_t = Yield point at temperature t (0.2% proof stress)

**S_c = Average stress to produce an elongation of 1% (creep) in 100,000 hours at various working metal temperatures.

**S_r = Average and lowest stress to produce rupture in 100,000 hours at the various working metal temperatures.

MAWP = Maximum Allowable Working Pressure in Kg./cm²

Temperature range in the table may extend upto the limit of applicability of the material.

**The value of S_c and S_r need be furnished only in respect of Pipes intended to be used for working metal temperature above 454°C (850°F).

Certified that the particulars entered herein are correct. The particulars of fabricated component are shown in drawing No. .....

The pipe has been designed and constructed to comply with the Indian Boiler Regulations for a maximum working pressure of _____ Kg/cm² and maximum temperature of _____ºC and satisfactorily withstood a water test of ____ Kg/cm² on the _____ day of _____ 20___, in the presence of our responsible representative whose signature is appended hereunder.

Maker's Representative
(Name and signature)

Maker _____
(Name and Signature)

We have satisfied ourselves that the _____ have been constructed in accordance with Indian Boiler Regulations 1950. The tests conducted on the samples taken from the finished pipes 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 Pipe Maker

Place _____
Date _____

NOTE (1).- This form is intended for the use of both pipe manufacturers and pipe fabricators. Only such of the columns or paragraphs that are applicable, or information that can be obtained and furnished from other certificates, need be filled or entered in this form.

NOTE (2).- In the case of fabrications made from steel pipes obtained from elsewhere, particulars in regard to the "material" and "pipes" shall be taken from similar forms of certificates obtained in respect of pipes and noted in the appropriate columns or paragraphs.

NOTE-(3).- For Stock and sale purpose, one Form shall be issued for not more than five pipes.

In the case of pipes made from steel, made and tested by well known Steel Makers in India or other countries, particulars regarding the 'material' as certified by them in Form IV shall be noted in the appropriate columns or paragraphs of Raw material in this certificate.".

"FORM III-B

[See regulation 4(f)]

Certificate of Manufacture and Test for Tubes

Certificate No.---------- Date:---------

Name of part & Quantity……

Drawing No…….

Maker's name and address……..

Customer's Name & Address……..

Design pressure…… Kg/cm²

Design temperature…….. ºC

RAW MATERIAL

Process of manufacture……

Fully killed/rimmed……

Chemical Composition…….

Heat Number……..

Size……

Test Certificate No. & Date……....

Name of the Steel Maker…….

Name of Inspecting Authority…….

TUBES

Process of manufacture……

Main dimensions……..

Tolerances……

Specification……...

Tensile strength……

Chemical Composition……

Elongation percentage…….

Bend test……..

Flattening test……..

Crushing test……

Flare test……..

Flange test……

Other Tests

Heat treatment……

Hydraulic test…… Kg/cm²

Identification mark of Inspecting Authority/Well known tube maker …….

NOTE.- In addition, the following information in respect of the material shall be furnished in a tabular form in conformity with the requirements of Regulation 4(c)(vi) or the note thereto, as the case may be. This information may be given from the established test data or if the material is of standard quality, an extract from the standard may be furnished instead.

Metal temperature °C	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
E_t															
S_c															
S_r															
MAWP															

Tensile strength at 20°C……

Where

E_t = Yield at temperature t (0.2% proof stress).

**S_c = Average stress to produce an elongation of 1%(creep) in 100,000 hours at the various working metal temperatures.

**S_r = Average and lowest stress to produce rupture in 100,000 hours at various working metal temperatures.

MAWP = Maximum Allowable Working Pressure in Kg./cm²

Temperature range in the table may extend upto the limit of applicability of the material.

**The value of S_c and S_r need be furnished only in respect of tubes intended to be used for working metal temperature above 454°C (850°F).

Certified that the particulars entered herein are correct. The particulars of fabricated component are shown in drawing No. .....

The tube has been designed and constructed to comply with the Indian Boiler Regulations for a maximum working pressure of _____ Kg/cm² and maximum temperature of _____ºC and satisfactorily withstood a water test of ____ Kg/cm² on the _____ day of _____ 20___, in the presence of our responsible representative whose signature is appended hereunder.

Maker's Representative
(Name and signature)

Maker _____
(Name and Signature)

We have satisfied ourselves that the _____ have been constructed in accordance with Indian Boiler Regulations 1950. The tests conducted on the samples taken from the finished tubes 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 Tube Maker

Place _____
Date _____

NOTE (1).- This form is intended for the use of both tube manufacturers and tube fabricators. Only such of the columns or paragraphs that are applicable, or information that can be obtained and furnished from other certificates, need be filled or entered in this form.

NOTE (2).- In the case of fabrications made from steel tubes obtained from elsewhere, particulars in regard to the "material" and "Tubes" shall be taken from similar forms of certificates obtained in respect of pipes and noted in the appropriate columns or paragraphs.

NOTE-(3).- For Stock and sale purpose, one Form shall be issued for not more than ten tubes.

In the case of tubes made from steel, made and tested by well-known Steel Makers in India or other countries particulars regarding the 'material' as certified by them in Form IV shall be noted in the appropriate columns or paragraphs of Raw material in this 'certificate.".

"FORM III-C

[See regulation 4(g)]

Certificate of Manufacture and test of Boiler Mountings and Fittings

Certificate No. …….. Date:------

Name of part…

Quantity --------- SL No …….

Drawing No……..

Maker's name and address……

Customer's Name & Address……..

Design pressure……..... .kg./cm^2

Design temperature…….. ºC

Metal temperature ºC	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
MAWP															

MAWP = Maximum Allowable Working Pressure in Kg./cm²

Hydraulic test pressure…… .kg./cm^2

Main dimensions……

Specification……

Inspecting Authority's Identification Marks……

Chemical composition……..

Physical test results……..

(i) tensile strength……

(ii) transverse bend test……..

(iii) elongation……

Other Tests……..

RAW MATERIAL

Process of manufacture……

Fully killed/rimmed……

Specification……

Heat Number……..

Size……

Test Certificate No. & Date……....

Name of the Maker……..

Name of Inspecting Authority……..

Certified that the particulars entered herein by us are correct.

The _____ has been designed and constructed to comply with the Indian Boiler Regulations 1950 for a maximum working pressure of _____ kg./cm^2 and maximum temperature of _____ ºC and satisfactorily withstood a hydraulic test using water or kerosene or any other suitable liquid to a pressure of _____ kg./cm^2 on the _____ day of _____ 20___ in the presence of our responsible representative whose signature is appended hereunder:

Maker Representative
(Name and signature)

MAKER_____
(Name and Signature)

We have satisfied ourselves and the _____ has been constructed and tested in accordance with the requirements of the Indian Boiler Regulations, 1950. We further certify that the particulars entered herein are correct.

Name and signature of
Competent Person
who witnessed the tests

Name and signature of
Inspecting Authority

Place _____
Date _____

Note: (1)In the case of valve chest made and tested by well known Foundries or Forges recognized by the Central Boilers Board in the manner as laid down in regulations 4A to 4H, particulars regarding the material as certified by them, in Form III-F / Form III-G & Form IV, shall be noted in the appropriate columns or paragraphs in the certificates and in case of certificates from Well Known Foundries or Forges is produced, such certificate may be accepted in lieu of the certificate from Inspecting Authority in so far as it relates to the testing of material specified in the Form.

(2) In case of safety valves, details and test results as required in item No.8 of Form-III shall also be furnished duly signed by manufacturer and inspecting authority.

(3) For Stock and sale purpose, one Form shall be issued for not more than fifty mountings and fittings.".

“FORM III-D (deleted)

&

FORM III-E (deleted)

"FORM III-F

(See regulations 73 to 80)

CERTIFICATE OF MANUFACTURE AND TEST OF CASTINGS

Certificate No. and date

Heat Number* and date of pouring

Maker's name and address …….

Customer's name and address ……

Drawing Nos. …….

Description and quantity_____Sl.No. _____

Foundry identification_____

Chemical composition

Heat treatment

Physical test results.

(i) Tensile strength

(ii) Transverse bend test

(iii) Elongation

(iv) Other tests

Certified that the particulars entered herein by us are correct. This satisfies the requirements of Indian Boiler Regulations, 1950.

Maker's Representative
(Name and signature)

Maker _____
(Name and Signature)

Name and signature of
Competent Person

Name and signature of
Inspecting Authority/Well Known foundry

*for castings of size more than 100mm Heat number must be as Cast.".

"FORM III-G

(See regulations 81 to 85)

CERTIFICATE OF MANUFACTURE AND TEST OF FORGINGS

Certificate No. and date

Heat Number

Details of raw material

Maker's name and address …….

Customer's name and address ……

Drawing Nos. …….

Description and quantity_____ Sl.No._____

Forge shop identification_____

Chemical composition

Heat treatment

Physical test results.

(i) Tensile strength

(ii) Transverse bend test

(iii) Elongation

(iv) Other tests

Certified that the particulars entered herein by us are correct. This satisfies the requirements of Indian Boiler Regulations, 1950.

Maker's Representative
(Name and signature)

Maker _____
(Name and Signature)

Name and signature of
Competent Person

Name and signature of
Inspecting Authority/Well Known Forge.".

"FORM III-H

(See regulation 4**)**

CERTIFICATE OF MANUFACTURE AND TEST FOR (HEADERS,DESUPERHEATERS/ATTEMPERATOR,BLOWDOWNTANK,FEEDWATERTANKS, ACCUMULATOR, DEAERATOR)

T.C.NO.: *DATE :*

Name of the Part :

Maker's Name & Address :

Customer's Name & Address :

Drawing No. :

Design Pressure (Kg/cm^2) :

Process of Manufacture, Material condition, chemical composition, Tensile Strength, Tolerances, Bend Test, Flattening Test etc. : *Refer enclosed Raw material Test Certificates or Form IV-A in lieu of Raw material Test Certificates*

Design Temp.(^oC) :

Heat Treatment :

Hydraulic Test Pressure :

Non-destructive Testing :

Inspecting Authority Identification Mark:

Item No.	PART NAME	MATERIAL SIZE	QUANTITY	MELT No.
01	PIPE			
02	END COVER			
03	STUBS			
04	BRANCH PIPES			
05				
06				

Certified that the particulars entered herein are correct.

The parts have been constructed to comply with the Indian Boiler Regulations for a working pressure of -- ------- and temperature of ----------and satisfactorily withstood a water test of -- on the -- day of -- in the presence of our responsible representative whose signature is appended hereunder.

Final Inspection Date :

Signature and Seal of Maker's Representative

Signature and Seal of Maker

Final Inspection Date :

We have satisfied ourselves that the…… have been constructed in accordance with Indian Boiler Regulations, 1950. The tests conducted have been witnessed by us, wherever applicable and the particulars entered herein are correct.

Name and Signature of
Competent Person

Name and Signature of
Inspecting Authority

Place :
Date :.

"FORM III- I

(See regulation 4)

CERTIFICATE OF MANUFACTURE AND TEST FOR DISHED ENDS / END COVERS

T.C.NO.: *DATE :*

Name of the Part :

Maker's Name & Address :

Customer's Name & Address :

Drawing No. :

Design Pressure (Kg./cm^2) :

Process of Manufacture, Material condition, chemical composition, Tensile Strength, Tolerances, Bend Test, Flattening Test etc. : *Refer enclosed Raw material Test Certificates or Form IV-A in lieu of Raw material Test Certificates*

Design Temp.(^{o}C) :

Heat Treatment :

Hydraulic Test Pressure :

Non-destructive Testing :

Inspecting Authority Identification Mark:

ITEM No.	PART NAME	MATERIAL SIZE	QUANTITY	SPECN.	MELT No./ PLATE NO.	TC NO & DATE
01	PLATE / FORGING					

Certified that the particulars entered herein are correct.

Signature and Seal of Maker's Representative

Signature and Seal of Maker

Final Inspection Date :

We have satisfied ourselves that the _____have been constructed in accordance with the Indian Boiler Regulations, 1950. The test conducted have been witnessed by us and the particulars entered herein are correct.

Name and Signature of Competent Pertson

Name and Signature of Inspecting Authority

Place :

Date :".

FORM IV

STEEL MAKER'S CERTIFICATE OF MANUFACTURE AND RESULTS OF TESTS

[Regulation 4(c)(iv) & 4(f)]

Designation of rolling mill ……

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 gothic bars/scalps, billets and hot rolled strips which are to be processed further by the same manufacturer for making tubes/pipes, the physical properties are not required to be mentioned by the steel manufacturer.

Signature or Initials
Test House Manager
Date

Date of tests …… 20……
Ordered by ……..
……
Boiler Number ……..

Order Number

RESULTS OF TESTS

Charge Number	*Brand & Number*	*Part of Boiler*	*Size of plate and bar*			*Number of pieces*	*Tensile breaking strength in tons per sq. in.*	*Elongation in inches*	*Bend Tests*	*Remarks*
			Length Ft. in.	*Breadth Ft. in.*	*Thickness or diameter in 32nds in.*					

Chemical analysis……

Note: Where the steel is manufactured by a maker, who is not recognised as a Well-known Steel Maker, the certificate of test shall be signed by the Inspecting Authority.

"FORM IV-A

[See regulation 4(c)(iv)]

CERTIFICATE OF MANUFACTURE AND RESULTS OF TESTS IN LIEU OF ORIGINAL TEST CERTIFICATES

It is hereby certified that original Test Certificate contain the following information in respect of the material used in the manufacture of the boiler or components thereof bearing Makers Number …… according to Drawing Number :

Boiler component	*Quantity*	*size*	*Cast/Heat No. Plate No.*	*Steel Making Process*	*Specification*
1	*2*	*3*	*4*	*5*	*6*

Name of Steel Maker/Part Maker	*Certificate No. & Date*	*Heat Treatment*
7	*8*	*9*

% Chemical Analysis CMnPSSi other alloying elements*	*Yield strength (Kg/mm^2)*	*U.T.S. (Kg/mm^2)*	*Elongation % Gauge Length*	*Bend Test*	*Name of the inspecting authority*
10	*11*	*12*	*13*	*14*	*15*

*(Carbon, Maganese, Phosphorus, Sulpher, Silicon).

Certified that the particulars entered herein by us are correct. This satisfies the requirements of Indian Boiler Regulations, 1950.

Maker's Representative
(Name and signature)

Maker _____
(Name and Signature)

Name and signature of
Competent Person

Name and signature of
Inspecting Authority".

Counter foil

No.

……

……

are hereby permitted to use the …… Boiler (Registry No. ……) Boiler Rating …… made by …… and bearing Maker's number …… at a maximum pressure of …… lbs. per square inch pending the issue of or refusal of a certificate within six months from the date thereof after which period this order will become void.

Date …… *Inspector of Boilers*

FORM V

[Regulation 381(c)]

PROVISIONAL ORDER UNDER SECTION 9 OF THE INDIAN BOILERS ACT OF 1923

…… are hereby permitted to use the …… Boiler (Registry No. ……) Boiler Rating …… made by …… and bearing Maker's number …… at a maximum pressure of …… lbs. per square inch pending the issue of or refusal of a certificate within six months from the date thereof after which period this order will become void.

Dated …… *Inspector of Boilers*

N.B.: This order must be produced on demand by any authorised person and surrendered to Chief Inspector on receipt of orders.

FORM VI

……Boiler Inspection Department

CERTIFICATE FOR USE OF A BOILER

(Regulation 389)

Registry Number of Boiler	Type of Boiler
Boiler Rating	Place and year of manufacture
Maximum Continuous Evaporation	
Name of Owner	
Situation of Boiler	
Repairs	
Remarks	
Hydraulically Tested on	to lbs. per sq. inch

I hereby certify that the above described boiler is permitted by me/the Chief Inspector under the provisions of Section 7/8 of the Indian Boilers Act, No. V of 1923, to be worked at a maximum pressure of …… lbs. to the square inch for the period from …… to ……

The loading of the …… safety valve is not to exceed ……
Fee Rs. …… paid on ……
Dated at …… this …… day of …… 20……

Competent Person
Countersigned
Chief Inspector
See Reverse for "Conditions"

CONDITIONS

(REVERSE OF FORM VI)

(1) No structural alteration, addition of renewal shall be made to the boiler otherwise than in accordance with section 12 of the Act.

(2) Under the provisions of Section 8 of the Act this certificate shall cease to be in force:

(a) on the expiry of the period for which it was granted; or

(b) when any accident occurs to the boiler; or

(c) when the boiler is moved the boiler not being vertical boiler the heating surface of which is less than two hundred square feet, or a portable or vehicular boiler; or

(d) save as provided in section 12 of the Act, when any structural alteration, addition or renewal is made in or to the boiler; or

(e) if the Chief Inspector in any particular case so directs when any structural alteration, addition or renewal is made in or to any steam-pipe attached to the boiler; or

(f) on the communication to the owner of the boiler of an order of the Chief

Inspector or Inspector prohibiting its use on the ground that it or any boiler component attached thereto is in a dangerous condition.

Under Section 10 of the Act, when the period of a certificate relating to a boiler has expired, the owner shall, provided that he has applied before the expiry of that period for a renewal of the certificate be entitled to use the boiler at the maximum pressure entered in the former certificate, pending the issue of orders on the application but this shall not be deemed to authorise the use of a boiler in any of the cases referred to in clauses (b), (c), (d), (e) and (f) of sub-section (1) of section 8 occurring after the expiry of the period of the certificate.
(3) The boiler shall not be used at a pressure greater than the pressure entered in the certificate as the maximum pressure nor with the safety valve set to a pressure exceeding such maximum pressure.
(4) The boiler shall not be used otherwise than in a condition which the owner reasonably believes to be compatible with safe working.

Note: The particulars and dimensions regarding this boiler may be obtained by the owner on payment in the prescribed manner on application to the Chief Inspector.

FORM VII

INSPECTING AUTHORITY'S CERTIFICATE OF INSPECTION UNDER CONSTRUCTION DESIGNATION OF INSPECTION AUTHORITY

[Regulation 501(e)]

We hereby certify that …… type, …… Economiser, consisting of …… sections and tubes to each section was constructed for a working pressure of …… lbs. Messrs …… under our supervision and inspected at various stages of construction by the Competent Person and that the construction and workmanship were satisfactory and in accordance with the standard conditions for the design and construction of Economiser laid down in Chapter XI of the Indian Boiler Regulations, 1950.

Identification Mark on each section.

Branch Pipe on other pressure part.

Position of same.

The sections on completion were subjected to a water pressure of …… lbs. per sq. in. for ten minutes in the presence of the Competent Person on …… and satisfactorily withstood the test in accordance with Reg. 504.

Samples of the material used in the constructions of the Economiser were tested in the presence of the Competent Person and were found to comply with the tests prescribed in Chapter XI of the Indian Boiler Regulations, 1950.

We have satisfied ourselves that the construction and dimensions of the Economiser are as shown in the Maker's Drawing No. …… signed by us and that the particulars entered in the maker's certificate of manufacture in Form VIII countersigned by us are correct to the best of our knowledge and belief.

Dated at …… this …… day of …… 20……

Signature of Inspecting Authority

FORM VIII

WORKS ADDRESS

Constructor's Certificate of Manufacture and Test

[Regulation 501(D)]

1.	Description	Type of Economiser No. of Sections Intended working pressure Year of manufacture Description	No. of tubes lbs. Total heating Surface of tubes
2.	Inspecting Authority	Economiser constructed under supervision of …….. Sections hydraulically tested for …… minutes and inspected after test by ……	
3.	Construction and Workmanship	Details are in Drawing No. …… All castings are well finished free from external defects, porous places and blow-holes and true to dimensions without warping. Where chapters are used, there is satisfactory fusion with the metal. Chapters properly tinned with metal free from lead. All screw threads are of Whitworth form. All components parts are manufactured to limit gauges to secure interchangeability throughout.	

		Parts	*Material*	*Maker*	*Inspecting Officer Remarks*
4.	Economisers and fittings				
	Particulars of material used	Headers Tubes and/or Pipes Valve Chest Bolt			

THICKNESS OF PARTS AND TENSILE TEST—LIMIT

		Thickness in 32nds	*Tensile strength limits to tons*	*Elongation limits to %*	*Gauge Length*	*Brand and No.*
5.	Part of Economiser					
	Headers					
	Tubes					
	Bolts					

Certified that the particulars entered herein are correct and that the parts and fittings mentioned above have been used in the construction and fittings of the Economiser.

The particulars shown against the various parts used are in accordance with the Maker's certificates in our possession.

The design of the economiser in section and end view with principal parts fully dimensioned is that shown in Drawing No. …… The Economiser has been designed and constructed to comply with the Indian Boiler Regulations for a working pressure of …… lbs. per sq. in. at our Works Regulations for a working pressure of …… lbs. per sq. in. at our Works above-mentioned and the sections satisfactorily withstood a water test of …… lbs. per sq. in. for …… minutes on …… day of ……20…… in the presence of our …….responsible representative whose signature is appended hereunder.

Signature of Engineer who witnessed the test *Designation of Maker*

Dated at …… this …… day of …… 20……

Signature of Inspecting Authority

Note: The drawing of the Economiser and Maker's certificate of manufacture showing results of tests for tensile strength and elongation must accompany this certificate and if the economiser has been built under the supervision of an Inspecting Authority their certificate in Form VII must accompany.

FORM IX

(Regulation 528)

INDIAN BOILERS ACT, 1923

BOILERS INSPECTION
DEPARTMENT
ECONOMISERS
REGISTRY NUMBER



MEMORANDUM OF INSPECTION
OR
REGISTRATION BOOK

MISCELLANEOUS

District ……..
Owners …….
Address of Factory …….

Nearest Railway Station ……

Economiser Registered at …….. on ……
Register Book No ……... Page ……...
Registry Number ……. Verified on ……..
Approved Working Pressure …….. lbs ……
Economiser Rating ……. Inspection fee ……
Registration Book filled at ……. on ……
Remarks on transfer etc. ……..
……

PROVISIONAL ORDER AND CERTIFICATE RECORD

Fee	*Date of payment*	*Date of Inspection*	*Certificate No. and Date*	*Period of Certificate*	*Working pressure*	*Economiser Rating*	*Remarks and Inspector's initial*

Type of Economiser ……..
Maker ……
Intended Working Pressure ……..
Place and year of make ……
Maker's No ……..
Description of Economiser ……

No. of tubes …… length …… Dia. ……
Thickness …… Thickness ……..
Internal dimensions ……..
No. of Headers ……
Thickness of Headers ……
Length of Top Branch Pipe ……...
Length of Bottom Branch Pipe …….
Dimensions of cap openings ……
Diameter of cap bolts …….

MOUNTINGS

No.	*Diameter*	*Type*	*Position*	*Material*

Relief Valve …….					
Stop Valve ……...					
Blow Down ……..					
Thermometers …….					
Pressure Gauge ……..					

Additional Fittings …….

MAKER'S CERTIFICATE

Name of Maker ……

……

Maker's Hydraulic Test Pressure ……

……

Maker's Drawing No. ……

……

Name of Inspecting Authority ……

……

Name of Maker of Material ……

……

Tubes ……

……..

Process

Headers ……..

Bolts ……

……..

	Test Results	
Tubes	T	E
Headers	T	E
Pipes	T	E
Bolts	T	
	% Sulphur	
	% Phosphorus	
	Maker's Identification Mark	
	Position	

CALCULATIONS

HEADERS

TUBES

BRANCH PIPES

BOLTS

HEATING SURFACE

Total Heating Surface ……

Economiser Ratings ……..

Calculations made by …… submitted on ……..

Calculations checked by …… on ……

Least pressure, that for ……. lbs. ……..

Approved working pressure …….. lbs. ……..

Chief Inspector's remarks and signature ……

INSPECTOR'S NOTES

Counterfoil	**FORM X** [Regulation 525(e)]
No. Name of the person or firm to which Provisional Order is granted. Description of Economiser Maker's No. Rating Pressure permitted Period Date *Inspector*	No. Provisional Order under the Indian Boilers Act, 1923 _____ are hereby permitted to use the Economiser Ry. No. …… and …… Economiser Rating …… made by …… and bearing Maker's No. …… at a maximum pressure of …… lbs. per sq. in/maximum temperature of …… °F pending the issue or refusal of a certificate within six months from the date thereof after which period this order will become void. Dated at …… this …… day of …… 19…… *Inspector*

FORM XI

……Boiler Inspection Department

CERTIFICATE FOR THE USE OF AN ECONOMISER

(Regulation 530)

Registry Number of Economiser	Type
No. of tubes	
Number of Headers	
Economiser Rating	Place and year of manufacture
Name of owner	
Situation of Economiser	
Repairs	
Remarks	
Hydraulically tested on	kg. per sq. cm. to lbs. per sq. in.

I/We hereby certify that the above described Economiser is permitted by me/Chief Inspector under the provisions of Section …… of the Indian Boilers Act, 1923 (V of 1923) to be worked at a maximum pressure …… lbs. per sq. in./maximum temperature of °F or the period from ……to ……

This loading of the safety valve is not exceed, …… lbs.
Fee Rs. …… paid on ……
Dated at ……
This …… day of …… 20……,

Countersigned *Competent Person* *Chief Inspector*

CONDITIONS

(REVERSE OF FORM XI)

(1) No structural alteration, addition or renewal shall be made to the Economiser without a written permission from the Chief Inspector.

(2) This certificate shall cease to be in force—

(a) on the expiry of the period for which it was granted, or

(b) when any accident occurs to the Economiser, or

(c) when any structural alteration, addition or renewal is made in or to the Economiser, or

(d) save as provided in section 12 of the Act, when any structural alteration, addition or renewal is made in or to the Economiser; or

(e) on the communication to the owner of the Economiser of an order of the Chief Inspector or Inspector prohibiting its use on the ground that it is in a dangerous conditions.

(3) The Economiser shall not be used at a pressure greater than the pressure/temperature entered in the certificate as maximum pressure/temperature not with the relief valve set to pressure/temperature exceeding such maximum pressure/temperature.
(4) The Economiser shall not be used otherwise than in a condition which the owner reasonably believes to be compatible with safe working.

N.B. : Details regarding this Economiser are recorded in a Registration Book No. ..... of which a copy may be obtained on payment on application to the Chief Inspector.

FORM XII

(Regulation 613)

Record of Welder's Qualifications/Requalifications Tests (Indian Boiler Regulations, 1950)

Place of Test ……
Date ……...

Name of Welder ……
Father's name ……
Date of Birth ……..
Address ……..
..……
…
Service of experience on Gas/Electric Arc …… years……....
Signature of Welder ……..……
Names and addresses of the firms where trained ……...
..……
…
Tested on ……..... (Plate, pipe, tube)
Gas of electric A.C./D.C. ……..……
Kind of test ……..…… (Groove/Gillet/Branch)
Position
..…….
Thickness of material used ……..
Diameter and thickness of pipe, branch or tubes used …….
Quality of base material and electrode or filler rod ……..

RESULTS OF OBSERVATIONS

	Marks	
	Maximum	*Awarded*
A. Procedure		
1. Preparation of specimen	3	
2. Size & Grade of electrode or filler rod	2	
3. Number of runs and manipulation of control	5	
B. Visual Inspection		
4. Root penetration	10	
5. Freedom from undercut	5	
6. Disposition of runs	2	
7. Uniformity of surface	1	
8. Shape of profile	1	
9. Smoothness of joints	2	
10. Freedom from cavities & slags	5	
11. Dimensions of weld deposit	1	

12. Quality of weld metal (Overheating, surface cracks, spongy surface etc.)	3
C. Physical Test	
13. Face bend test	10
14. Root bend test	20
D. Etch Test	
15. Disposition of runs	2
16. Degree of fusion	5
17. Root Penetration	11
18. Slags inclusions and porosity	5
E. Fractured Surface	
19. Quality of weld metal (Excessive oxidation, carburisation, overheating, roughness, porosity, appearance).	7
	100

Signature of Competent Authority

Observation on radiographic examination (if conducted)

……...

Marks awarded ……. %

Results of Oral or Written examination ……
Marks awarded ……. %
GENERAL REMARKS OF COMPETENT AUTHORITY ……
TYPE AND CLASS OF WELDING QUALIFIED …… in Gas or Electric Arc welding.
PERIOD OF VALIDITY OF CERTIFICATE …… From …… To ……
Place ……
Date ……. *Competent Authority*

FORM XIII

QUALIFIED BOILER WELDER'S CERTIFICATE ISSUED UNDER THE INDIAN BOILER REGULATIONS, 1950

PHOTO Passport Size	(SEAL) and Signature of Competent Authority	Name of Welder …….. Father's Name …….. Date of Birth …… Identification marks …… Left Hand Thumb Impression …….. Signature of Welder …….. Address of Welder …….

Period of Validity

From	To
……	……
……	……
……	……
……	……

This is to certify that Shri …… son of Shri …… has been examined and tested in the prescribed manner in the presence of …… (Representative of Competent Authority) and is deemed to have satisfactorily proved his ability to make sound welds as per particulars given below and is hereby authorised to undertake such welds. He is authorised/not authorised to undertake welding where radiographic examination is necessary under the Regulations.

Granted this …… day of …… 20…… under the seal and authority of ……..

SEAL

Representative of Competent Authority

*Particulars :—

*Particulars shall contain information on the following:

Tested on Plate/Pipe/Tube with position

Date	
Material	Mild Steel or alloy steel
Process	
Class of welding	
Backing strip	
Electrode	Class (Carbon or alloy steel)
Filter rod	Type
Test piece X-rayed or not.	
Period of Validity	

From	To
……	……
……	……
……	……
……	……

EMPLOYMENT PARTICULARS

From	*To*	*Name of employer*	*Work on which engaged*	*Signature of employer*

(COVER PAGE)

FORM XIV

[Regulation 394(C)]

INDIAN BOILERS ACT, 1923

Boiler Inspection Department
Steam Pipes and Connected Fittings
Identification Number

Memorandum of Inspection Book

MISCELLANEOUS

District
……
Owner ……
Address ……..
Work of Factory : ……..
Registration Number of Boilers to which the pipes and fittings, particulars of which are given in this Memorandum are connected.
Remarks

Date	*Particulars of additions & alterations*
……	…….
……	…….
……	…….
……	…….

PLAN OF STEAM PIPES & THEIR CONNECTED FITTINGS

FEE AND APPROVAL TO PLAN RECORD

Drawing No.	*Total length of Steam Pipes*	*No. of Connected vessels*	*Fee*	*Date of Payment*	*No. & date of approval of Plan & Layout*	*W.P. approval Kg/cm²*	*Temp allowed °C*	*Remarks & initial of Inspector*

STEAM PIPES—PARTICULARS AND DIMENSIONS

Situation ……..
Ry. No. of connected Boilers ……..
Steam Piping System include ……
Pipes Material …… Diameter (outside) ……..
Pipes Thickness …… Make ……
Attachment of Flanges ……..
Elbows, Tees etc. ……..
……..
.
Support
……
Flexibility
……
Drainage ……..
Feed pipes
……

Outside Dia. …… Thickness
……..

Make
……
Max. Pressure …… Max. Temp ……..
Connected Vessel ……
No.
……...
Type
……..
Max. Design Press …… Max. Design Temp. ……...
Date of Installation ……
First Inspection inside & ……..
Outside
……
Feed Pipes Hydraulic Test to …… kg/cm² …… By …… on
……..
Remarks ……..

CALCULATIONS

Steam Pipes :
……
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CALCULATIONS

Steam Pipes :

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CALCULATIONS

Steam Pipes :

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CALCULATIONS

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INSPECTOR’S NOTE

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"**FORM XV-A**

[See regulation 4 A (2)]

QUESTIONNAIRE TO BE ANSWERED BY FIRMS/COMPANIES SEEKING RECOGNITION BY THE CENTRAL BOILERS BOARD TO BECOME AN "INSPECTING AUTHORITY"

1. The registered name and address of the company/firm:

2. Address for correspondence:

3. The year in which the company/firm was established.

4. Proposed countries/areas of operation as Inspecting Authority:

5. Is company/firm registered in the proposed countries of operations?

   If so, please give details thereof.

6. Have you any Branch or Associate Office?

   If so, please give their names and addresses.

7. Is company/firm functioning as an Inspecting Authority under the Indian or International codes and standards?

   If so, details thereof.

8. In case of renewal of recognition as Inspecting Authority under the Indian Boiler Regulations, 1950, had you conducted inspection during the last five years?

   If yes, details thereof.

9. Is company/firm involved in any commercial activity other than inspection, certification and related activities under the Indian or International Codes and standards?

   If so, details thereof.

10. Please state the types, size and the range of working pressure of the boilers which you have so far inspected during manufacture as an Inspecting Authority, also state the classes of service you render, namely:-

    (a) Please name the various stages of manufacture at which inspections are carried out.

    (b) Only hydraulic test after the manufacture of the boiler.

11. How many Inspectors/Competent persons have you in your employment? Please give details of the qualifications held by those persons.

12. Have you any Testing Laboratory of your own to conduct all destructive and non-destructive tests required in connection with the manufacture of boilers?

    If so, details thereof.

13. Have you in-house design and drawing inspection office?

    If so, details thereof.

14. Have you any documented quality programme established and maintained to fulfill the inspection requirements as per Indian Boiler Regulations, 1950?

    If so, details thereof.

15. Are you having Curriculum Vitae of all the inspectors/competent persons employed in the organization for inspection and certification work?

16. Are you having a training programme for Inspectors/Competent persons?

    If so, details thereof.

17. Are you prepared to conduct the work of Inspection of boilers, economisers and their accessories strictly in conformity with the Indian Boiler Regulations, 1950?

18. Are you prepared to accept full responsibility for the certificate issued by you?

19. Has your request for recognition as an Inspecting Authority been rejected by any Authority? If so, please give details.

20. Are you prepared to issue certificates for the products, you inspect, in the formats of the Indian Boiler Regulations?

21. Are you aware that the recognition is for a period of five years only, which is renewable after every five years on fresh assessment?

SIGNATURE & SEAL

FORM XV-B

[See regulation 4 A (2)]

QUESTIONNAIRE FOR ELICITING INFORMATION REGARDING THE COMPETENCY OF A FIRM/COMPANY TO BE RECOGNISED AS "COMPETENT AUTHORITY"

1. Registered name and address of the company/firm.
2. Address for correspondence.
3. Year in which the company/firm was established.
4. Address of branch or associate office, if any.
5. Principal work of the company/firm.
6. Does the company/firm have any training section for the welders? If so, details of the scheme to be stated.
7. Does the company/firm regularly conduct tests on welds done by its welders? If so, the code followed and the details of tests carried out may please be stated.
8. What are the facilities that can be provided or availed of by the organisation for conducting the tests?
9. Is the company/firm prepared to undertake testing of welders employed by other organisation?
10. In case of renewal of recognition as Competent Authority under the Indian Boiler Regulations, 1950, have you undertaken inspection and certification of welders during the last five years?

    If yes, details thereof.

11. Whether the company/firm is prepared to conduct tests as per requirements of the Indian Boiler Regulations, 1950?

12. The amount of fee which the company/firm would charge from a candidate for conducting a test for the issue of certificate. Estimates under the following heads may be given:

    (a) For the supply of tests pieces, electrodes and/or filler rods:

    (b) For the use of welding machine:

    (c) For machining the test pieces and preparation of specimen:

    (d) For conducting mechanical tests (including specimen preparation):

    (e) For non-destructive testing:

13. Is the company/firm prepared to examine and issue certificate to welders in accordance with the requirements of the Indian Boiler Regulations, 1950?

14. Is the company/firm prepared to take full responsibility for certificates issued by it.

15. Are you aware that the recognition is for a period of five years only which is renewable after every five years on fresh assessment?

SIGNATURE & SEAL

FORM XV-C

[See regulation 4A (2)]

QUESTIONNAIRE TO BE ANSWERED BY STEEL MAKER SEEKING RECOGNITION BY CENTRAL BOILERS BOARD TO BE NOTIFIED AS "WELL KNOWN STEEL MAKERS"

1. Registered Name and address of the firm/company:
2. Works address:
3. The year in which the factory was established:
4. Capacity for production of steel:
5. Process of manufacture of steel:
6. Variety of steel products:
7. Range of steel produced in each variety:
8. Various national and international Standards to which the steel products are manufactured:
9. Testing facilities available within the works:
10. Types of tests conducted:
11. If so, by whom conducted:
12. Are the tests conducted by the firm/company acceptable to the other organisations of the country? If so, by whom?
13. Is the firm/company prepared to conduct tests in accordance with the Indian Boiler Regulations, 1950?
14. Is the firm/company recognised as "Well Known Steel Maker" in any other country?
15. Whether the firm/company has any previous experience to produce steel in accordance with the provision of Indian Boiler Regulations, 1950 under the inspection of any recognised Inspecting Authority.

    If yes, details thereof.

16. Whether the firm/company is prepared to furnish certificates under the provision of Indian Boiler Regulations, 1950.

17. In case of renewal of recognition, had you manufactured and supplied steel as "Well Known Steel Maker" under the Indian Boiler Regulations, 1950 during the last five years?

    If yes, details thereof.

18. Whether the firm/company manufacture steel from the ore itself or from ore and scrap or scrap only:

19. Whether the firm is agreeable to show their manufacturing process and in-house testing facilities to a team consisting of three members appointed by the Board.

20. Are you aware that the recognition is for a period of five years only which is renewable after every five years on fresh assessment?

SIGNATURE & SEAL

FORM XV-D

[See regulation 4A (2)]

QUESTIONNAIRE TO BE ANSWERED BY FOUNDRY/FORGE SEEKING RECOGNITION BY CENTRAL BOILERS BOARD TO BE NOTIFIED AS "WELL KNOWN FOUNDRY/FORGE"

1. The registered name and address of the firm/company:
2. Works address:
3. The year in which the factory was established:
4. Capacity of the foundry/forge:
5. (i) Capacity for production of forgings/castings:

   (ii) Maximum weight and size of forgings/castings:
6. Detailed description of the type of job done by the firm/company:
7. Materials of castings/forgings (ferrous-plain or alloy steel, non-ferrous alloys):
8. Range of forgings/casting produced in each variety:
9. Testing facilities available within the works:
10. Details of testing facility, namely chemical and physical tests:
11. Types of test conducted:
12. If so, by whom conducted?
13. Are the tests conducted by the firm/company itself acceptable to the other organisations of the country? If so by whom?
14. Is the firm/company prepared to conduct tests in accordance with the Indian Boiler Regulations, 1950?
15. Is the firm/company recognised as "Well Known Foundry/Forge" in any other country?

16. Whether the firm/company is in a position to produce forgings/casting in accordance with any national/international specifications fulfilling the minimum requirements of Indian Boiler Regulations, 1950:

17. Whether the firm/company has any previous experience to produce forgings/castings in accordance with the provision of Indian Boiler Regulations, 1950 under the inspection of any recognised Inspecting Authority.

If yes, details thereof.

18. Whether the firm/company is prepared to furnish certificates under the provision of Indian Boiler Regulations, 1950.

19. In case of renewal of recognition, had you manufactured and supplied castings/forgings as "Well Known Foundry/Forge" under the Indian Boiler Regulations, 1950 during the last five years?

If yes, details thereof.

20. Whether the firm/company is agreeable to show their process of manufacture, in-house testing facilities to a team of members appointed by Central Boilers Board.

21. Are you aware that the recognition is for a period of five years only, which is renewable after every five years on fresh assessment?

SIGNATURE & SEAL

FORM XV-E
[See regulation 4A (2)]

QUESTIONNAIRE TO BE ANSWERED BY TUBE/PIPE MAKER SEEKING RECOGNITION BY CENTRAL BOILERS BOARD AS "WELL KNOWN TUBE/PIPE MAKER"

1. Registered name and address of the firm/company:
2. Works address:
3. The year in which the factory was established:
4. Capacity of production of Tube/Pipe and the tonnage details per during the last three years:
5. Steel grades of Tube/Pipes under production:
6. Size range of Tubes/Pipes under production:
7. Process of manufacture of Tube/Pipes:
8. (a) Whether the firm/company is producing the raw material or purchasing the raw material.

   (b) If the raw material is purchased, give the details of purchase in last three years.

   (i) from well known steel makers under Indian Boiler Regulations, 1950.
   (ii) from other sources.

9. If purchase is as per 8(b)(ii), state whether the raw material is tested at Tube maker's/Pipe maker's premises under Indian Boiler Regulations, 1950.
10. If the firm/company is producing raw material, state whether the firm/company is recognised as Well Known steel maker under Indian Boiler Regulations, 1950.
11. Major manufacturing facilities available with the firm/company:
12. Testing facilities available with the works:
13. Types of tests conducted on Tubes/Pipes (enclose complete quality control plan from raw material stage to finished stage along with the quality control and inspection personnel of the firm):

14. The details of failures and rejection

    (a) By Non-Destructive Testing(NDT)

    (b) By Destructive Testing.

15. Whether the firm/company is in a position to manufacture Tubes/Pipes and also provide for their necessary testing facilities in accordance with the provision in Indian Boiler Regulations, 1950.

16. Whether the firm/company has any previous experience to produce Tubes/ Pipes in accordance with the provision of Indian Boiler Regulations, 1950 under the inspection of any recognised Inspecting Authority.

    If yes, details thereof.

17. Whether the firm/company is prepared to furnish certificates under the provision of Indian Boiler Regulations, 1950.

18. In case of renewal of recognition, had you manufactured and supplied Tubes/ Pipes as "Well Known Tubes/Pipes Maker" under the Indian Boiler Regulations, 1950 during the last five years?

    If yes, details thereof.

19. The name of the firms to whom the firm /company has supplied Tubes/Pipes:

20. Whether the firm/company is agreeable to show their manufacturing process and in- house facilities to a team consisting of three members appointed by the Board.

21. Whether the firm/ company is aware of the fact that the recognition is for a period of five years only, which is renewable after every five years term on fresh assessment?

SIGNATURE & SEAL

FORM XV-F
[See regulation 4A (2)]

QUESTIONNAIRE TO BE ANSWERED BY A LABORATORY SEEKING RECOGNITION BY CENTRAL BOILERS BOARD AS A "WELL-KNOWN MATERIAL TESTING LABORATORY"

1. The registered name and address of the laboratory:

2. Address of the laboratory:

3. The year in which the laboratory was established:

4. (a) Whether the laboratory is recognised by the Central Government or by a State Government:

   (b) If so, please furnish particulars of recognition:

5. Name and address of branch or associate laboratory, if any:

6. How long the laboratory has been functioning for testing of the products?

7. Equipment or machines available in the laboratory for carrying out the non-destructive or destructive testing:

8. Type and range of tests carried out by the laboratory:

9. Details of testing personnel and their qualifications or experience:

10. Are you prepared to conduct the testing of specimens strictly as per the requirements of the Indian Boiler Regulations, 1950?

11. Has your request for recognition as an approved laboratory been rejected by any authority? If so, please give details.

12. Are you prepared to issue the certificates for the products you test in the formats of the Indian Boiler Regulations, 1950?

13. Whether you have any previous experience of conducting tests in accordance with the provision of Indian Boiler Regulations, 1950 under the inspection of any recognised Inspecting Authority.

    If yes, details thereof.

14. In case of renewal of recognition, had you conducted tests under the provisions of Indian Boiler Regulations, 1950 during the last five years?

    If yes, details thereof.

15. Are you agreeable to show your laboratory and in- house facilities to a team consisting of three members appointed by the Board?

16. Are you aware that the recognition is valid for a period of five years only, which is renewable for five years on fresh assessment?.

SIGNATURE & SEAL

FORM XV-G

[See regulation 4A (2)]

QUESTIONNAIRE TO BE ANSWERED BY A FIRM SEEKING RECOGNITION BY CENTRAL BOILERS BOARD AS "REMNANT LIFE ASSESSMENT ORGANISTION" UNDER REGULATION 391A

1. The registered name and address of the firm/company :

2. Address of the firm /company :

3. The year in which the firm /company was established :

4. (a) Whether the firm/company is recognised by the Central Government or by State Government :

   (b) If so, furnish particulars of recognition :

5. Name and address of branch or associate firm, if any :

6. How long your firm has been functioning for Remnant Life Assessment of Boilers and Boiler Parts :

7. Equipment or machines available in the laboratory for carrying out the non-destructive or destructive testing :

8. Type and range of tests carried out by the firm/company:

9. Details of testing personnel and their qualifications and experience :

10. Are you prepared to conduct the testing of specimens strictly as per the requirements of the Indian Boiler Regulations, 1950? :

11. Has your request for recognition as an approved organisation been rejected by any authority? If so, please give details. :

12. Are you prepared to issue the certificates for the tests recommended in the formats of the Indian Boiler Regulations, 1950?

13. In case of renewal of recognition, had you conducted Remnant Life Assessment of Boilers and Boiler parts under the Indian Boiler Regulations, 1950 during the last five years? If yes, details thereof.

14. Are you agreeable to show your laboratory and in-house facilities to a team consisting of three members appointed by the Board?

15. Are you aware that the recognition is valid for a period of five years only, which is renewable for five years on fresh assessment.

SIGNATURE & SEAL".

"**FORM XVI-A**

[See regulation 4C (2)]

National Emblem

Serial No. File No.

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR INSPECTING AUTHORITY

This is to certify that the Inspection and Quality Management System of:

M/s _____

_____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C(2) of the Indian Boiler Regulations, 1950, as an INSPECTING AUTHORITY for operation in

_____

This certificate is valid for five years, i.e. upto……..

_____

Validity is subject to the adherence to the quality Control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-B

[See regulation 4C (2)]

National Emblem

Serial No. File No.

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR COMPETENT AUTHORITY

This is to certify that the Examination of Welder System of:

M/s _____

_____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C(2) of the Indian Boiler Regulations, 1950, as a COMPETENT AUTHORITY for operation in

_____ _____

This certificate is valid for five years, i.e. upto……..

_____

Validity is subject to the adherence to the quality Control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-C

[See regulation 4C (2)]

National Emblem

Serial No. File No.

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR WELL-KNOWN STEEL MAKER

This is to certify that the Inspection and Quality Management System of:

M/s _____

_____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C(2) of the Indian Boiler Regulations, 1950, as WELL KNOWN STEEL MAKER, for the manufacture of _____

_____

for their factory at_____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-D

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR WELL-KNOWN FOUNDRY

This is to certify that the Inspection and Quality Management System of:

M/s. _____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C (2) of the Indian Boiler Regulations, 1950 as a WELL KNOWN FOUNDRY for the manufacture of

_____

for their factory at_____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-E

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR WELL KNOWN FORGE

This is to certify that the Inspection and Quality Management System of:

M/s _____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C (2) of the Indian Boiler Regulations, 1950 as a WELL KNOWN FORGE for the manufacture of

_____

for their factory at_____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations,1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-F

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR WELL KNOWN TUBE MAKER

This is to certify that the Inspection and Quality Management System of:

M/s _____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C(2) of the Indian Boiler Regulations, 1950, as a WELL KNOWN TUBE MAKER for the manufacture of Tubes of Sizes from _____ to _____

_____

for their factory at_____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-G

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL FOR WELL KNOWN PIPE MAKER

This is to certify that the Inspection and Quality Management System of:

M/s _____

_____

_____

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C(2) of the Indian Boiler Regulations, 1950, as a WELL KNOWN PIPE MAKER for the manufacture of pipe of sizes from _____ to _____

_____

for their factory at_____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-H

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL AS WELL-KNOWN MATERIAL TESTING LABORATORY

This is to certify that after evaluation of the inspection and material testing system of the following laboratory, the Central Boilers Board has granted recognition to it under sub-regulation (2) of regulation 4C of the Indian Boiler Regulations, 1950, as a Well-known Material Testing Laboratory.

M/s _____

_____

_____

_____

This certificate is valid for five years, i.e. upto_____

_____

Note:- The recognition will be as per the standards specified under the provisions of the Indian Boiler Regulations, 1950.

_____

Date of Issue

Certificate No._____

_____

Secretary

FORM XVI-I

[See regulation 4C (2)]

National Emblem

Serial No. File No

CENTRAL BOILERS BOARD

CERTIFICATE OF APPROVAL AS WELL KNOWN REMNANT LIFE ASSESSMENT ORGANISATION

This is to certify that after evaluation of the inspection and material testing system of the following firm, the Central Boilers Board has granted recognition to it under sub-regulation (2) of regulation 4C of the Indian Boiler Regulations, 1950 as a Well Known Remnant Life Assessment Organisation.

M/s._____
_____
_____
_____

This certificate is valid for five years, i.e. upto_____

_____

Date of Issue

Certificate No._____

_____

Secretary".

FORM XVII

CERTIFICATE OF MANUFACTURE AND TEST FOR CERTIFICATE OF MANUFACTURE AND TEST FOR SMALL INDUSTRIAL BOILERS INCLUDING SMALL INDUSTRIAL SOLAR BOILERS

(Manufactured Under Chapter XIV)

1. Maker's Name …… Year of Make …….

2. Manufactured for ……..
3. Location of Installation ……..
4. Boiler Identification …… Competent Person's stamp ……
5. Drawing No. …… Alteration No. ……
5A. Design Code …… Working Pressure (kg/Cm^2) ……
6. Size of Boiler

Length (Meters)	*Width (Meters)*	*Height (Metres)*	*Diameter (Metres)*

7. Shell/Furnace/Tube Plates/Flange Details

Material Specification	CHEMICAL COMPOSITION					MECHANICAL PROPERTIES				
	C	*Si*	*Mn*	*P*	*S*	*Y*	*S*	*U.T.S.*	*%*	*EL.*
Shell ……..										
Furnance ……..										
Tube Plates ……..										
Flange ……..										
Boiler Tubes/Pipe/Pads Details ……										

Diameter Thickness Material Specification	CHEMICAL COMPOSITION					MECHANICAL PROPERTIES				
	C	*Si*	*Mn*	*P*	*S*	*Y*	*S*	*U.T.S.*	*%*	*EL.*
Tube ……										
Pipes ……..										
Pads ……										

8. Volumetric Capacity

9. Heating Surface (Sq. Metres)

10. Nozzle connection

(a) Steam Outlet ……
(No. Size and Type of Nozzles)

(b) Safety Valve ……..
(No. Size and Type of Nozzles)

(c) Auxiliary (Air vent) ……..
(No. Size and Type of Nozzles)

(d) Blowoff Valve ……
(No. Size and Type of Nozzles)

(e) Feed Valve ……
(No. Size and Type of Nozzles)

11. Shop Hydro Test Pressure (Kg. Cm^2) …… Date ……..

Signature of Manufacturer

We certify that the above boiler constructed under our supervision and inspected at various stages of construction by the Competent Person and that the construction, workmanship were satisfactory as per Indian Boiler Regulations.

Inspecting Officer *Signature of Inspecting Authority*

Dated …… this …… Day of …… 20……

"FORM XVIII

[See regulation 392(4)]

QUESTIONNAIRE FORM FOR REPAIRER OF BOILERS/ECONOMISER/STEAM LINE/FEED WATER LINES

1. (a) Registered name of the firm and its permanent address……

   (b) Address of the workshop:

2. Year of establishment ……..

3. Classification applied for—

   (a) Special Class (For any Boiler Pressure)

   (b) Class I (For Boiler Pressure upto 125 kg.cm^2)

   (c) Class II (For Boiler Pressure upto 40 kg./cm^2)

   (d) Class III (For Boiler Pressure upto 17.5 kg/cm^2)

4. Type of jobs executed by the firm earlier, with special reference to their maximum working pressure, temperature and the materials involved, with documentary evidence ……

5. (a) Whether the firm has ever been approved by any Boilers' Directorate/Inspectorate? If so, give details……

   (b) Has your request for recognition as a repairer under Indian Boiler Regulations, 1950 been rejected by any Authority? If so, please give details…….. ……..

6. Whether having rectifier/generator, grinder, general tools and tackles, dye penetrant kit, expander and measuring instruments or any other tools and tackles under regulation 392(5)(i). ……

7. Detailed list of technical personnel with designation, educational qualifications and relevant experience (attach copies of documents) who are permanently employed with the firm ……

8. How many working sites can be handled by the firm simultaneously?……..

9. Whether the firm is prepared to execute the job strictly in

conformity with the regulations and maintain a high standard of work?……

10. Whether the firm is prepared to accept full responsibility for the work done and is prepared to clarify any controversial issue, if required?……

11. Whether the firm is in a position to supply materials to required specification with proper test certificates if asked for? ……

12. Whether the firm has an internal quality control system of their own? If so, give details……

13. List of welders employed with copies of current certificate issued by a Competent Authority under the Indian Boiler Regulations, 1950.

……

Date ……
Place ……

Name & Signature of the authorised signatory of the firm with stamp

Note 1: The recognition of the firm as a repairer shall be for a period of two years, thereafter they shall apply for renewal of their recognition at least two months before the expiry of the said period.

Note 2: In case the repairer is found violating the provisions of the Act or Regulations knowingly or unknowingly, the firm shall be blacklisted under intimation to Chief Inspectors or Directors of Boilers of all the States/Union territories and renewal shall not be done in any case.".

"FORM XIX

[See regulation 376(ff) and 376(fff)]

DETAILS TO BE FURNISHED ALONGWITH APPLICATION FOR INSPECTION OF BOILER AFTER TWELVE/TWENTY FOUR MONTHS OF THE CERTIFICATION UNDER REGULATION 390 AS PER APPENDIX 'JA' AND APPENDIX 'JB'

1. Name and address of the owner ……
2. Registry number of the boiler ……
3. Steam pressure and temperature ……
4. Rate of steam generation……
5. Heating surface ……
6. Year of make ……
7. Brief description of boiler ……
8. Type of construction (Whether riveted or welded) ……
9. Whether fired or waste heat boiler ……
10. Date of registration……
11. Details of past exemption granted by the Government, if any ……
12. Date of last annual inspection ……
13. Expiry date of current certificate ……
14. Working pressure at which last certificate was issued ……
15. Details of past repairs (year-wise) ……
16. Remark as entered in the last certificate ……
17. Quality of boiler feed water ……
18. Whether requisite number of feed pumps are in satisfactory working condition at present?……
19. Number of safety valves mounted on shell/drum and super heater……..
20. Total number of soot blowers provided in boiler ……

21. Number of soot blowers in working condition ……

22. Whether safety valves are blowing satisfactorily at or below design pressure?……

23. Whether safety valve assembly is free from jamming as verified by operating casing lever?……

24. Whether high and low water level alarm is in good condition? ……

25. Whether main steam stop valves, feed check valves, blow down valves and master pressure gauge in working condition? ……

26. Whether additional requirements for automatic boilers as per regulation 281A are complied with? (If 'No', give details) ……

27. Last date of calibration for master pressure gauge, temperature indicator/recorder for superheater, hot reheat, cold reheat and main steam line.……

28. (a) Last date when boiler protection devices were satisfactorily tested and details thereof ……..

    (b) Last date when boiler protection devices were tested by simulation**……**

29. Details of boiler stoppages in last twelve months with reasons and remedies thereof. ……

30. Present irregularities in instruments and controls if any observed in control-room of boiler house.……

31. Details of present boiler leakage. ……

32. Present operating pressure of the boiler ……

33. Whether water quality is tested on-line (enclose copy of test report showing values of analysis including Total Dissolved Solids(TDS) ……

34. State at what intervals such test is carried out ……

35. When boiler was last opened for internal and/or external cleaning? ……

36. State at what intervals such cleaning is carried out.……

37. Whether there was any shut down since last inspection when the boiler could have been offered for inspection?……

38. Whether working pressure of the boiler ever exceeded in the past beyond certified limit? If any, give details……

39. Details of boiler accident which took place in the past, if any ……

40. List of Boiler Operation Engineers/Attendants ……

41. Irregularities, if any, noticed in the past in compliance of the Act. ……

42. Whether guidelines laid down by Central Boilers Board for granting exemption to the waste heat boilers are fulfilled or not? ……

General Manager (Generation)

Remarks of the Competent Person who verified correctness of above statement paying check visit to the Boiler House.

Competent Person".