

**FACTORIES ORDINANCE (CAP. 169)**

**Steam and Hot Water Boilers Regulations, 1976**<sup>1</sup>

In exercise of the powers conferred by section 3 of the Factories Ordinance, the Minister of Labour, Employment and Welfare has made the following regulations:-

1. (1) These regulations may be cited as the Steam and Hot Water Boilers Regulations, 1976.
- (2) These regulations shall come into force after twenty-one days in which they are laid before the House of Representatives in accordance with the provisions of subsection (3) of section 3 of the Factories Ordinance, which date shall be notified by the Minister by notice in the Gazette.

**PART I**

**General**

2. In these regulations, unless the context otherwise requires-

"Director" means the Director of Labour and Emigration;

"factory" has the same meaning as is assigned to it in the Ordinance;

"hot water boiler" means a vessel for operation of pressures or temperatures not exceeding saturation condition;

"maximum permissible working pressure" means that specified in the certificate referred to in regulation 11 or in regulation 15 of these regulations, as the case may be, and, where such a certificate is not available, or in the case of a boiler which is not new, that specified in the report relative to the last examination thereof carried out in accordance with the provisions of these regulations;

"Minister" means the Minister responsible for labour;

"Ordinance" means the Factories Ordinance;

"person responsible" means the person responsible in accordance with section 6 of the Ordinance;

<sup>1</sup>

This is the text of the Steam and Hot Water Boilers Regulations, 1976, which are being republished in this format for the convenience of readers and are not to be regarded as the official text thereof. The text includes all amendments to date, if any.

1 L.N. 34 of 1976.

"steam boiler" means a closed vessel in which for any purpose steam is generated under pressure greater than atmospheric pressure, and includes any economiser used to heat water fed to any such vessel, and any superheater used for heating steam.

**PART II**

**Steam Boilers**

3. Every steam boiler, whether separate or one of a range, -

(a) shall have attached to it -

(i) a suitable safety-valve separate from any stop-valve, which shall be so adjusted as to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure and shall be fixed directly to, or as close as practicable to, the boiler;

(ii) a suitable stop-valve connecting the boiler to the steam pipe;

(iii) a correct steam pressure gauge, connected to the steam space and easily visible by the boiler attendant, which shall indicate the pressure of steam in the boiler in Kilo-newton per square metre, or in bars, and have marked upon it in a distinctive colour the maximum permissible working pressure;

(iv) at least one water gauge of transparent material, or of other type of material approved by the Director, to show the water level in the boiler, and, if the gauge is of the glass tubular type and the working pressure in the boiler normally exceeds 275.80 Kilonewton per square metre or

2.758 bars, the gauge shall be provided with an efficient guard but not so as to obstruct the reading of the gauge; and

- (v) where it is one of two or more boilers, a plate bearing a distinctive number which shall be easily visible;
- (b) shall be provided with means for attaching a test pressure gauge; and
- (c) unless externally fired, shall be provided with a suitable fusible plug or an efficient low-water alarm device:

Provided that sub-paragraph (ii) of paragraph (a) of this regulation shall not apply with respect to economisers, and sub-paragraphs (iii), (iv) and (v) of paragraph (a), and paragraphs (b) and (c) of this regulation shall not apply with respect to either economisers or superheaters.

4. For the purposes of the immediately preceding regulation, a lever-valve shall not be deemed a suitable safety-valve unless the weight is secured on the lever in the correct position.  
2 L.N. 34 of 1976.

5. (1) No person shall enter or be in any steam boiler which is one of a range of two or more steam boilers unless -

- (a) all inlets through which steam or hot water, might otherwise enter the boiler from any other part of the range are disconnected from that part; or
- (b) all valves or taps controlling such entry are closed and securely locked, and, where the boiler has a blow-off pipe in common with one or more other boilers or delivering into a common blow-off vessel or sump, the blow-off valve or tap on each such boiler is so constructed that it can only be opened by a key which cannot be removed until the valve or tap is closed and is the only key in use for that set of blow-off valves or taps.

(2) Persons working inside steam boilers shall not use electric lights the voltage of which is over fifty volts or any other system of lighting which involves the use inside the boiler of paraffin or other dangerous fuel the use of which is prohibited by the Director.

6. Every part of every steam boiler shall be of good construction, sound material, adequate strength, and free from patent defect.

7. (1) Every steam boiler and all its fittings and attachments shall be properly maintained.

(2) The furnace or furnaces shall be so used as not to cause any undue strain on the steam boiler.

8. (1) Every steam boiler and all its fittings and attachments shall be thoroughly examined, at least once in every period of twelve months as well as after any extensive repairs have been effected thereto, by a competent person appointed by the Minister to be an Examiner of Steam and Hot Water Boilers for the purposes of these regulations.

(2) Any extensive repairs that are to be made in a steam boiler and/or in its fittings and attachments shall be carried out under the supervision of an Examiner of Steam and Hot Water Boilers.

9. (1) Any examination required under the immediately preceding regulation shall be carried out after a two days' notice has been given to the person responsible and shall consist, in the first place, of an examination of the boiler when it is cold and the interior and exterior have been prepared in such manner as may be directed by the Director, and secondly, except in the case of an economiser or superheater, of an examination while it is under normal steam pressure, but the two parts of the examination may be carried out by different examiners.

3 L.N. 34 of 1976.

- (2) The examination of boilers under steam pressure shall be made on the first occasion when steam is raised after the examination of the boiler when cold, or as soon as possible thereafter, and the person carrying out such examination shall see that the safety-valve is so adjusted as to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure.
10. (1) A report in duplicate of the result of every such examination, signed by the examiner on a form approved by the Director and containing such particulars as may be so required (including the maximum permissible working pressure) shall, as soon as practicable, and in any case within twenty-eight days after the completion of the examination, be forwarded to the Director.
- (2) For the purposes of this regulation and of the following provisions of these regulations relating to reports of examinations, the examination of a steam boiler when it is cold and its examination when it is under pressure shall be deemed to be separate examinations.
11. (1) Within fourteen days from the installation of a steam boiler (whether new or previously used) in a factory, the person responsible shall inform the Director accordingly, giving details as to the heating surface of the boiler and as to any other relevant information so as to enable the boiler to be identified.
- (2) No steam boiler which has previously been used shall be taken into use in any factory for the first time in that factory nor shall a steam boiler which has stood idle for a period of six consecutive months be retaken into use in any factory until it has been examined and reported upon in accordance with the provisions of regulations 8, 9 and 10 of these regulations.
- (3) No new steam boiler shall be taken into use in any factory unless there has been obtained from the manufacturers of the boiler, or from a boiler-inspecting company or association, a certificate specifying the maximum permissible working pressure thereof, and stating the nature of the tests to which the boiler and its fittings have been submitted; such certificate or certificates shall be kept available for inspection under the provisions of the Ordinance or of any regulations made thereunder, and the boiler shall be so marked as to enable it to be identified as the boiler to which the certificate or certificates relate:
- Provided that, in the case of a new steam boiler, where a certificate as prescribed in this regulation is not available, the Director may permit that it be taken into use after an examination by an examiner appointed under regulation 8 of these regulations has been carried out and the examiner is satisfied that the boiler may be used.
12. Where the report of any examination carried out in accordance with these regulations specifies conditions for securing the safe working of a steam boiler, such boiler shall not be used except in accordance with those conditions.
- 4 L.N. 34 of 1976.
13. One copy of the examiner's report furnished to the Director as provided in regulation 10 hereof shall be forwarded by the Director to the person responsible in respect of the factory in which the steam boiler is used or is intended to be used and it shall be kept on the premises for inspection.
14. Where the Director is not satisfied as to any examination carried out he may require the steam boiler to be re-examined by another examiner appointed for the purpose by

the Minister and the person responsible in respect of the factory where the boiler is used or is intended to be used shall give the necessary facilities for such re-examination.

PART III  
Hot Water Boilers

15. The owner of any hot water boiler shall ensure that the boiler is accompanied by a certificate by its manufacturers showing all the technical specifications used by the manufacturers and containing all the standard designs and dimensions in accordance with the manufacturers' number plate affixed on the boiler, and any such owner shall, before taking into use the boiler, send a copy of the certificate to the Director.
16. Every hot water boiler shall have a number plate affixed to it bearing the following data:
  - (a) the name of the manufacturers;
  - (b) the number given to the boiler by the manufacturers;
  - (c) the year of manufacture; and
  - (d) the maximum permissible working pressure.
17. The maximum allowable temperature shall not exceed 95% of the saturation temperature reckoned from 0° Centigrade or 32° Fahrenheit.
18. Steel-plate hot water boilers shall be provided with suitable manhole openings and handhole or washout openings to permit inspection and to facilitate the removal of sediment:

Provided that manhole openings may be omitted where the size or construction of the boiler is such that entrance is impracticable.
19. (1) Each hot water boiler shall be equipped with at least one expansion pipe or water-relief valve.
  - (2) Water-relief valves for such boilers shall be set to open at or below the maximum permissible working pressure.
- 5 L.N. 34 of 1976.
  - (3) Water-relief valves shall be so located and piped that there will be no danger of scalding persons.
20. (1) Where a stop valve is used in the supply pipe connection of a single hot water boiler, a stop valve shall also be provided in the return pipe connection.
  - (2) Where two or more hot water boilers are connected to a common system, a stop valve shall be provided in each supply and return pipe connection.
  - (3) Each hot water boiler shall have a pressure gauge with a shut-off cock which cock will be capable of disconnecting the gauge from the water in the boiler in case of damage or leakage of the latter.
  - (4) Pressure or altitude gauges on hot water boilers shall have the maximum permissible working pressure indicated in red on the dial, and such dial shall be graduated to not less than one and half times such maximum permissible working pressure.
  - (5) A direct reading thermometer, thermocouple or other temperature measuring instrument shall be incorporated on the outlet of the hot water boiler and such instrument shall be protected by a shielding tube and shall be so placed that leakage is prevented in case of damage or breakage of the instrument.

21. Hot water heating systems shall be so installed that the expansion pipe cannot be accidentally shut off.
22. (1) Each hot water boiler shall be equipped with at least one blow-off pipe, fitted with a valve or cock in direct connection with the lowest water space, and the boiler shall be so installed that all water can be drained from it.
- (2) Blow-off tanks, where used, shall be -
- (a) provided with a vent pipe, free from valves and of sufficient size to prevent the accumulation of pressure in the tanks, and
- (b) so located that all parts will be accessible for inspection.
23. Each automatic hot water boiler shall be equipped with an automatic low-water cut-off or water-feeding device, so constructed and located that when the surface of the water falls to the lowest safe water line-
- (a) the water inlet valve cannot feed water into the boiler through the float chamber, and
- (b) the device will automatically -
- (i) cut off the fuel supply; or
- 6 L.N. 34 of 1976.
- (ii) supply requisite feed water otherwise than through the float chamber; or
- (iii) simultaneously cut off the fuel supply and supply feed water as in sub-paragraph (ii) of this paragraph.
24. (1) Every hot water boiler and all its fittings shall be properly maintained and shall be thoroughly examined at least once in every period of twelve months, and after any extensive repairs, by a competent person appointed by the Minister to be an Examiner of Steam and Hot Water Boilers, and such examinations shall include hydrostatic test when deemed necessary by the examiner.
- (2) Every hot water boiler owner shall keep a boiler register in which he shall enter under the corresponding dates all tests, internal and external examinations, cleanings and repairs undertaken on the boiler, which register shall be forwarded on request to the Director.
- (3) An expansion pipe of a diameter of not less than 75% of that of the hot water pipe shall be branched off the hot water outlet in such a manner that it cannot be blocked, be bent or in any other way interfere with its function.

#### PART IV

##### Fees

25. (1) Every person responsible for a steam boiler shall pay to the Examiner of Steam and Hot Water Boilers who conducts a test or an examination on the steam boiler -
- (a) in respect of the annual or other examination required to be made under regulation 8 of these regulations, and
- (b) in respect of the examination of a steam boiler required to be made under regulation 11 of these regulations,
- a fee at the rate prescribed in paragraph (3) of this regulation.
- (2) Such fee shall cover all services and expenses of the Examiner of Steam and Hot Water Boilers, including those in respect of the supervision of extensive repairs, travelling expenses and all visits and tests made by the said Examiner.
- (3) The fee referred to in paragraph (1) of this regulation shall be at the following rates:

- (a) in respect of any boiler having a heating surface not in excess of 2.787 square metres  
£ 3.00,0;  
7 L.N. 34 of 1976.
- (b) in respect of any boiler having a heating surface in excess of 2.787 square metres but  
not in excess of 464.5 square metre £ 5.00,0;
- (c) in respect of any boiler having a heating surface in excess of 464.5 square metres £  
12.00,0.
- (4) The fees payable in respect of an examination required to be made under regulation  
24 of these regulations in respect of a hot water boiler shall be at half the rates  
specified in respect of steam boilers, and the preceding provisions of this  
regulation shall apply mutatis mutandis.
- (5) The Examiner shall give to the person responsible for the steam or hot water boiler a  
receipt showing the fee or fees paid in accordance with the provisions of this  
regulation.
- (6) The person responsible for a steam or for a hot boiler shall preserve the receipt given  
by the said Examiner in accordance with the provisions of paragraph (5) of this  
regulation, and shall show it on demand to the Director and to any inspector  
appointed for the purposes of the Factories Ordinance.

#### PART V

#### Revocation

26. The Factories (Steam Boilers) Regulation, 1951, are hereby revoked.