

Inspection Procedure of Low Risk installed boilers as per IBR, 1950.

Low Risk Boilers : All small Industrial Boilers (SIB).

Inspection requirement: Hydraulic Test only shall carry out to low risk Boilers for every renewal inspection. However when inspector feels required thorough examination can also be carried out.

Procedure for Hydraulic Test as per Reg 379 of IBR, 1950:

- a) The temperature of the water used as medium of pressure testing shall not be less than 20°C and greater than 50°C.
- b) The test pressure shall be raised gradually under proper control at all times so that it never exceeds by more than 6% of the required pressure and maintained for 30 minutes whereupon the pressure shall be reduced to maximum allowable working pressure and maintained for sufficient time to permit close visual inspection for leakage of pressure parts.
- c) After the application of the hydraulic test the Inspector shall carefully examine the boiler inside and outside and satisfy himself that it has satisfactorily withstood the test.
- d) The boiler shall satisfactorily withstand such pressure without appreciable leakage or undue deflection or distortion of its parts for at least ten consecutive minutes. If the test is not satisfactory, the working pressure allowable by calculation shall be suitably reduced, unless the owner desires to make such alterations as will enable the boiler to withstand satisfactorily the hydraulic test, in which case the boiler shall again be examined after the alterations have been made, the pressure recalculated, if necessary, and the boiler tested to the satisfaction of the Inspector.
- e) In any case in which the safe working pressure to be allowed for a boiler cannot, owing to peculiar construction of any of its parts, be determined by calculation in the ordinary way, the Inspector shall, under the direction of the Chief Inspector, subject the boiler to hydraulic test for the purpose of determining the fitness of such parts. The amount of the test pressure to be applied in such a case shall not exceed the test pressure prescribed for the least working pressure found by calculation for other parts of the boiler or the intended working pressure whichever is less.
- f) Should any part of the boiler show undue deflection or indication of permanent set during the progress of the test, the pressure shall be released immediately such indications are observed. The working pressure for the part shall be 40 per cent of the test pressure applied when the point of permanent set was reached. This procedure shall apply to any boiler at any test.
- g) The Inspector may if he considers it necessary, apply a hydraulic test to any boiler at any inspection.
- h) When carrying out hydraulic test, Inspectors shall use pressure gauges supplied by the Chief Inspector.

Note: If thorough examination is required, inspection procedure of thorough examination for medium risk boilers shall be followed.

Check list:

1. Verify the engraved Boiler Registration number.
2. Check the internal and external condition of all pressure parts of boiler.
3. Quality of boiler feed water (pH, TDS or hardness).
4. Working condition of feed water pumps.
5. Verify boiler operator qualifications.
6. Check the physical condition of safety valves i.e., any rust, scale or other foreign substances.
7. Check the condition of all boiler mountings & valves (main stop valves, feed check valves, air vent, blow down, feed inlet, water gauge mountings, and water level controller) & fusible plug etc.