

Texas Department of Licensing and Regulation (TDLR)



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10/24/14

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Boiler Safety Page
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Topics:

- An overview of TDLR and the boiler program
- Boiler Identification
- Regulated/Exempt Boilers
- Boiler Identification
- Safety Devices

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Statutes Administered

■ Air Conditioning and Refrigeration	■ Licensed Court Interpreters
■ Architectural Barriers	■ Polygraph Examiners
■ Auctioneers	■ Personnel Employment Org.
■ Barbering/Cosmetologists	■ Property Tax Consultants
■ Boilers	■ Service Contract Providers
■ Combative Sports	■ Tow Trucks, Operators and Vehicle Storage Facilities
■ Electricians	■ Temporary Common Worker
■ Elevators, Escalators, and Related Equipment	■ Used Auto Parts Recyclers
■ For Profit Legal Services	■ Vehicle Protection Product Warrantors
■ Industrialized Housing and Buildings	■ Water Well Drillers and Pump Installers
■ Licensed Breeders	■ Weather Modification

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Boiler Program

The program is part of the Compliance Division and is responsible for:

- Inspection of approximately 55,000 boilers;
- Processing inspection reports and issuing boiler certificates of operation;
- Establishing rules and standards;
- Auditing companies that fabricate, repair or alter boilers and pressure vessels in accordance the American Society of Mechanical Engineers and the National Board of Boiler and Pressure Vessel Inspectors
- Investigating boiler accidents; and
- Enforcing statute and rule requirements.

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HISTORY

- The Texas Boiler Law, Chapter 755 of the Health and Safety Code, was enacted on June 3, 1937, after a fatal accident at the London School (now know as New London). Estimates of the number dead vary from 296 to 319, but that number could be much higher, as many of the residents of New London at the time were transient oilfield workers, and there is no way to determine for certain how many of these roughnecks collected the bodies of their children in the days following the disaster and returned them to their respective homes for burial

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What is a boiler ?

- a vessel in which water is heated by a fuel source, i.e. natural gas, wood, propane, solar energy, etc., in order to produce steam or heated water to be used in a variety of applications, such as power generation, space heating, heated potable water and pool heating.

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Boiler Types

- Nuclear boilers
- Power boilers, unfired boilers and process steam generators that generate steam greater than 15 psi.
- Steam heating boilers that generate steam at 15 psi or less.
- Heating Boilers

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Boiler Types

- Heating Boiler Types
 - Hot Water Heating used for building heat
 - Hot Water Supply used to supply heated water for laundramats, pools, showers etc.
 - Potable Water systems.

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Boiler Types

- Definitions
- **Hot water heating boiler** - A boiler designed for operation at a pressure not exceeding 160 pounds per square inch gage or temperatures not exceeding 250 degrees Fahrenheit at or near the boiler outlet.

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Boiler Types

- Definitions
- **Hot water supply boiler**--A boiler designed for operation at pressures not exceeding 160 pounds per square inch gage or temperatures not exceeding 250 degrees Fahrenheit at or near the boiler outlet if the boiler's: heat input exceeds 200,000 British thermal units per hour; water temperature exceeds 210 degrees Fahrenheit; or nominal water-containing capacity exceeds 120 gallons.

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Boiler Types

- Definitions
- **Potable water heater** --A boiler designed for operation at pressures not exceeding 160 pounds per square inch gage and water temperatures not exceeding 210 degrees Fahrenheit if the boiler's: heat input exceeds 200,000 British thermal units per hour or nominal water-containing capacity exceeds 120 gallons.

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Boilers not regulated.

- Hot water supply and potable water boilers rated:
 - 200,000 BTUs per hour or less, or
 - Nominal water-containing capacity 120 gallons or less

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Different types of Boilers

- Boilers may be found at the following:
 - Hotels
 - Hospitals
 - Day Care Centers (including in home)
 - Nursing Home
 - Schools
 - Churches
 - Office Building(just to name a few)

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Power Boiler Steam 15 PSI and Higher



Fulton (gas)

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HOT WATER HEATING BOILER HOT WATER SUPPLY BOILER



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Typical Pool Water Supply Boiler



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Power or Steam Heating Boiler



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Power Boiler Steam 15 PSI and Higher



Reimers Electra

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When Boilers go wrong!

Boiler Facts

- There are two types of explosions.
 1. Those due to water expansion
 2. Furnace explosions

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The amount of force released when a boiler has a waterside explosion.

- Example
- If a boiler holds 100 gallons.
- The amount of force released is 1,332,800 pounds of force.

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The Break Down

- When water turns into steam it exerts 1600 times the amount.
- 1 pound of water = 1 pound of steam
- 8.33 pounds of water in 1 gallon of water
- 100 gallons of water = 833 pounds of water
- 833 lbs. X 1600 force = 1,332,800 lbs. force created

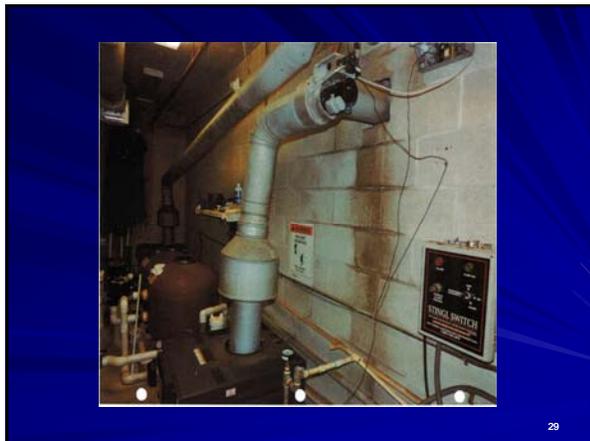
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Boiler Identification

- All regulated boilers are required to be registered with the TDLR and will be identified as such with a Texas decal, metal tag or direct stamping.

Boiler TX Decal

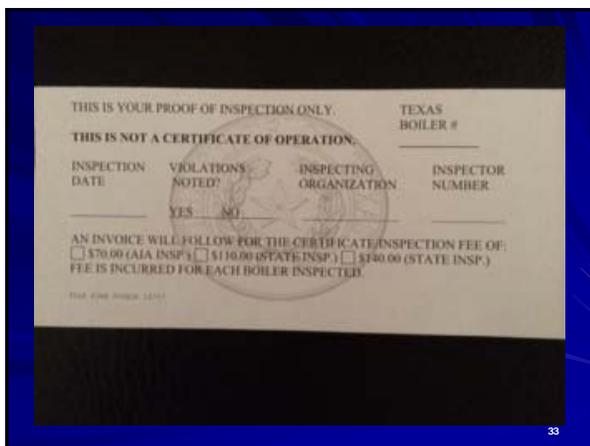


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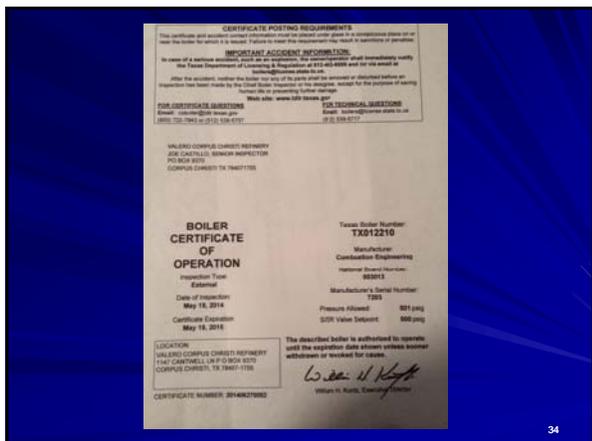
Boiler TX Aluminum or Bronze Tag



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Safety Appliances

- Designed to prevent unsafe operation of a boiler.
- Most boilers are designed to operate automatically.
- Boilers require regular maintenance and periodic checks even while in operation.

Safety Appliance Types

- Safety Relief Valves
- Low Water Cutoff Devices
- Pressure/Temperature Regulators
- Pressure Gages and Thermometers
- Water Level Indicators/Fire eyes
- Circuit Breakers and On/Off Switches.
- Insulation

Safety Relief Valves

- Designed to relieve excess pressure in the boiler in order to prevent an explosion.



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Questions?

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