

**13 NCAC 13 .0410 TEMPERATURE GAUGES/THERMOMETERS/TEMPERATURE SENSORS**

(a) Every high temperature water boiler, hot water heating boiler, hot water supply boiler or water heater shall be provided with a temperature gauge, thermometer or temperature sensor with the display located and connected so that it is readable. The temperature gauge, thermometer or temperature sensor shall be located so that it indicates the temperature of the water in the boiler at or near the outlet at all times.

(b) Temperature gauges and thermometers shall have a range of approximately two times the intended operating temperature. The temperature gauge shall have a range of no less than one and a half times and no more than four times the intended operating temperature.

(c) Electronic temperature sensors may be used in lieu of temperature gauges and thermometers and shall meet the following requirements:

- (1) The sensor shall be powered from the boiler power supply, have a backup power supply, and have a display that remains on at all times;
- (2) The full scale of the sensor and display shall be at least 250 degrees Fahrenheit, and shall be accurate to within +/- one degree;
- (3) The sensor shall have a minimum operating temperature range of 32 degrees Fahrenheit to 300 degrees Fahrenheit; and
- (4) The display shall have an ambient operating temperature range of 32 degrees Fahrenheit to 120 degrees Fahrenheit, unless otherwise required by the application.

*History Note: Authority G.S. 95-69.11; 95-69.14;  
Eff. May 29, 1981;  
Amended Eff. January 1, 1982;  
Recodified from 13 NCAC 13 .0411 Eff. January 1, 1995;  
Amended Eff. July 1, 2011; July 1, 2006; January 1, 1995;  
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, 2018.*