

15A NCAC 18A .0184 THERMAL PROCESSING CONTROLS - THERMOMETERS

- (a) All thermal processing equipment shall have a time-temperature recording thermometer with a temperature controller (combined or separately) and an indicating thermometer. The thermometers shall be located to give a true representation of the operating temperature of the process. The recording thermometer chart shall be at least a 12-hour chart and at least 10 inches in diameter.
- (b) The recording thermometer shall be installed so that it will be protected from vibration and from striking by loading operations or facility traffic. The thermometer mechanism shall be protected from moisture under prevailing conditions. The thermometer case shall not be opened during the thermal processing cycle, except for temperature check or for emergency or repair. A record shall be made when the thermometer case has been opened.
- (c) The recording thermometer shall have a range of at least 120-220° F (48.9-104.4° C). It shall be accurate within plus or minus 1° F between 160° F (71° C) and 200° F (93° C). The chart shall be scaled at a maximum of 2° F intervals in the range of 160° F (71° C) and 200° F (93° C).
- (d) The indicating thermometer shall be a thermometer with an accuracy and readability of plus or minus 1° F between 160° F (71° C) and 200° F (93° C). The thermometer shall be protected against damage.
- (e) The recording thermometer shall be equipped with a spring-operated or electrically operated clock. The recorded elapsed time as indicated by the chart rotation shall not exceed the true elapsed time as shown by an accurate watch. The rotating chart support shall be provided with pins upon which the chart shall be affixed by puncturing the chart.
- (f) The thermal processing unit shall not be operated without a recording thermometer chart in place, the pen in contact with the chart, and an inked record being made of the operating time-temperature cycle. Falsification of a thermometer chart by an individual with access to or that is an operator of a thermal processing unit shall constitute failure to comply with the requirements of this Paragraph. A permanent file of the used thermometer charts shall be maintained by the thermal processor and kept available for inspection by the Division of Marine Fisheries for a period of one year. The following information shall be recorded within the confines of the pen markings after the thermal processing cycle has been completed:
- (1) date of thermal processing;
 - (2) quantity of each batch thermally processed (pounds of crustacea meat or number and size of containers);
 - (3) thermal processor's code of each pack;
 - (4) if the thermal processor processes crustacea meat for someone else, then the packer's name, address, and permit number shall be recorded. A copy of the recording chart shall be provided to the owner of the crustacea meat;
 - (5) notation of mechanical or power failure or opening of the recording thermometer case for adjustment or repair during the thermal processing cycle;
 - (6) after the temperature in the thermal process has been reached and during the holding time, as set forth in Rule .0185 of this Section, the reading of the indicating thermometer and the time of reading shall be recorded on the chart; and
 - (7) signature of the thermal process operator.
- (g) A constant flow steam control valve is required, if steam is used as a source of heat.
- (h) The thermal processing unit shall be provided with effective and uniform temperature.
- (i) Other technologies shall be approved by the Division if they are shown to provide equivalent data, information, and records as required in this Rule.

*History Note: Authority G.S. 113-134; 113-182; 113-221.2; 143B-289.52;
Eff. April 1, 1997;
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