Attachment A-1 Treatment Requirements

KILN STERILIZATION TREATMENT SCHEDULE

Treatment: T404-b-4 Kiln Sterilization

Dry Bulb Temperatures	Wet Bulb Depression	Relative Humidity	Moisture Content	Thickness of Lumber	Exposure Time
140^0F	7^0F	82%	13.8%	1 inch 2 inches 3 inches	3 hrs 5 hrs 7 hrs
130^0F	16^0F	60%	9.4%	1 inch 2 inches 3 inches	10 hrs 12 hrs 14 hrs

1. Kiln, temperature recording equipment, humidity sensors and temperature sensors must be approved by MDA inspectors. Treatments will be verified by review of treatment printouts.

2. In addition to verifying temperature printouts, after kiln drying, the wood will be checked with a moisture meter to verify the wood is at or below the appropriate moisture content listed above. Two readings will be taken per stack of wood: one near the top of the stack and one near the bottom of the stack. These readings will be recorded in a computer database along with the date and time.

3. If the wood does not meet moisture content guidelines, it will NOT be in compliance unless it undergoes additional kiln drying and can then demonstrate that the moisture requirement has been met.

HEAT TREATMENT SCHEDULE

Treatment: T314-a Heat treatment

1. Heat treatment procedures may employ steam, hot water, kilns, or any other method that raises the temperature of the **center** of the wood to at least 160°F (71.1°C) and maintains the center temperature for at least 75 minutes.

2. Facilities, temperature monitors and temperature sensors will be approved by MDA prior to a compliance agreement being initiated. Compliance agreements must contain a diagram of the treatment facility to include at a minimum: dimensions, capacity, circulation fans, heat input location, and door locations.

3. The temperature monitoring equipment (thermocouples, temperature data loggers etc) must be accurate to within +/- 0.5 °C (0.9 °F) at the treatment temperature, capable of collecting temperature data at least once every five (5) minutes and recording or storing data for 30 days. The temperature monitoring equipment must also be calibrated (by a source that can provide accreditation such as NIST) prior to facility certification tests and a minimum of once an annually thereafter. In addition, if a permanent temperature recording system is used, the system must be recalibrated when any part or portion of the system is repaired or replaced.

4. Temperature monitoring equipment must be able to provide a record of the treatment that identifies each sensor and indicates time and temperature.

5. Internal wood temperatures shall be obtained and verified by sensors located in the larger pieces of firewood at representative locations within the stack. The number of temperature sensing elements required per load will vary with the size of the load. The minimum requirement is four (4) sensors – one (1) for measuring air temperature and three (3) for measuring internal wood temperature. For loads greater than 5,000 ft^3 (142 m^3) of wood, a minimum of one additional sensor for measuring internal wood temperature must be provided for each additional 2,000 ft^3. For example, a load of 9,000 ft^3 would require a total of six (6) sensors (one ambient air temperature sensor and five [3 + 2 additional sensors]). At least one sensor shall be placed in a large firewood piece in a portion of the load furthest away from initial heat circulation. Sensors will be placed in the wood in pre-drilled holes to measure core wood temperature. Probes are to be sealed into each hole with putty (electricians putty is recommended) to prevent reading ambient air temperature. Other recording arrangements may be considered if approved by MDA.

6. Begin treatment when **all** the temperature sensors reach the threshold temperature of 160° F (71.1° C). Treatment will be complete when all temperature probe readings are at or above the threshold temperature for the entire 75 minutes.

7. Temperature equipment will be certified by MDA personnel at regular intervals (suggested monthly) except in those cases where a facility is inactive in excess of 2 months. Certification will occur before production activities resume.