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	3 hrs
				2 inches	5 hrs
				3 inches	7 hrs
130^0F	16^0F	60%	9.4%	1 inch	10 hrs
				2 inches	12 hrs
				3 inches	14 hrs

1. 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 reading will be recorded in a computer database along with the date and time. This database information will be supplied to USDA, APHIS, PPQ on a monthly basis.

2. 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.

Fumigation Treatment Schedule

Treatment: T404-b-1-1 MB at NAP-tarpaulin or chamber

Temperature	Dosage Rate (lb/1,000 ft^3	Minimum Concentration Readings (ounces) At:			
		0.5 hr	2 hrs	4 hrs	16 hrs
70°F or above	3 lbs	36	30	27	25
40-69°F	5 lbs	60	51	46	42

1. The fumigation must be performed by a licensed fumigator.

2. The licensed fumigator must have a fumigator compliance agreement with United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine.

3. Review the treatment schedule for specific fumigation guidelines.

Heat Treatment Schedule
(Ash logs)

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 CPHST (Center for Plant Health and Science Technology) 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 CPHST.

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 USDA APHIS PPQ 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.