



# CERTIFICATE

## By Authority Of THE UNITED STATES OF AMERICA Legally Binding Document

By the Authority Vested By Part 5 of the United States Code § 552(a) and Part 1 of the Code of Regulations § 51 the attached document has been duly **INCORPORATED BY REFERENCE** and shall be considered legally binding upon all citizens and residents of the United States of America. ***HEED THIS NOTICE:*** Criminal penalties may apply for noncompliance.



**Document Name:** AWPA M3: Standard Quality Control Procedures for Wood Preserving Plants

**CFR Section(s):** 7 CFR 1728.202(f)(1)

**Standards Body:** American Wood Preservers Association



*Official Incorporator:*

THE EXECUTIVE DIRECTOR  
OFFICE OF THE FEDERAL REGISTER  
WASHINGTON, D.C.



AMERICAN WOOD-PRESERVERS' ASSOCIATION  
STANDARD

M3-81

STANDARD QUALITY CONTROL PROCEDURES FOR  
WOOD PRESERVING PLANTS

Note: Standard M3-81 consists of three pages dated as follows:  
Pgs. 1-3, 1981.

The following are considered to be the minimum requirements for exercising total quality control in wood preserving plants and adherence is necessary in order to assure "Quality and Reliability" of all treated timber products.

1. GENERAL REQUIREMENTS

1.1 Quality Control is the responsibility of general management but some member of the staff, adequately trained shall be designated Quality Control Supervisor and charged with the responsibility for exercising proper quality control procedures.

1.2 These procedures require surveillance and control, from purchase of the basic raw material through all phases of manufacture and processing and until shipment to the customer.

1.3 Where appropriate, other American Wood-Preservers' Association Standards shall be used in conjunction with this Standard.

1.4 Records shall be kept covering seasoning, preservative analysis, treatment and results of treatment. Records for each lot of material processed shall carry an identification number, date of treatment and identify the purchaser. These records shall become a part of the treating company's permanent file.

1.5 The treating company shall provide a laboratory on the plant's premises, adequately equipped with all apparatus and supplies incidental to analyzing the preservative, performing assays and any other tests as may be agreed upon by the purchaser and the treating company. The laboratory shall be located in a building away from the treating room proper and shall have ample space, light and ventilation or air conditioning. The laboratory shall be maintained in a clean and orderly condition at all times and shall be restricted to the use for which it is intended. Suitable desk and working space shall be provided.

1.51 A treating plant using water-borne preservatives may have a laboratory not located on its premises analyze the preservative solution and perform assays or other tests for preservative retention.

Final acceptance of material shall be withheld until the preservative and retention is found to conform to specifications.

1.6 When it becomes evident that any phase of production does not comply with the requirements of the AWWPA Standards, the Quality Control Supervisor shall notify management and corrective measures shall be instituted.

1.7 The Quality Control Supervisor shall not release any material for shipment to the customer or for inspection until he is satisfied that the material complies with the customer's specification.

2. MATERIAL PRE-TREATMENT  
QUALITY CONTROL

2.1 Plant Quality Control shall determine that all material has been stored in accordance with the recommended practices of the AWWPA while under plant control and prior to preparation for treatment.

2.2 Plant Quality Control shall determine that all material complies with the customer's specification and shall do so in accordance with the procedures set forth in Standard M 2.

2.3 The cubic content of each charge shall be determined with particular emphasis on accuracy when net retention is to be determined on the basis of tank gauge readings.

2.31 Volumes of round timber products shall be determined in accordance with Standard F 3.

2.32 Volumes of standard rough sawn lumber shall be determined from their nominal dimensions.

2.33 Volumes of dressed or machined products shall be determined from their finished dimensions.

2.34 Daps, gains, holes or other working shall be disregarded unless they remove 5% or more of the solid volume of the charge.

2.35 Volumes of hewed crossties, ties sawed on two faces only, or those graded on the basis of their thickness and width of face in the rail-bearing area, shall be determined by one of the following methods of displacement:

a. A per-charge volume may be obtained by displacement as follows: Fill the cylinder, con-

taining only the number of empty trams used in a charge, with preservative. Read the working gauges carefully, both before and after filling, and convert the difference into cubic feet of cylinder volume. At the end of the pressure period, surplus preservative shall be permitted to kickback into the working tank. The cylinder should be vented and all the voids refilled with preservative. With the cylinder full of preservative, the contents of the working tank shall be determined and corrected to 100°F. The preservative shall then be returned to the working tank and the volume corrected to 100°F. The difference between these readings shall be corrected to the cylinder temperature before the preservative is returned to the working tank. This figure converted to cubic feet shall be subtracted from the volume of the cylinder containing empty trams, to obtain the volume of wood in the charge.

- b. A per-tram volume may be obtained as follows: In a tank sufficiently large to hold one tram of ties submerged in water, obtain the average displacement of empty trams. Obtain the displacement of a sufficient number of trams loaded with treated ties to produce a fair average. The difference in volume displaced by the ties and trams minus that displaced by the trams is the volume of wood per tram. Obtain figures for each tie size or combination of the sizes customarily treated together, which may be set up as fixed volumes per tram. These figures, divided by the average number of ties per tram, will give an average volume per tie size.

### 3. PLANT GAUGES

3.1 Pressure plants shall be equipped with recording instruments to register time, pressure, temperature and vacuum during each cycle of treatment; also with indicating thermometers and pressure and vacuum gauges for checking the accuracy of the recorders. Work tanks shall be equipped with a thermometer. Thermal treating vats shall be equipped with a time and temperature recorder and with an indicating thermometer. Where heat is not required for proper treatment of the material and no facilities exist for application of heat to the treating vessel, working and/or storage tank, the temperature devices are not required.

3.2 All recorders, thermometers and gauges, including work tank float or patent gauges and scales, shall be tested and certified for accuracy at time of installation by an instrument company or qualified

gauge tester, and annually thereafter. Whenever there is evidence of malfunction not corrective by simple adjustment; the instrument, gauge or scale shall be promptly repaired or replaced and recertified for accuracy.

3.3 Certified calibration tables of measuring or work tanks shall be conveniently located. In the event of any damage or alteration to a work tank that may cause an error in the gauge reading, the tank shall be re-calibrated and certified by a qualified gauger.

3.4 Recording instruments shall be compared during different stages of treatment with the indicating gauges and thermometers. The recorder shall be within the tolerances given below. When found nonconforming, corrective action shall be taken.

- (a) *Thermometers*—The recording instrument and thermometer should agree within 5°F.
- (b) *Pressure Gauges*—The recording instrument and pressure gauge should agree within 5 pounds pressure.
- (c) *Vacuum Gauges*—The recording instrument and vacuum gauge should agree within 1 inch of mercury.

3.5 Certified tests of thermometer and gauges, as required under paragraph 3.2 shall be made as follows:

- (a) *Thermometers*—Compare with thermometer of known accuracy and allow a variation not exceeding 2°F.
- (b) *Pressure Gauges*—Compare with a standard test gauge or suitable gauge-testing device and allow a variation not exceeding 3 pounds pressure.
- (c) *Vacuum Gauges*—Compare with a mercury column and allow a variation not exceeding 1 inch of mercury.
- (d) *Work Tank Gauge*—Measure the innage or outage at three levels with a tank tape and read off the contents at each level from the certified tank calibration table. The corresponding gauge readings shall not exceed plus or minus 1% of the contents in gallons thus determined.
- (e) *Tank or Track Scales*—Compare with certified test weights and allow a variation in pounds not exceeding 2%.

### 4. PRESERVATIVE

4.1 Plant Quality Control shall determine that the preservative used in each treatment conforms with the requirements for the preservative specified.

## 5. TREATMENT

5.1 The treatment, unless otherwise specified, shall conform with the AWPA Standards for the commodity and type of treatment specified, and with Standard C1. Plant Quality Control shall maintain records on the cycles of treatment and the tank gauge readings and temperatures.

5.2 Careful observation during treatment shall be made of temperatures and pressures, and their duration, to make certain that maximum limits are not exceeded.

## 6. RESULTS OF TREATMENT

6.1 Following treatment, an examination shall be made of the charge for any mechanical or treatment damage. Material with mechanical damage that cannot be repaired shall be rejected. When treatment

damage is indicated, the material shall be rejected unless the customer desires to accept on a conditional basis.

6.2 Plant Quality Control shall bore the treated material in each and every charge to determine conformance with the penetration specified. He shall also determine in each and every charge by the method specified, that the preservative retention conforms with the specification.

6.3 In determining retention by the assay method, the boring instructions and precautions given in AWPA Standard M 2 shall be observed.

## 7. REPORTS

7.1 The treating company shall furnish the purchaser, or his representative, a certificate of compliance or such report on the material and treatment as the purchaser may request.