

Section 863—Preservative Treatment of Timber Products

863.1 General Description

This section includes the requirements for applying preservatives, conditioning, treating, inspecting, marking, testing, and documenting the necessary information for treated timber used in Department Work.

863.1.01 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

American Wood Preservers Association (AWPA), C14, “Wood for Highway Construction— Preservative Treatment by Pressure Method”

AWPA C2

AWPA M2

AWPA M3

AWPA P9

AASHTO M 133

[QPL 50](#)

863.2 Materials

863.2.01 Conditioning and Preservative Treatment

A. Requirements

1. Condition and preservative treat all timber products to meet the requirements of American Wood Preservers Association (AWPA) Standard C14, “Wood for Highway Construction—Preservative Treatment by Pressure Method,” except as described in this Section.
2. Treatment Plants

Ensure treatment plants comply with quality control procedures in AWPA M3.

 - a. To expedite the work, the Department or its inspection agency will inspect timber at the treatment plant.
 - b. Before requesting an inspection, the authorities of the treatment plant shall acquaint themselves with the timber specification requirements and shall segregate the material to be inspected for Department work from other stock.
3. Preservatives

Use preservatives that meet the requirements in the AWPA Standard, unless otherwise specified in the Plans or the Specifications.

 - a. You may select one of three preservatives (creosote, pentachlorophenol, Chromated Copper Arsenate (CCA)) from the Materials and Usage Table in AWPA C14.
 - b. Ensure pentachlorophenol solutions have at least 5 percent pentachlorophenol, by weight, dissolved in the petroleum solvents specified or pentachlorophenol in AWPA P9, Type “A.”

Section 863—Preservative Treatment of Timber Products

B. Fabrication

1. As practicable, cut, frame, and bore timber before treatment.
2. Condition the timber first. For Southern Pine species, use the following treatment:

Penta-petroleum	Dry in kiln to 30% average moisture content or less or condition in steam
Chromated Copper Arsenate (CCA)	Dry in kiln to 25% average moisture content or less

NOTE: Do not heat the wood in the preservative, and do not use Boulton drying.

3. Preservative Penetration

Ensure the preservative penetrates at least 3 in (75 mm) or 90 percent of the sapwood for all lumber, timber, wood fence posts, and ties in contact with the ground.

- a. Ensure lumber, timber, and ties that do not contact the ground meet AWPA C2 requirements.
- b. Ensure preservative penetrates all other materials, piles, and poles according to applicable AWPA requirements.

4. Preservative Retention

Treat guard rail posts and offset blocks with pentachlorophenol or CCA with a minimum 0.6 lb/ft³ (9.6 kg/ m³) retained in the outer 0.6 in (15 mm), as required in AWPA C14 and C2.

5. Retreatment:

You may retreat a charge of material, or a portion of it, if the initial treatment does not meet requirements for retention, penetration, or appearance. The Department will allow only one retreatment.

NOTE: The Department will reject any damage due to retreatment.

6. Conditioning after Treatment

- a. Condition material that is dust-free.
- b. For lumber or timber that is treated with water-borne preservative and is to be painted, dry by air, kiln, or some method of artificial conditioning, to a moisture content of not more than 19 percent of the weight of the oven-dry wood.
- c. Protect the treated lumber from the elements with a prime coat of paint or other approved means.
- d. Ensure the moisture content does not rise above 19 percent before applying the first coat of paint.
- e. Dry material treated with water-borne preservative that will not be painted to surface dryness in air or otherwise before installing it.

C. Acceptance

1. Inspection

The Department will sample and test preservatives according to the requirements of AASHTO M 133.

NOTE: Check [QPL 50](#) for pre-approved manufacturers that supply material compliant with this specification.

- a. The Department will determine the level of preservative retention by testing the 0.6 to 1.5 in (15 to 38 mm) assay zone.
- b. Unless otherwise provided, either the Office of Materials and Research or an authorized inspection agency will inspect treated timber products according to AWPA M2.
- c. The Inspector will test before, during, and after treating.

2. Marking

The Inspector will mark each acceptable piece with a hammer stamp before and after treatment.

- a. Stamp only 25 percent of the offset blocks after treatment.
- b. Ensure that both inspection stamps identify the Inspector. Ensure that the before-treatment stamp is clearly distinguished from the after-treatment stamp.

Section 863—Preservative Treatment of Timber Products

3. Reporting

The Inspector, whether from the Office of Materials and Research or an approved laboratory, shall:

- a. Prepare reports of the treating process and results of the inspection that confirm treatment was completed according to these Specifications.
- b. Furnish these reports to the Office of Materials and Research.
- c. Report according to AWPA M2.
- d. Get a shipping report from the treatment plant showing the project number, purchaser, sizes and amounts of materials, and preservative type for each shipment for Department Work.
- e. Furnish the shipment report and the treatment report to the Office of Materials and Research.

D. Materials Warranty

1. Retest treated material that has been in stock for two years before using.
2. The Department will reject any materials that fail to meet specifications unless they are retreated to meet all applicable requirements.