

**706.09 Measurement and Payment.** Measurement and payment for wood products will not be specifically made under this section of the specifications. Measurement and payment will be made in accordance with other sections of these specifications that govern the items of work including wood products.

## **SECTION 707**

### **PRESERVATIVE TREATMENT OF WOOD PRODUCTS**

**707.01 Description.** This specification governs preservative treatment for timber and lumber for guard rail posts, fence posts, fenders and dolphins, and piling in accordance with the following specifications. Unless otherwise specifically authorized by the Department, inspection of the material to be treated and of the treatment process will be made by the Department or by its authorized inspection agency. The material to be treated will normally be inspected before treatment and the inspection of the treatment process will be made while the process is actually taking place.

The treatment plant shall provide laboratory facilities on the premises for the Department or its authorized inspection agency. The laboratory shall include technicians, conforming to AWPA M-3, Paragraph 1.5 for determining the retention by assay method and making analysis of the treating solution. Smaller plants treating only fence posts or miscellaneous lumber will not be required to have on premise laboratory facilities for testing waterborne preservatives, but will be required to bear the expense of such testing. The Department or its inspection agency will perform the testing in these instances.

## MATERIALS

**707.02 Wood.** Wood products shall conform to the requirements of Section **706**.

**707.03 Preservative.** The preservative to be used shall conform to the following specifications:

Creosote for Land, Fresh, Water, and Marine.	AWPA P1 / P13.
Creosote Solutions.	AWPA P2.
Creosote-Petroleum Solution.	AWPA P3.
Petroleum Oil for Blending with Creosote.	AWPA P4
Pentachlorophenol.	AWPA P8.
Solvent used in Pentachlorophenol Solutions.	AWPA P9
Acid Copper Chromate.	AWPA P5
Ammoniacal Copper Arsenate.	AWPA P5
Ammoniacal Copper Zinc Arsenate.	AWPA P5
Chromate Copper Arsenate.	AWPA P5

Tests of the preservation shall be made in accordance with the requirements of AASHTO M 133 for the particular preservative involved.

## CONSTRUCTION REQUIREMENTS

**707.04 Treating Equipment and Methods.** Wood products shall be treated in accordance with AWPA C14, or the following specifications except that in the case of conflict C14 shall govern:

1. General requirements for timber treatment shall be those set forth in AWPA C1.
2. Lumber and sawed timber including guardrail posts and blocks shall be treated as set forth in AWPA C2.
3. Round timber piling shall be treated as set forth in AWPA C3.

4. Sawed fence posts shall be treated as set forth in AWPA C2.

5. Round fence posts shall be treated as set forth in AWPA C5.

**707.05 Retention of Preservative.** For wood products treated with creosote, creosote-coal tar solution or pentachlorophenol solution, the net retention is expressed in pounds of preservative per cubic foot of wood. For material treated with water-borne salts preservatives, the net retention is expressed in pounds of dry preservative per cubic foot of wood. The type of preservative and the minimum net retention allowed shall conform to AWPA C14.

All net retention shall be determined by the assay method in accordance with AWPA M2.

**707.06 Penetration.** The penetration of the preservative for treated wood products shall be determined as set forth in AWPA Standard M2. For lumber, structural timber, sawn fence post and guardrail posts, the penetration of the preservative shall be 2 1/2 inches or 85% of the sapwood. The penetration of preservative in foundation piles or in piles for land or fresh water use shall be 3 inches or 90% of the sapwood. Piles for use in coastal water, treated with creosote or creosote-coal tar solution shall have a penetration of 4 inches or 90% of the sapwood. Piles for use in coastal water, treated with waterborne preservatives shall have a penetration of 3 1/2 inches or 90% of the sapwood.

All holes made for determining the penetration of preservative shall be filled with tight-fitting treated plugs.

**707.07 Handling and Storage.** Care and handling of treated wood products shall be in accordance with AWPA M4.

**707.08 Fabrication.** Any fabrication to be performed prior to treatment or at the treatment plant shall be in accordance

with AWPA M4, Paragraph 1.41.

**707.09 Measurement and Payment.** The work and materials described and specified in this Section will not be measured for the purpose of making payment, as such work and materials are to be measured and paid for in accordance with the applicable sections setting forth the materials to receive the preservative treatment.

## **SECTION 708**

### **HARDWARE**

**708.01 Description.** This work shall consist of metal used in the construction of timber structures; and all bolts, lag screws, nuts, nails, washers and turnbuckles. Hardware for other type structures shall conform to the requirements of these specifications unless shown otherwise in the plans or as directed by the Engineer.

### **MATERIALS**

**708.02 Rolled Steel.** Rods, plates, shapes and eye bars shall be of structural carbon steel or malleable iron if specified, conforming to the requirements of Section **709**.

**708.03 Castings.** Castings shall be cast steel or gray-iron as specified, conforming to the requirements of Section **709**.

**708.04 Miscellaneous Items.** Bolts, drift pins, dowels, lag screws, nails and machine bolts shall be low carbon steel conforming to the requirements of Section **709**. Washers shall be used on each end of all bolts, except only one washer is required for high strength bolts. Washers bearing on wood for bolts larger than 1/2 inch shall be cast ogee or approved malleable castings. The thickness of cast ogee washers shall be at least equal to the diameter of the bolt and