



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

June 29, 2005

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
545 John Knox Road
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 955
Proposed Specification: 9550000

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Lumber and Timber Treatment (Including Treating Materials).

This change was proposed by Ghulam Mujtaba of the State Materials Office to update Section to reflect current requirements.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Signature on file

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/jf
Attachment

cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

**LUMBER AND TIMBER TREATMENT (INCLUDING TREATING MATERIALS.)
(REV 5-25-05)**

SECTION 955 (Pages 867-869) is deleted and the following substituted:

**SECTION 955
TIMBER TREATMENT
(INCLUDING TREATING MATERIALS)**

955-1 General.

The work specified in this Section is the treating of structural timber, timber piling and timber posts. The method of treatment for all such timber materials shall be in accordance with the American Wood Preservers' Association (AWPA) *Use Category Standard (USC) - U1, Standards*, with the exceptions and additions as specified herein.

955-2 Preservative.

955-2.1 Salt or Brackish Water Use: The treating of Southern Yellow Pine (SYP) lumber or timber for use in salt or brackish water environments shall be done with Chromated Copper Arsenate (CCA).

955-2.2 Above Ground or Ground Contact and Fresh Water Immersion Use: The treating of SYP lumber and timber for above ground or ground contact and fresh water immersion applications, shall be done with Copper Azole-Type B (CA-B), Amine Copper Quat-Type D (ACQ-D), or CCA, with the following exceptions:

The treatment of the wood products of the pedestrian bridges, wood rails at buildings or rest areas, and fence posts shall be done either with Copper Azole-Type B (CA-B) or Amine Copper Quat-Type D (ACQ-D).

~~—The treating of Southern Yellow Pine (SYP) timber shall be with Amine Copper Quat-Type D (ACQ-D) or Chromated Copper Arsenate (CCA), for above ground, ground and fresh water immersion applications. The treating of timber (SYP) for use in salt (or brackish) water environments shall be with Chromated Copper Arsenate (CCA). Ammoniacal Copper Arsenate (ACA) may be substituted to treat Pacific Coast Douglas Fir if Southern Yellow Pine cannot be purchased.~~

955-3 Process.

All timber *and lumber* items shall be treated ~~by the modified full cell process in accordance with standard T1 of the AWPA manual.~~

955-4 Requirements for Preservative Materials.

Amine Copper Quat-Type D (ACQ-D), Chromated Copper Arsenate (CCA), Copper Azole-Type B (CA-B), Ammoniacal Copper Zinc Arsenate (ACZA) shall be in accordance with AWPA P5.

~~—955-4.1 Amine Copper Quat-Type D (ACQ-D): The test methods for ACQ-D shall meet the requirements of AWPA Standards A2 and A17.~~

~~955-4.2 Chromated Copper Arsenate (CCA) shall be of the following composition:~~

CHEMICAL COMPOSITION REQUIREMENTS FOR CHROMATED COPPER ARSENATE		
	Minimum (%)	Maximum (%)
Hexavalent Chromium, as CrO₃	33.0	50.5
Copper, as CuO	17.0	22.0
Arsenic, as As₂O₅	30.0	48.0

~~—————The active ingredients in the solution shall be in proportions within the range required for the salt itself.~~

~~—————The pH of the treating solution shall be between 1.6 and 3.2.~~

~~—————The tests for CCA shall meet the requirements of the standard methods of the American Wood Preservers' Association, Standard A2. The Department's State Materials Office will acquire random test samples of the preservatives.~~

~~—————When Douglas Fir is used, ammoniacal copper arsenate shall be used as the salt preservative in lieu of chromated copper arsenate. Ammoniacal copper arsenate shall meet the requirements of the AWWA Standards. Tests to determine conformance shall be in accordance with AWWA Standard A2.~~

955-5 Requirements for Retainment.

955-5.1 Piling :A minimum of 2.50 lb/ft³ [40.1 kg/m³] of CCA oxides shall be retained in zone 1, outer 0.50 inch [12.7 mm], and 1.5 lb/ft³ [24.0 kg/m³] in zone 2, outer 0.50 to 2 inches [12.7 to 51 mm].

If ACZA is used, a minimum of 2.50 lb/ft³ [40.1 kg/m³] shall be retained in *zone 1, outer 0.50 inch [12.7 mm], and 1.5 lb/ft³ [24.0 kg/m³] in zone 2, outer 0.50 to 2 inches [12.7 to 51 mm]*~~the 0.0 to 1 inch [0 to 25 mm] zone.~~

955-5.2 Structural Timber and Sheet Piles: When installation is not in a salt (or brackish) water environment, the minimum retention shall be 0.60 lb/ft³ [9.6 kg/m³] of CCA or ACQ-D *or 0.31 lb/ft³ [5.0 kg/m³] CA-B oxides*, as determined by cores from the outer 0.60 inch [15.2 mm]. When installation is in a salt (or brackish) water environment, a minimum of 2.50 lb/ft³ [40.1 kg/m³] of CCA oxides shall be retained in the outer 0.60 inch [15.2 mm].

All guardrail material (timber posts, blocks, wedges, etc.) shall retain a minimum of 0.40 lb/ft³ [6.4 kg/m³] of CCA or ACQ-D *or CA-B at 0.21 lb/ft³ [3.3 kg/m³]-oxides* in the outer 1 inch [25 mm] zone.

955-5.3 Posts: *Round/sawn* ~~Timber~~ fence posts shall retain a minimum of 0.40 lb/ft³ [6.4 kg/m³] of ~~CCA or~~ ACQ-D *or 0.21 lb/ft³ [3.3 kg/m³]-oxides of CA-B* in the outer 1 inch [25 mm] zone.

955-5.4 Determination of Retention: Retention shall be determined by assay performed and certified by the treating company *in accordance with the applicable AWWA standards.*

955-6 Penetration Requirements.

955-6.1 For Structural Timber: The penetration of the treatment shall be in accordance with the *applicable AWWA standards*~~American Wood Preservers' Association Standard C-2~~, with the exceptions as specified herein.

955-6.2 For Round Piles and Fence Posts: Any round pile or post, which does not show complete sapwood penetration will be rejected or shall be retreated to meet such penetration requirement.

955-6.3 Retreatment: The necessity for retreatment of structural timber, piling and posts shall be avoided as far as practicable and if it becomes apparent that due measures are not being taken to prevent such necessity, the acceptance of retreated materials may be withdrawn.

When retreatment is necessary the maximum limits for temperature of steam or preservative, and for preservative pressure, which apply to the original treatment shall not be exceeded during the retreatment.

955-6.4 Determination of Penetration: Sapwood penetration shall be determined by taking at least one increment boring core from each pile and cap, and other pieces of similar dimensions and, for other sizes of material, at least one boring from the charge for each 1,000 FBM [2 m³] in the charge. All bored holes shall be immediately plugged, with tight fitting treated plugs.

955-7 Handling Salt Treated Piling.

In handling of piles that have been treated with chromated copper arsenate or ammoniacal copper arsenate, cable slings shall be used. Mechanical grabbers or pointed tools shall not be permitted. Rough or careless handling shall be avoided at all times.

955-8 Identification of Treating Plants for Round Piling.

The treating plant shall brand, or place a distinctive permanent mark, on each round pile, approximately 6 feet [2 m] from the butt end, such that the plant responsible for the treatment can be readily determined at any time during the service life of the piling.

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