

SPECIFICATION NUMBER ENG84-02

**SPECIFICATION
FOR
PRESERVATIVE TREATED SOUTHERN PINE CROSSARMS
REVISED AUGUST 2, 1999**

**LAKELAND ELECTRIC
ELECTRIC SYSTEM ENGINEERING
LAKELAND, FLORIDA**

SPECIFICATION

- 1.0 **SCOPE**
- 1.1 These specifications are the minimum acceptable quality standards for preservative treated southern pine crossarms for use in electric distribution power line construction.
- 2.1 **GENERAL**
- 2.1 These specifications cover the manufacture and preservative treatment of crossarms produced from Longleaf pine (Pinus palustris), Shortleaf pine (P. echinata), Loblolly pine (P. taeda) and Slash pine (P. caribaea). The material used and the process of manufacture shall conform in all respects with the following standards, except as modified or supplemented herein.
- 2.1.1 Edison Electric Institute (EEI) Standard TD-91, “Specifications for Dense Southern Pine Crossarms, Preservative Treated”. (Latest Revision).
- 2.1.2 American Wood Preservers’ Association (AWPA) Standard C25, “Sawn Crossarms- Preservative Treatment by Pressure Processes” (Latest Revision).
- 2.1.3 Southern Pine Inspection Bureau (SPIB) Grading Rules for Southern Pine Lumber. (Latest Revision).
- 2.2 Cross section limits These specifications cover crossarms having cross sections of not more than five (5) inches on one face by not more than six (6) inches on the other face.
- 2.3 Quality of lumber The lumber used shall be dense, as defined in SPIB Grading Rules for Southern Pine Lumber, and shall meet the “Definitions” and “Limitations” qualifications of EEI Standard TD-91. (Latest Revision).
- 2.3.1 Light duty crossarms of 3-1/2” x 4-1/2 cross section dimensions shall be manufactured from dense structural 65 or dense structural 72 stock. When dense structural 65 is used, pieces unfit for crossarms supplied under these specifications due to physical location of defects, shall be sorted out.

2.3.2 Heavy duty crossarms of 4-3/4" x 5-3/4" cross section dimensions shall be manufactured from dense structural 72 stock.

3.0 **MANUFACTURING REQUIREMENTS**

3.1 **Seasoning** Crossarms shall be seasoned to conform to requirements of AWPA Standard C25-Group A. (Latest Revision).

3.2 **Manufacture** Crossarms shall be completely manufactured, including all dressing, framing and boring, prior to treatment.

3.3 **Dimensions and tolerances** The dimensions and drilling details shall conform to the requirements specified on the attached Lakeland Electric drawings.

3.2.1 Unless otherwise stated, dimensions and drilling shall not deviate beyond the tolerance specified in Appendix I, Dimensions, EEI Standard TD-91. (Latest Revision).

3.4 **Inspection** Inspection for all lumber defects and tests for moisture content shall be made before treatment and after all cutting, surfacing, boring and branding have been completed.

4.0 **PRESERVATIVE TREATMENT**

4.1 **Process** Preservative treatment shall be by the pressure process to conform with the requirements of AWPA Standard C25, Group A. (Latest Revision) except penetration shall be as specified under "Results of Treatment".

4.2 **Preservative** Treatment shall be with pentachlorophenol-petroleum solution.

4.2.1 **Pentachlorophenol-petroleum solution** It shall contain 5% pentachlorophenol by weight as determined in accordance with AWPA Standard A5. (Latest Revision) The pentachlorophenol shall conform to AWPA Standard P8 and the petroleum to AWPA Standard P9, (Latest Revision) heavy petroleum solvent.

4.3 **Results of treatment**

4.3.1 **Retention** The minimum net retention shall be 8 pounds per cubic foot of wood for pentachlorophenol-petroleum solution.

4.3.2 **Penetration** The preservative shall penetrate throughout the sapwood and as much of the heartwood as possible.

4.3.2.1 **Determination of penetration** Preservative penetration shall be determined in accordance with AWPA Standard C25, (Latest

Revision) except that acceptance shall be based on 95% of the group of samples having 100% sapwood penetration.

4.0 **MARKING**

4.1 All crossarms shall be branded with a hot brand or die-stamped legibly and to a depth of approximately 1/16-inch minimum before treatment. The letters and numerals shall not be less than ½ inch in height. The brand or die-stamp shall include the following information:

- a) The manufacturer's identifying symbol, code or trademark
- b) Month and year of manufacture
- c) Species of timber: SP for Southern Pine
- d) Preservative
- e) The initials LE placed below the brand

The brand or stamp shall be placed on either of the wide surfaces of the crossarms and approximately one (1) foot from the midpoint of the arm. The mark should be approximately the same location on all arms of the same type.

6.0 **INSPECTION**

6.1 Inspection shall include determining the suitability of the material to be treated, sampling and testing of the preservative and determining the retention and penetration of the preservative in the treated product.

6.2 The supplier shall provide suitable facilities for inspection by Lakeland Electric or an authorized inspector (if provided) and shall supply any necessary assistance For turning, moving and spreading products for inspection and tests.

7.0 **SUPPLIER'S RESPONSIBILITY**

7.1 It is the responsibility of the supplier to furnish materials in accordance with the requirements of this specification regardless of inspection by the purchase or its representative.

8.0 **SHIPMENT**

8.1 All crossarms shall be neatly and securely bundled prior to shipment.