

## ***APPENDIX E: RECOMMENDED METHOD FOR DETERMINING THE TREATABILITY OF A SPECIES FOR INCLUSION IN THE AWPA USE CATEGORY SYSTEM COMMODITY SPECIFICATION FOR SAWN MATERIAL***

Maintained by Subcommittee T-2

This Appendix to AWPA's Technical Committee Regulations is not an AWPA Standard. It is a non-mandatory guidelines document presented to enable the user to understand the basic testing requirements for wood protection systems and to assist the AWPA Technical Committees in the development of AWPA Standards. The testing of products in accordance with this Appendix does not constitute conformance with any AWPA Standard. No product can be considered to conform with an AWPA Standard until it has been subjected to complete technical review and voting by AWPA's Technical Committees, and procedural review and final action by the AWPA Executive Committee pursuant to the AWPA Technical Committee Regulations.

All technical data presented for the purpose of listing a species in the AWPA Use Category System Standards for Sawn Material should be delivered to AWPA. Such delivery shall have been accomplished at least 45 days prior to the annual meeting of Subcommittee T-2. (AWPA Committee Regulations 9.6)

### **Initial Evaluation**

It is recommended that one or two charges or partial charges of sawn material from the species proposed for standardization be treated. The material treated shall be representative of the species as it will be treated commercially. A minimum of 20 pieces from each treated charge, chosen at random, shall be dried and then cross sectioned at least two feet from either end of the piece for determination of cross sectional penetration of preservative.

Chemicals for penetration determination and for differentiation of sapwood and heartwood shall be used when applicable. Standard Methods for determining penetration are shown in AWPA Standard A3 and for determining heartwood and sapwood in AWPA Standard M2, paragraphs 5.3.1.1 and 5.3.1.2.

The cross sections with penetration indicator applied should be photographed. Color pictures, color slides or the actual cross sections showing preservative penetration shall be submitted. Actual cross sections, if submitted, should be cut to an approximate 4 inch length.

### **Data for Standardization**

Five to ten additional charges or partial charges of sawn material from the species proposed for standardization should be treated. A minimum of 20 borings shall be taken from each charge for determination of preservative penetration and retention. Borings shall be taken according to instructions contained in AWPA Standard M2, Section 5.2 as applicable to boring sawn material. The zone chosen for assay shall be as defined in AWPA Standard U1 for the size tested, for the closest similar species listed in U1. If the species for approval is predominately sapwood, the section of borings for assay shall be sapwood. If the species for approval is predominately heartwood, the section of borings for assay shall be heartwood. (AWPA Standard M2, paragraph 5.4.2 Lumber.) Chemicals for determining preservative penetration and differentiating sapwood and heartwood shall be used as

applicable. Where the depth of penetration into sapwood is measured, borings should be split or two borings should be taken in close proximity to each other in each piece. Depth of preservative penetration can be shown on one split half or on one boring and heartwood, if present, in the other split half or the other boring.

Borings showing depth of penetration of preservative and heartwood, if applicable, should be photographed. Color pictures, color slides or the borings themselves shall be submitted. Pictures or slides shall be taken with a scale as a background so that actual measured depth of penetration can be determined. Actual records showing penetration depth for each charge should also be submitted. All color slides, color photographs, cross sections and penetration records shall be identified by date, charge number, location, species and size.

Complete documentation of the test charges shall be submitted. Documentation may be in the form of the treating records, including recording charts. Documentation shall include test charge identification, location of treatment, date, species, preservative used, solution concentration, sizes treated, gauge and assay retention, the record of preservative penetration measured on borings taken from test charges, including sapwood depths, percent penetration of sapwood, where applicable and the treating cycle for each test charge.

A table similar to the table for species in AWPA Standard U1 should be prepared. This should contain the following information:

1. The methods of conditioning material prior to treatment shall be fully described. This should include as applicable to the treatment and preservative, steaming time, air-drying, kiln drying, high temperature or low temperature, etc. Method of determining conditioning shall be described.
2. If incising is required to obtain treatment, incising shall be fully described as to pattern, depth of incision and type of tooth and incising density.
3. The treatment process used for test charges and to be used in actual production shall be described. (Full-Cell, Modified Full-Cell, Lowry Empty-Cell or Rueping Empty-Cell.)
4. The specific requirements as shown in AWPA Standard U1 shall be listed. They shall include, as applicable:

**Types of conditioning allowed:**

- Steaming—maximum temperature and duration
  - vacuum
- Heating in preservative—maximum temperature and duration
- Incising—required or not required

**Treatment:**

- Expansion bath—maximum temperature
- Final steaming—maximum temperature and duration
- Pressure—maximum and minimum

**Results of treatment:**

- Retention requirements
- Assay zone(s)
- Number of borings required
- Penetration requirements
- Preservatives to be used

A general discussion of the species for approval shall include the following:

Geographic regions from which the material tested was obtained. The variability, if any, that can be expected within the species from the same region or other region due to such factors as altitude and climate.

Additional pertinent technical data from other sources, if available, about the species proposed for standardization

should be submitted. If service records, stake tests or similar data are available, they should also be submitted.

Extensive data has been gathered over the years to establish the durability of softwood species treated with standard AWPA preservatives. Therefore:

1. Durability data is not required for AWPA standard preservatives of softwood species, except as noted in 3.
2. Durability data required for AWPA standard preservatives for all hardwood species.
3. Durability data required for AWPA standard preservatives if preservative penetration requirements are significantly different from common sapwood species requirement (2.5" and 85%) or common heartwood species requirement (0.4" and 90%).

**Criteria for Species Standardization**

1. Wood species identification shall be documented.
2. The wood species shall meet the retention requirements established for the preservative(s) and other related Standards on a continual basis.
3. The wood species shall meet the penetration requirements established in AWPA Standard U1 or data shall be presented, including field durability tests that support the penetration requirement different than those shown in AWPA Standard U1.