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Preservative Treatment for Millwork

1 Purpose

1.1 The purpose of this standard is to provide an internationally recognized specification for the preservative treatment of exterior wood and wood cellulosic composite millwork products and to serve as a basis of common understanding for producers, distributors and users. It is also intended to promote fair competition within the industry and to aid purchasers and users in obtaining properly and adequately treated millwork.

1.2 This standard was developed utilizing set minimum acceptable levels of performance. To meet this standard, each of the requirements listed in this standard must be met or exceeded. Each manufacturer and supplier is encouraged to exceed the quality standard set, to establish its own quality level and practices and procedures and to determine the appropriateness of their products for specified uses and application. Meeting the minimum requirements of this standard is not a substitute for testing each specific product application and does not guarantee performance. Compliance can be demonstrated by WDMA Hallmark Certification.

2 Scope

2.1 General. This standard covers requirements for preservative formulations applied with pressure or non-pressure methods as well as alternative methods meant to replace short term anti swell preservative formulations for wood and wood cellulosic composites and the requirements for treated exterior wood and wood cellulosic composite millwork to retard swelling due to changes in moisture conditions and to reduce attack by decay and stain organisms. It includes a voluntary method of identifying, for the consumer, millwork that has been treated in accordance with this standard. For the purposes of this standard, millwork includes exterior products and products with potential to contact a moisture source such as wood windows, sash, screens, window frames, blinds, shutters, wood stile and rail doors, door frame and jambs, mullions and other structural components, cut-to-length trim and machined knocked-down (K.D.) parts of those products.

2.2 Requirement for New Formulations, Materials or Treatment Methods. In order to account for new preservative formulations or alternative treatment systems being introduced, new wood species being used, or wood cellulosic composites being considered for millwork products, it is imperative that individual manufacturers and suppliers demonstrate that they have met each of the requirements stated within this standard to assure that products are properly and adequately protected. As noted, meeting the minimum requirements of this standard is not a substitute for testing each specific product application, especially where new formulations, materials or treatment methods are involved, and does not guarantee performance. Manufacturers utilizing new formulations, materials and treatment methods are not relieved of the requirements, under this standard, relating to establishing proof that demonstrates long-term performance.
2.2.1 Individual treatment system suppliers must show evidence that the substrate, recommended treatment process, and treatment formulation demonstrate long-term performance against product decay and other moisture related problems. The flow chart below shows the logic path within this document to demonstrate long-term performance.

- **Hardwood (Yellow Poplar)**
- **Softwood (Ponderosa Pine)**
- **White and brown rot for all**
- **Specie specific system should be tested with the specie to be utilized**

Test for threshold using soil block test method (WDMA TM-1)

- **Pass / Fail**
- **Fail**
  - **Pass / Fail**
  - **Fail Both = Stop**
  - **Pass**
  - **Fail Both = Stop**

Test for retention/penetration on Ponderosa Pine & Yellow Poplar

- **Establish L-Joint test on both Ponderosa Pine & Yellow Poplar**

Performance Demonstrated for Ponderosa Pine & Yellow Poplar

**Treatmenet Suppliers**

(WDMA IS-4 System Approval)

**Treatment End Users**

(Verification)

- Test for minimum retention/penetration on each specie - either hardwood or softwood values
- Soil block test on given specie

- **Pass / Fail**
- **Fail Both = Stop**
- **Pass**

Establish L-joint tests on given specie

- **Pass / Fail**
- **Pass**

2.2.2 This convincing evidence, for treatment suppliers, shall be demonstrated through completion and presentation of test results. This evidence must show compliance with the soil block test WDMA T.M.1, threshold retention, penetration test, swellometer test WDMA T.M.2, and outdoor field exposure tests. The outdoor exposure tests may include L-Joint tests AWPA E-9®, AWPA stake tests, fungal cellar tests, and other procedures recognized by WDMA. Required tests for approval are established in Section 7 of this standard.
3 General Properties for Preservatives or Alternative Treatment Systems

3.1 General Properties. The preservative formulation used on any millwork product designated as having been treated in accordance with this standard must contain a wood preservative registered for use in the United States by the Environmental Protection Agency under the latest revision of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Alternative systems must also be registered with EPA in accordance with FIFRA or have a third party legal review demonstrating the FIFRA does not apply. In Canada, wood preservatives are required to be registered under the Pest Control Products Act and have a registration number from Health Canada.

3.1.1 The treating formulation shall not objectionably discolor wood, shall not cause objectionable surface residue, nor have any objectionable odor. Also, when properly treated, the treated wood shall be compatible with other materials used in the fabrication of the treated product with a recommendation of percent dry required from the preservative manufacturer.

3.1.2 The treating formulation and treated wood material shall be stable at normal manufacturing conditions and shall not separate or precipitate components which will adversely affect the appearance, the effectiveness of the formulation or treated material or the ability to finish the treated product.

3.1.3 When the treating system is properly applied, it shall effectively retard the formation of stains, decay, mold, insects and swelling that would adversely affect the appearance and/or serviceability of the millwork.

3.1.4 Termite Resistance – If additional levels of protection are required to resist termite and insect attack, termite resistance shall be tested in accordance with AWPA E-1©.

3.1.5 Mold and Mildew Resistance - If additional levels of protection are required to prevent mold and mildew, mold and mildew resistance shall be tested in accordance with AWPA E-24©.

4 Requirements for Preservatives or Alternative Treatment Systems.

4.1 General. Millwork products complying with this standard shall be treated with a WDMA approved wood treatment system with the appropriate process conditions and can be applied or incorporated by dip, spray, flood, vacuum, pressure or any other method that conforms to the requirements of this Standard.

4.2 Preservative Requirement. The ability of all treatment systems to retard or resist decay shall be evaluated according to the latest published version of WDMA T.M.1.

4.2.1 For parts machined before treatment. The decay threshold concentration Method “A” for the treatment system shall also be calculated and reported. The report shall include at least two data points above and below the threshold.
concentration. Treatment systems that are biocidal based shall also be tested using method B. The soil block weight loss results for the preservative system shall be lower than 5% at the specified threshold value.

4.2.2 **For parts machined after treatment.** The decay threshold concentration Method “A” for the treatment system shall be calculated and reported. The report shall include at least two data points above and below the threshold concentration. The soil block weight loss results for the preservative system shall be lower than 5% at the specified threshold value.

4.3 **Swell Resistance Requirements.** The short term anti swell effectiveness of all treatment systems shall be evaluated according to the latest published version of WDMA T.M.2. The effectiveness of the treatment system shall not be less than 55%.

4.4 **Penetrability Requirement.**

4.4.1 **For parts machined before treatment.** The penetrability of wood preservatives applied after machining shall be determined by analysis of the end grain of the treated millwork part. The maximum depth of penetrations at or above the method detection limit for the analytical method used shall be determined and reported. The active ingredient(s) of the treating formulation shall be present at or beyond a depth of 0.20 inch (5mm).

4.4.2 **For parts machined after treatment.** The penetrability determination for systems in which parts are treated prior to machining shall be combined with the retention determination in Section 4.5. Samples shall be prepared according to WDMA T.M.13 and tested with an appropriate method for the detection of the active preservative(s).

4.5 **Retention Test.** The concentration of the preservative(s) for systems treated after machining shall be sampled at the outer 0.125 inch (3 mm) of the treated part and shall be above threshold levels determined by the TM 1 soil block test method A. The retention for systems in which parts are treated before machining shall be at the core of the test part and shall be above threshold levels determined by the TM 1 soil block test method A. Samples shall be prepared according to WDMA T.M.13 and tested with an appropriate analytical method for the detection of the preservative(s) or measurable performance indicator. Measurable performance indicators require demonstration of the relationship between the indicator and measured performance.

5 **Quality Assurance of Treatment**

5.1 **Certificate of Analysis -** Individual preservative formulations, treated wood materials and cellulosic composite materials with treatment incorporated into the process shall contain the specified ranges of the preservative, other measurable performance indicators, and/or water repellency agents to enable the end user to meet the requirements of Sections 3 and 4 of this document.
5.2 **Weekly Check of Treatment Cycle.** Individual treatment cycles, and composite manufacturing treatment process, shall be inspected at least once a week to make certain that millwork products are exposed to the preservative formulations for the specified times and process conditions. Processes in which parts are intended to be machined after treatment, composites with integral treatment, and other treatment processes with high levels of automation shall be reviewed to determine if increased cycle monitoring frequency is required.

5.3 **Weekly Check of Treating Formulation.** The treating solution shall be analyzed at least once a week to ascertain that its preservative formulation conform to a composition that meets the requirements established in Section 6.2 of this standard. Systems that regularly need significant adjustments to balance use formulation should be monitored more frequently.

5.4 **Semi-Annual Check of Treating Process.** Each unique treatment process shall be tested semi-annually using parts, sampling, and analysis conforming to WDMA T.M.13 to demonstrate conformance to Sec 4.4 and 4.5 of this standard.

  a.) The treating process shall then be verified at least once per week, in accordance with Sec 5.2 to ensure that the critical steps identified in the initial qualification (tested semi-annually) are within tolerance (i.e. line speed, submersion time, vacuum pressure, nozzle orientation etc…).

5.5 **Retreatment.**

  5.5.1 For parts machined before treatment. Millwork components which have been treated in conformance with this standard but which have been subsequently refabricated in the plant by cutting, plowing, boring or trimming, shall be retreated by the manufacturer by treating all cut surfaces with a short term anti-swell preservative which fully complies with this standard. Millwork treatment systems designed to treat parts before machining are excluded from component retreatment. Exclusions need to be supported by third party analytical testing using recognized test methods showing that the active molecule and water repellent agent are present at adequate levels.

**Note:** *The purchaser should also be advised to treat all such cut surfaces refabricated in the field by giving them a treatment of water-repellent preservative before final assembly or installation.*

  5.5.2 For parts machined after treatment. Millwork treatment systems designed to treat parts before machining are excluded from component retreatment. Exclusions need to be supported by third party analytical testing using recognized test methods showing that the active molecule and short term anti-swell agent are present at adequate levels.
6 Methods of Testing

6.1 Evaluation of Preservatives. A preservative shall be evaluated in accordance with the latest edition of WDMA T.M.1. Prepare a minimum of 5 samples.

6.2 Preservative Concentration Analysis. Preservative formulations shall be tested for active ingredient(s) in accordance with the appropriate analytical tests approved by the American Wood Preservers Association (AWPA) or a test method recognized by WDMA. A precision and accuracy statement is required for each active molecule and analytical method used.

6.3 Swellometer Test. The swell resistance evaluation of the treating formulation or system shall be determined in accordance with the latest edition of WDMA T.M.2. Prepare a minimum of 5 samples.

6.4 Penetrability and Retention Test. Wood samples shall be prepared as outlined in WDMA T.M.13. Wood cellulosic composites with the active ingredient incorporated by the manufacturing process and parts treated prior to machining require test data showing uniformity of treatment. Alternative sample plans can be used for composites and pressure treated parts, but the alternative plans should be representative of the material to be used in production. Each sample shall be prepared from the specific material (wood species, composite, etc.) intended for end use (exterior millwork product). When wood species are used, samples shall be free from knots and excessive resins and show no visible evidence of infection by mold, stain or wood destroying fungi; nor over-absorbent areas commonly referred to as sinker stock. Prepare a minimum of 5 samples for each test.

6.4.1 The analytical method used for determining preservative retention shall be appropriate for the detection of the active ingredient(s) or measurable performance indicator.

6.4.2 Analysis shall show the presence of active ingredient or measurable performance indicator in the appropriate locations according to the requirements of Sections 4.4 and 4.5 of this standard.

6.5 Field Exposure Testing

6.5.1 A number of tests have been developed to show the long-term performance of treated wood. Acceptance of data from field tests will be based upon the severity of exposure, the length of exposure and the degradation. Reported information shall be equivalent to that shown in AWPA E-9©.
6.5.2 Field Exposure Test Requirements. The field exposure test (L-joint test) should have a minimum of one exposure site. The site should be in a severe climate with a climate index rating of 60 or greater in the USDA Forest Products Laboratory Wood Handbook. The L-joint samples must be rated each year. The test should be conducted according to AWPA E-9©. Results shall be reported in the 10 - 0 format as specified in AWPA E-9©. Readings taken in another format and converted should be noted. The use of 5% penta as a positive control is recommended. Lap joint (AWPA E-16©) testing can be used when L-joints are not possible based on material. Samples also can be tested and evaluated using AWPA E-18©.

A formulation is required to have a minimum performance that is statistically better than the untreated controls placed at the same time and in the same location. Statistically better shall be determined by a two-tailed t-test with a 90% confidence level. The untreated controls must be rated at an average of 6 or less on a scale of 10 – 0 for the reported t-test comparison. This level of performance is a minimum performance level that shall be achieved by a preservative formulation.

7 Approval Procedures

7.1 Protocol for Approval – All wood or cellulosic composite treatment systems claiming decay resistance and anti swell properties require review. Third party testing is required for all data submitted for the requirements listed in the table below. This section defines the test methods and minimum requirements for materials, treatment formulations and performance testing for window and door products. Meeting the minimum requirements of the standard does not guarantee approval or guarantee acceptance by member companies. Materials, products or designs qualified for use must be evaluated in accordance with each company’s own material specifications and quality requirements.

7.2 System Approval. System approval shall be granted upon completing the requirements of Sections 3, 4 and 6.1 – 6.4.2 of this standard and presenting them. Formulation approval is good for five years after which reaffirmation are required prior to the expiration date. Treating formulation requirement summary, as follows, is required to be completed and presented.

7.3 Performance Approval. Performance approval shall be granted upon acceptance of outdoor field exposure test (see Section 6.5) results that demonstrate long-term performance of the preservative treating system. Performance approval is granted after the evaluation of year five field exposure data. Template below must be submitted for performance approval. Reaffirmation is required every 5 years. Manufacturers can satisfy the 5-year reaffirmation requirement by certifying that the formulation has not changed.
## WDMA I.S. 4 Treating System Approval Requirements Summary

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Requirement</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.</td>
<td>EPA registration.</td>
<td>Statement of registration number. Required upon submission.</td>
<td></td>
</tr>
<tr>
<td>3.1.1</td>
<td>System does not discolor or leave a residue.</td>
<td>Statement of observations regarding such.</td>
<td></td>
</tr>
<tr>
<td>3.1.1</td>
<td>Treated material must be compatible with other materials used in window manufacture.</td>
<td>Statement of observations regarding such. Statement of the percent dry to go to the next process.</td>
<td></td>
</tr>
<tr>
<td>3.1.2</td>
<td>Formulation and treated material must be stable in manufacturing environment.</td>
<td>Statement of tests to confirm compliance.</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Certificate of Analysis (COA).</td>
<td>Should include data on the content of preservative and short term anti swell agent as applicable</td>
<td></td>
</tr>
<tr>
<td>4.2 and 6.1</td>
<td>WDMA TM 1 Soil Block Test.</td>
<td>&lt; 5% weight loss, and report threshold concentration. For both hardwood and softwoods. Species specific system should be tested with the species to be utilized</td>
<td></td>
</tr>
<tr>
<td>4.3 and 6.3</td>
<td>WDMA TM 2 Swellometer Test.</td>
<td>≥ 55% effective on ponderosa pine.</td>
<td></td>
</tr>
<tr>
<td>4.4 and 6.4 - 6.4.2</td>
<td>A) Penetrability at 0.20. B) State maximum depth of penetration.</td>
<td>A) Presence shown at 0.20” (5 mm) Report analytical method used. B) Statement of maximum depth of penetration at or above method of detection limit.</td>
<td></td>
</tr>
<tr>
<td>4.5 and 6.4 - 6.4.2</td>
<td>Retention.</td>
<td>Greater than threshold as determined in Sec. 4.2 and report analytical method used with precision and accuracy.</td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Preservative concentration analysis.</td>
<td>Report concentration and approved method used with precision and accuracy statement.</td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Field Exposure Testing AWPA E-9©</td>
<td>Report of establishment test plots.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Third Party Results</td>
<td>Report Laboratories used.</td>
<td></td>
</tr>
</tbody>
</table>
L-Joint 5 Year Reporting Summary Sheet
Site 1 - Years of exposure _______

<table>
<thead>
<tr>
<th>Formulation</th>
<th>Exposure Site Index</th>
<th>Species</th>
<th>Average Decay Rating</th>
<th>Std. Dev.</th>
<th>Calculated t-value (two tailed)</th>
<th>Critical t(_{95}) value</th>
<th>P value</th>
<th>Significantly Different vs. Untreated Control?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulation X</td>
<td></td>
<td></td>
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<tr>
<td>Untreated Control</td>
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<td></td>
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<td></td>
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<tr>
<td>PCP Treated</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Site 2 – (Optional) Years of Exposure _______

<table>
<thead>
<tr>
<th>Formulation</th>
<th>Exposure Site Index</th>
<th>Species</th>
<th>Average Decay Rating</th>
<th>Std. Dev.</th>
<th>Calculated t-value (two tailed)</th>
<th>Critical t(_{95}) value</th>
<th>P value</th>
<th>Significantly Different vs. Untreated Control?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulation X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated Control</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PCP Treated</td>
<td></td>
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</tr>
</tbody>
</table>

7.4 **Evaluation of Treating Process.** The technical review sub-committee does not require approval of treating processes. It is the responsibility of the millwork manufacturer to conduct sufficient evaluations of all treating processes, and maintain records of such evaluations so as to demonstrate that treated millwork components:

a.) Contain adequate amounts of biocide agents by showing conformance to either Section 4.2, or Sections 4.4 and 4.5.
-And-
Meet the requirements of Section 4.3.

7.5 **Wood Cellulosic Composite Approval.** Approval of an integrally treated wood cellulosic composite material requires incorporation of active ingredients that meet the requirements of this standard with defined process conditions and measurement techniques. Approval of integrally treated composites shall be granted upon completing the requirements of Sections 3, 4 and 6.1 – 6.4.2 of this standard and Table 1 of WDMA IS-10. This approval is good for five years after which reaffirmation are required prior to the expiration date. Soil block or other accelerated decay test data are required for composites that claim preservative treatment is not necessary. Long-term weathering and field exposure data, Section 6.5, is required for integrally treated composites for performance approval. Composites that are treated after manufacture by preservatives are considered new wood species and should follow the flow diagram outlined in 2.2.1.
## WDMA I.S. 4 Composites with Active Incorporated Treatments
### Approval Requirements Summary

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Requirement</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>EPA registration.</td>
<td>Statement of registration number. Required upon submission.</td>
<td></td>
</tr>
<tr>
<td>3.1.1</td>
<td>Formulation does not objectionably discolor or leave a residue.</td>
<td>Statement of observations regarding such.</td>
<td></td>
</tr>
<tr>
<td>3.1.1</td>
<td>Composite must be compatible with other materials used in window manufacture.</td>
<td>Statement of observations regarding such. Statement of the percent dry to go to the next process.</td>
<td></td>
</tr>
<tr>
<td>3.1.2</td>
<td>Composite must be stable in manufacturing environment.</td>
<td>Statement of tests to confirm compliance.</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Certificate of Analysis (COA).</td>
<td>Should include data on the content of preservative and short term anti-swell agent as applicable.</td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Weekly check of composite manufacturing &amp; treatment processes.</td>
<td>Statement of inspection once a week, to be certain of composite formulations, process conditions, and specified times.</td>
<td></td>
</tr>
<tr>
<td>4.2 and 6.1</td>
<td>WDMA TM 1 Soil Block Test.</td>
<td>&lt; 5% weight loss, and report threshold concentration. For composite material, the species specific system should be tested with the species to be utilized.</td>
<td></td>
</tr>
<tr>
<td>4.3 and 6.3</td>
<td>WDMA TM 2 Swellometer Test.</td>
<td></td>
<td>ASTM D1037</td>
</tr>
<tr>
<td>4.4 and 6.4 - 6.4.2</td>
<td>State maximum depth of penetration.</td>
<td>Statement of maximum depth of penetration at or above method of detection limit.</td>
<td></td>
</tr>
<tr>
<td>4.5 and 6.4 - 6.4.2</td>
<td>Retention.</td>
<td>Greater than threshold as determined in sec. 4.2 and report analytical method used with precision and accuracy.</td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Preservative concentration analysis.</td>
<td>Report concentration and approved method used with precision and accuracy statement.</td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Field exposure AWPA E-9©, L-Joint Test or AWPA E-16© or AWPA E-18©</td>
<td>Report of establishment test plots.</td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Third party testing.</td>
<td>Report Laboratories used. Confirmed twice a year.</td>
<td></td>
</tr>
</tbody>
</table>
8  **Nomenclature and Definitions**

8.1  The following definitions give the meaning of the trade terms used in this standard.

**Cellulosic Composites:** A composite whose ingredients include cellulosic elements. These cellulosic elements can appear in the form of, but are not limited to: distinct fibers, fiber bundles, particles, wafers, flakes, strands and veneers. These elements may be bonded together with naturally occurring or synthetic polymers. Also, additives such as wax or preservatives may be added to enhance performance. Refer to WDMA I.S-10 for further information on cellulosic composites.

**K.D. (knocked down):** Unassembled component parts of a finished product.

**Use concentration:** The concentration of the preservative in a ready-to-use preservative formulation as determined in accordance with Section 6.2.

**Short Term Anti Swell Agent:** 1. (Noun) Materials used in or on wood to retard the absorption of liquid water. 2. (Adjective) having the quality of retarding the absorption of liquid water by wood.

**Wood decay, mold and stain fungi:** A group of filamentous organisms which can degrade and/or discolor wood or cellulosic wood composites and thereby alter its mechanical or physical properties or appearance.

**Wood preservative:** 1. (Noun) A chemical that inhibits the growth of wood decaying and staining fungi and wood molds. 2. (Adjective) having the ability to inhibit the growth of wood molds and decay and stain fungi.

9  **Identification and Certification**

9.1  In order that the purchaser may be assured that millwork treated has been treated with a preservative in accordance with this standard, the treater may stamp treated products with the identification mark of any qualified testing and inspection agency based upon a certificate of inspection from such agency and a written declaration by such agency that the treated millwork complies with this standard. (See Hallmark Certification Program information on Page 15)

9.2  Grade marks, stamps and certificates issued by a qualified testing and inspection agency shall show (1) identification of this standard, (2) identification of the agency issuing the mark, stamp or certificate, (3) the identity of the plant to which they are issued, and (4) a declaration of compliance by that plant.

9.3  Architects, builders and owners who desire assurance of standard preservative treatment may include in their specifications a requirement that exterior wood millwork be treated in accordance with WDMA I.S.-4 and that it be certified or labeled as conforming thereto.
10 Referenced Documents

10.1 Copies of WDMA Documents may be obtained from:
Window and Door Manufacturers Association (WDMA)
401 North Michigan Avenue, Suite 2200
Chicago, Illinois 60611
Web site: www.wdma.com

WDMA T.M. 1, Soil Block Test Standard Method to Determine Preservative Effectiveness in Preventing Wood Decay.

WDMA T.M. 2, Test Method to Determine the Water-Repellent Effectiveness of Treating Formulations.

WDMA T.M. 13, Test Method for Preparing Retention and Penetration testing samples.

WDMA I.S.10, Testing Cellulosic Composite Materials for Use in Fenestration Products.

10.2 Copies of ASTM Documents may be obtained from:
ASTM International (ASTM)
100 Barr Harbor Drive
PO Box C700
West Conshohocken, Pennsylvania 19428-2959
Phone: 610-832-9585
Fax: 610-832-9555
E-mail: service@astm.org
Web site: www.astm.org


10.3 Copies of AWPA Documents may be obtained from:
American Wood Protection Association (AWPA)
100 Chase Park South, Suite 116
Birmingham, Alabama 35244-1851
Phone: 205 773-4077
Fax: 205 773-4075
E-mail: email@awpa.com
Web site: www.awpa.com

AWPA E-1, Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.

AWPA E-9, Standard Field Test for the Evaluation of Wood Preservatives to be Used in Non-Soil Contact.
**AWPA E-16**, *Standard Field Test for the Evaluation of Wood Preservatives to be Used Out of Ground Contact – Horizontal Lap Joint Method.*


**10.4** Copies of USDA FPL Documents may be obtained from:

**US Department of Agriculture (USDA) Forest Products Laboratory (FPL)**
One Gifford Pinchot Drive
Madison, WI 53726-2398
Phone: 608-231-9200
Fax: 608-231-9592
Email: mailroom_forest_products_laboratory@fs.fed.us
Web site: [www.fpl.fs.fed.us](http://www.fpl.fs.fed.us)

The Window Door Manufacturers Association has created the WDMA Water-Repellent Preservative Treatment for Millwork Hallmark Certification Program to certify the quality of exterior millwork products treated under the rigid requirements of WDMA I.S.4, "Industry Standard for Water-Repellent Preservative Treatment for Millwork." The program provides a quick and easy means of identifying exterior millwork products treated in conformance with this standard and verified through independent third-party inspection and other independent third party testing.

WDMA I.S.4 is referenced by HUD/FHA in their Minimum Property Standards and by many other government and private agencies in their construction specifications. These agencies recognize the WDMA Water-Repellent Preservative Treatment for Millwork Hallmark as proof of compliance with WDMA I.S.4.

Any manufacturer or distributor who treats wood millwork products and who can demonstrate conformance to WDMA I.S.4 is eligible to participate in the WDMA Water-Repellent Preservative Treating Certification Program, regardless of any affiliation with the association. Conformance is determined by in-plant inspection of the treating facilities and by the testing of water-repellent preservative formulations. Frequent unannounced inspections and periodic laboratory tests are conducted throughout the year to insure continued compliance to the requirements of the program.

Architects, specifiers and other users of exterior millwork products may be assured the products they use meet the rigid requirements of WDMA I.S.4 by requiring that those products bear the WDMA Water-Repellent Preservative Treatment for Millwork Hallmark. For full information about the WDMA Hallmark Certification Program contact:

Window and Door Manufacturers Association  
401 North Michigan Avenue, Suite 2200  
Chicago, Illinois 60611  
Phone: 312 213-6802  
Web Page www.wdma.com