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## ***ALL BARRIER PROTECTION SYSTEMS***

Jurisdiction: AWPAs Subcommittees P-3 and P-4

This Standard was adopted in 2007.

This Standard was developed by AWPAs Technical Committees in an open, consensus-based process. Any modifications, deviations, or exceptions to this Standard invalidate any references to this Standard and nullifies any statements of compliance with this Standard.

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### **1. Scope**

1.1 This Standard covers barrier protection systems used to augment preservative treated wood and wood based components for ground contact uses, such as posts, poles, piling and the like. The barrier system protects the decay and termite susceptible portions of the underlying wood member. Barrier protection systems are made of impermeable, weather resistant materials and are permanently affixed to the wood.

### **2. General Requirements**

2.1 Barrier systems are impermeable, weather resistant boots or sleeves with the properties and performance specified in this section.

2.2 Boots or sleeves shall have a weather seal at the top and be adhered or otherwise permanently affixed to the wooden members or other means shall be used to prevent slippage of the post from the barrier system.

2.3 Polyethylene geomembranes used for boots and sleeves shall have a minimum thickness of 0.012 in. (0.30 mm) and meet the specifications of ASTM D4801 for weather resistance. Other materials used for boots and sleeves shall demonstrate equivalent weather resistant performance and form a barrier between the treated wood and the surrounding soil.

2.4 Dynamic impact testing done by Section 4.2 shall show no punctures through the barrier.

2.5 Barrier preservative systems shall have performance equivalent to or better than a 7 rating (i.e. decay or termite attack of 10-30% of cross section) in field stake tests conducted using AWPAs E7 methodology. Acceptable alternate test methodologies are ASTM D1758 and EN252.

*NOTE 1: For wood preservatives and other systems rated by field stake tests, it is generally accepted that ratings of less than 7 denote the end of service life for wooden products installed in ground.*

2.6 The barrier system shall be designated by the time period rounded to the closest whole year that wood treated to the above ground retention appropriate to the specie and preservative and that has the barrier system gives equal performance to wood treated to in-ground contact retention levels that does not have the barrier system using test methodology specified in 2.5. A minimum of three years exposure data is necessary.

*NOTE 2: For example, a barrier system with 64 months of satisfactory test documentation would be denoted as a "Five Year Barrier System".*

2.7 Termite resistance shall be documented for all barrier systems using D3345, AWPAs E1 or equivalent test methodology. The tests shall be judged acceptable if untreated southern pine controls have >20% weight loss and the wood with barriers has <2%. In addition, there can be no holes penetrating the barrier.

### **3. Treatment**

3.1 Barrier systems may be used with wood members treated with appropriate preservatives and processes detailed in AWPAs standards. Acceptable preservative systems are listed in Section 6.

3.2 Boots or sleeves shall be preformed and applied to the wood so that the wood is solidly encased. The manufacturing process shall be done under controlled conditions to ensure proper performance of the barrier system.

### **4. Results of Treatment**

4.1 Performance – Specify the barrier system boot or sleeve by designation of its years of performance per Section 2.7.

4.2 Dynamic Impact Performance – Three specimens of nominal wood 4 by 4 inch (100 by 100 mm) booted material shall be conditioned for four hours or more at room temperature. The specimens shall be tested with a Gardner Impact Tester or equivalent using a 2.2 pound (1 kg) impact load and an impactor with a flat impact end with cross-sectional areas of 0.15 square inch (100mm<sup>2</sup>). The impactor shall be released from a height of 4.9 inches (125 mm). The test shall be repeated five times on each specimen for a total of 15 impacts. The specimens shall then be visually examined for punctures.

4.3 If testing specified in Section 2.5 is done with retentions less than that designated for UC4A and performance of the material with the barrier system is satisfactory per Sections 2.5 and 2.7, then retentions designated for UC3B may be used with the barrier system.

### **5. Quality Assurance of Treatment**

5.1 Boots or sleeves shall be inspected by an independent third party inspection agency to ensure consistent product quality.

### **6. Preservatives**

6.1 The preservatives used shall be listed in AWPAs Standard P1/P13, P5 or P8.