



909 West Vista Way
Vista, California, 92083
760.732.5826 phone
800.516.1349 fax
www.ecob.net

Eco Red Shield™ Wood Specification

OVERVIEW

Eco Building Products, Inc. maintains an Engineering Services Report (ESR# 3255) from the ICC Evaluation Service (ICC-ES), providing evidence that Eco Red Shield™ meets building code requirements for wood ingesting organisms including Formosan termites and Wood Rot-Decay. In addition Eco Red Shield offers value added mold and fire inhibitors. Eco Red Shield shall be used for all horizontal and vertical framing members, above ground use attached to concrete, including dimensional framing lumber, sheathing, engineered wood components (EWP) and other wood construction. AWWPA use categories UC1, UC2 & UC3a – Not AWWPA Standardized.

Eco Red Shield™ maintains wood fiber strength in comparison to typical pressure treated lumber with no negative effects or reduction in strength values. Eco Red Shield products are;

- Non-corrosive to the elements, fasteners or truss plates,
- Eco-friendly and non-toxic to installers, please maintain standard wood dust warnings,
- Inhibits the growth of surface mold and release of mycotoxins,
- Contains Value Added Fire Inhibitors (Class “A” E84 Extended Doug Fir Dimensional)
- Serves as a good prime coating for moisture protection
- Accepts paints and stains better than regular untreated lumber
- Contamination free when disposed in land fills

Eco Red Shield™ lumber provides a 10 year limited warranty on all coated members. In accordance with ICC-ES Acceptance Criteria AC433 and represented by Eco Building Products Engineering Services Report ESR- 3255.

Note: The ICC-ES Evaluation Report ESR-3255 verifies that Eco Red Shield Wood Protection Coating was evaluated for decay resistance above ground use and termite resistance including Formosan termites. The ICC-ES did not evaluate Eco Red Shield products for mold or fire inhibition properties.





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ICC Section: 05 06 83 – Shop Applied Wood Coatings

PART 1 - GENERAL

1.1

SUMMARY

- A. Factory-applied fungal decay, termite resistant, mold and fire inhibitor coating for wood, including dimensional framing lumber, sheathing, engineered wood components and other wood construction, not constantly exposed to weather.
- B. Related Sections: Section(s) related to this section include:
 - 1. Rough Carpentry: ICC Division 6 Rough Carpentry Section.
 - 2. Finish Carpentry: ICC Division 6 Finish Carpentry Section

1.2

REFERENCES

- A. **American Wood Protection Association (AWPA):**
 - 1. AWPA Standard E1-09, Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.
 - 2. AWPA Standard E10-09 Standard Method of Testing Wood Preservatives by Laboratory Soil-Block Cultures
 - 3. AWPA Standard E12-08 Standard Method of Determining Corrosion of Metals in Contact with Treated Wood.
 - 4. AWPA E21©, Standard Test Method for the Evaluation of Preservative Coating for Lumber and Timbers Against Subterranean Termites in Above-Ground, Protected Applications (UC1 and UC2)
- B. **ASTM International (ASTM):**
 - 1. ASTM D 3273-00 (2005), Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber or equivalent.
 - 2. ASTM D5590 - 00(2010) Standard Test Method for Determining the Resistance of Paint Films and Related Coatings to Fungal Defacement by Accelerated Four-Week Agar Plate Assay
 - 3. ASTM D 3345-74 (1999), Standard Test Method for Laboratory Evaluation of Wood and Other Cellulosic Materials for Resistance to Termites
 - 4. ASTM E 84-09 (UL723) - Standard Test Method for Surface Burning Characteristics of Building Materials.



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5. ASTM D198 - 09 Standard Test Methods of Static Tests of Lumber in Structural Sizes
6. ASTM D5116 TVOC, Formaldehyde and Aldehyde emission level testing in accordance with industry standard protocols.

C. International Code Council-Evaluation Services

1. ICC-ES Acceptance Criteria for Liquid Borate Fungal Decay and Termite-resistant Coating Applied to Wood Members, Subject AC433-0612-R1, Updated June 2012.
http://www.icc-es.org/criteria/dsp.cfm?ac_code=AC433

D. One Hour Fire Rated Dimensional Lumber Listing (Douglas Fir Only)

<p>Ratings: The following outlines Eco Red Shield™ product test results determined in accordance with the noted standards in accordance with ASTM E84 extended 20 minutes, UL 723 extended 20 minutes, NFPA 255 extended 20 minutes, UBC 8-1 extended 20 minutes, and ASTM E2768.</p> <p>Eco Red Shield™ Over Douglas-Fir Dimensional Solid Sawn Lumber:</p>				
LUMBER PRODUCTS	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX	FLAME FRONT	MIIMUM COATING COVERAGE
2x2, 2x4, 2x6, 2x8, 2x10, 2x12, 4x4 Sizes	Maximum 15	Maximum 15	< 10.5 ft.	11.5 grams/ft ²

(Eco Red Shield Fire Retardant Coatings Test Results per [QAI Listing #B1053-1](#))

Section 2303.2 of the IBC states in its entirety the following:

1. “2303.2 Fire-retardant-treated wood. Fire-retardant-treated wood is any wood product which, when impregnated with chemicals by a pressure process, or other means during manufacture, shall have, when tested in accordance with ASTM E 84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 10 1/2 feet (3200mm) beyond the centerline of the burners at any time during the test.” *See test results above captured in red.
2. Eco Red Shield lumber coatings is recognized as a treatment process under the “**or other means during manufacture**” clause of IBC 2303.2, Furthermore, IBC 2303.2.1 demonstrates this fact by providing specific details applicable to pressure treatment processes.
 - a. “2303.2.1 Pressure process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under pressures not less than 50 pounds per square inch gauge (psig) (345 kPa).”
3. IBC Section 2303.2.2 provides strict guidance governing specific details for “**Other means during manufacture**” which is applicable to Eco Red Shield lumber coatings.



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- a. 2303.2.2 Other means during manufacture. For wood products produced by other means during manufacture, the treatment shall be **an integral part of the manufacturing process of the wood product**. The treatment shall provide permanent protection to all surfaces of the wood product. under strict third party inspections and application of the ECOB wood coatings – AF21, DOT Wood Preservative and WoodSurfaceFilm™ process governed by applicable third-party testing (QAI), required audits and approved Quality Control Program.

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide decay resistant, mold resistant, termite resistant (Formosan), fire inhibitor (Class "A") coating which will perform in accordance with manufacturer's stated performance criteria without defects, damage or failure.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's descriptive data and test results for treated products in accordance with ICC-ES Acceptance Criteria AC433 demonstrating full compliance as stated with an Engineering Services Report.
- B. Manufacturers Engineering Services Report (ESR – 3255)
- C. Report can be found at http://www.icc-es.org/reports/pdf_files/ICC-ES/ESR-3255.pdf
- D. Eco Red Shield Fire Retardant Coatings Test Results per [QAI Listing #B1053-1](#)

1.5 QUALITY ASSURANCE

- A. Wood Coating Plant Qualifications: Wood coating plant experienced in performing work of this section, under Quality Auditing Institute - QAI program, which has specialized in the coating of wood similar to that required for this project and licensed by coating manufacturer.

1.6 DELIVERY, STORAGE & HANDLING

- A. General: Comply with ICC Division 1 Product Requirements Sections.
- B. Storage and Protection: Store materials protected from exposure to prolonged harmful weather conditions and at temperature conditions recommended by manufacturer.
- C. Protect treated wood from damage during construction.



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1.7 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under the Contract Documents.
- C. Warranty Period: Twelve Months (12) exposed to the elements in a vertical framed state and an additional Ten (10) years commencing on Date of Substantial Completion.
- D. Further details can be viewed and/or downloaded from the Manufacturer's web site at [http://www.ecob.net/ cms/userfiles/0912121059ECOB-WarrantyRevD.PDF](http://www.ecob.net/cms/userfiles/0912121059ECOB-WarrantyRevD.PDF)

PART 2 - PRODUCTS

2.1 DECAY RESISTANT, TERMITE RESISTANT, MOLD RESISTANT, FIRE INHIBITOR COATING (Eco Red Shield™)

- A. Manufacturer: Eco Building Products, Inc.

Contact: 909 West Vista Way
Vista, CA 92083 USA
Phone: 760.732-5826
Fax: 760.659.7730
Email: info@ecob.net Web: www.ecob.net

- B. Substitutions: No substitutions permitted.
- C. Coating Chemicals: Proprietary broad-spectrum anti-fungal, anti-mold, anti-termite and fire inhibitor chemicals registered with EPA where/when applicable. Finished products are sold under the EPA Treated Article Exemption in 40 CFR 152.25(a)
- D. The scope of this document is for insertion into a section of generic specifications or generic/ proprietary specifications covering rough carpentry to include preservative coated wood.
- E. Eco Red Shield meets building code requirements for AWWA use categories UC1, UC2 & UC3a as direct substitute for traditional pressure treated lumber providing resistance for wood ingesting organisms including Formosan termites and Wood Rot-Decay in above ground use – Note not AWWA standardized.



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PART 3 - EXECUTION

3.1

INSTALLATION

- A. Compliance: Comply with manufacturer's MSDS, including product technical bulletins, for installation. Protect treated wood surface from damage during construction.
- B. End cuts do not require additional coating. The Manufacturer recommends that all exposed end cuts where water wicking can occur or potential exposure to the elements may be treated with Eco Building Products, End Cut Sealer.
- C. All other normal precautions are taken as with non-treated lumber. No special requirements in order to install Eco Red Shield is specified other than stated in manufacturer's warranty or treated article MSDS. Please maintain standard wood dust warnings as required by CA. Prop 65.

Part 4 - Product Endorsements/Approvals

GREENGUARD Indoor Air Quality Certified®

GREENGUARD GOLD

Eco Red Shield has achieved GREENGUARD (Indoor Air Quality or Children & Schools) Certification and is verified to be formaldehyde free.

US Green Building Council (USGBC)

Simpson Strong-Tie, a leading manufacturer of anchoring, fastening systems and concrete repair, protection and strengthening products recognizes Eco Building Products, Inc.



Please contact a company representative to inquire how Eco Red Shield can qualify for LEED's credits.

"The GREENGUARD Indoor Air Quality Certified Mark is a registered certification mark used under license through the GREENGUARD Environmental Institute." Eco Red Shield is a registered trademark of Eco Building Products, Inc - 2015