



Selling Eco Red Shield™ Innovation and Proven Chemistry in Wood Preservation

Eco Red Shield FT™ - Fire Treated

Eco Red Shield AFL™ - Advanced Framing Lumber

Eco Red Shield SP™ - Sill Plate



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Chemistry, Science and Technology

The Chemistry Behind the Products

Environmental Tradeoffs

Application Technology – Chemistry and Technology Deliver a Superior Product



Proven Chemistry

- Eco Red Shield™ (ERS) has protected hundreds of wood structures and hundreds of millions of board feet of lumber without a single claim.
- Eco has retained only credible, ANSI certified labs and consultants to verify its claims and product performance.
- DRJ Engineering, itself an ANSI certified ISO/IEC 17065 Accredited certification body, has certified Eco Red Shield's code compliance, QC and QA procedures, third party laboratories and engineering sources.



Eco Red Shield products are proprietary, environmentally friendly, aqueous-based polymer solutions.

- ERS treated wood products are encased in a semi permeable vapor barrier slowing transpiration. Each piece sits in a polymer envelope (patent pending Wood Surface Film Concentrate™). This reduces cupping and checking for lumber and LVL.
- All contain **mold, fungal decay and termite** inhibitors which remain on the surface with the polymer envelope.
- All contain borate (DOT) which **cannot** leach *out* due to the polymer envelope. In fact, the borate migrates into the wood fiber via diffusion as it follows moisture exiting the wood fiber.
- ERS AFL™ and ERS FT™ also contain fire Inhibitors which bind to the borate migrating into the wood fiber.



Innovation Never Stands Still – Recent Improvements to the Formulation Rev E(a)

- Increased leveling and flow control of Application Mixture – Rheology Modifiers
- Eliminate Separation of Concentrate – Surfactants / Rheology Modifications
- Improved pigment dispersion across various grains – Surfactants
- Modifications of surface tension – Surfactants
- Increased Permeability - Polymer
- Elimination of Borate (DOT) fallout – Suspension Medium
- Adjustment of PH Balance to Application Mixture – Revised Fire Inhibitor
- Increased Efficacy of Biocides / Mold Defense – Adjustment of PH Levels.
- Significantly extended the “Pot Life” of the application mixture – Adjustment of PH Levels



Competitive Environmental Trade-offs

- In wood preservation you have several choices when it comes to chemical composition. **You can use many, various hazardous chemicals in small amounts or you can choose to use less hazardous chemicals in greater amounts (Eco's approach).** The only issue with the latter scenario is cost. Using more chemistry increases cost but consumers should weigh this against the relative benefits of avoiding exposure to hazardous chemicals at any concentration level. Eco has chosen the path of providing the least toxic chemistry makeup while still providing efficacy as claimed. Eco has more PPM of active ingredients than all of the referenced products but encapsulates the chemistry with Eco's Wood Surface Film Concentrate™, that includes a polymer commonly used on baseball fields and horse tracks to reduce dust.
- Eco Building Products believes that when it comes to use categories, toxicity and cost effectiveness, Eco Red Shield is very clearly the best in class.



Eco Red Shield Application Process

- Eco blends/manufactures 2 (WSFC and FRC12) components at its HQ in Sorrento Valley, CA.
- Components are distributed to our Affiliate facilities on demand.
- Affiliates utilize the 2 components to blend our 3 different formulations via a stringent recipe regimen based on weight as UOM.
- Finished blends are tested against known specific gravity and acidity levels to insure the recipe was followed correctly.
- All formulations are applied via a linear process to a required minimum weight.



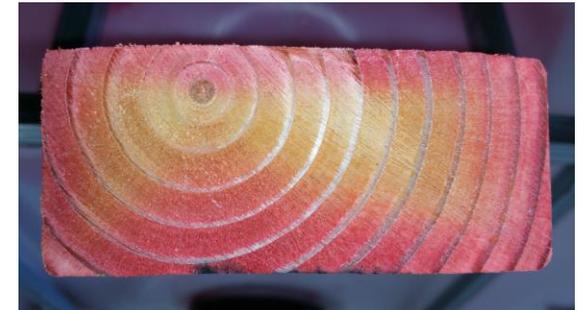
Chemistry Vs. Pressure Treating (Chemistry Vs. Brute Strength)

- No PT means no incising and no cell destruction = zero strength loss for all Red Shield formulations.
- Lumber, EWP, and panels are applied all six sides to a minimum weight spec and then enter a gas fired heat chamber which fully interlinks the polymers creating the semi-permeable vapor barrier envelope.
- The semi permeable barrier reduces moisture content changes in any 24 hour period by 50% which greatly reduces shrinkage, warping, twisting, etc.



Chemistry Vs. Pressure Treating

- ERS achieves diffusion (impregnation) with chemistry, NOT by pounding the wood fiber with pressure treating.
- In the presence of boron at a retention of 0.80 kg/m³ or greater, the yellow color of the curcumin reagent solution is turned red to magenta. The intensity of the red color increases with increasing loading of Boron in the sample.
- Testing was conducted according to A78-12 AMERICAN WOOD PROTECTION ASSOCIATION **STANDARD** - © 2015 All Rights Reserved
- STANDARD METHOD TO DETERMINE THE PENETRATION OF BORON CONTAINING PRESERVATIVES AND FIRE RETARDANTS



Green on the right KD on the left. 35 days treated – 16 days stickered, subjected to air circulation ambient air (60 to 80F) Equilibrium.



Eco Products

Tailored Offering

Features and Benefits

TERs (Technical Evaluation Reports)

Eco Red Shield and the IBC

Project Submittals and Local Jurisdictions



Eco has tailored Eco Red Shield into a suite of core products based on application and price point.

- Eco Red Shield SP™ (Sill Plate): protection from rot (fungal decay), **mold**, and wood ingesting insects including Formosan termites.
- Eco Red Shield AFL™ (Advanced Framing Lumber): Identical to SP in composition and performance with the addition of fire inhibitors.
- Eco Red Shield FT™ (Fire Treated Lumber): Identical to SP in composition and performance with sufficient fire inhibitors added to deliver a Class A Structural Rating on DF and Spruce dimensional lumber.



Features and Benefits

Features

Eco Red Shield (SP)

- WSFC™ + DOT

Eco Red Shield (AFL)

- WSFC™ + DOT + 20% FRC12™

Eco Red Shield (FT)

- WSFC™ + DOT + 40% FRC12™

Benefits

- Better wood performance – less warp, twist, splitting and cracking.
- Protection against mold, wood-rot, fungal decay and termite infestations.
- Semi-permeable barrier minimizes formaldehyde off-gassing. ESR treated substrate emits less formaldehyde than raw lumber.
- Inhibits the ignition and spread of fire providing precious minutes in to escape. I.e. Minutes Matter
- Provides Class A IBC and IRC certified compliance with DF.

WSFC™ and FRC12™ are patent pending.



What is a Fire Inhibitor?

- A single atom of oxygen is very reactive and is referred to as a free radical. If we can eliminate these free radicals or cancel them out we can remove the oxygen. When you remove oxygen you INHIBIT combustion therefore you can be classified as a “Fire Inhibitor”.
- Oxygen travels in pairs except when acted on by an outside force breaking the covalent bond thus creating a free radical. Something has to break the bond before we can isolate or capture this free radical (i.e. fire/combustion). The rapid heating of molecules toward fire point or an increased temperature causes the electrons in completed octets to change energy fields (go from a non-excited state to an excited state... $1s2s2p$ etc. etc.), once combustion occurs, the free radicals are formed (from the broken covalent bond) and this is where we insert the Fire Inhibiting technology. Once we isolate the free radicals, we extinguish the fire and all the excited molecules calm down and go back to their normal function (non-excited state).



Eco TERs (Technical Evaluation Reports)

- Equivalent to ERS – Both ICC and DRJ are ANSI Accredited Certification Bodies compliant with IBC Section 1703.
- Evaluation process is according to ANSI standards:
 - Test reports and/or test data from ISO/IEC 17025 accredited testing facilities or professional engineering sources
 - All engineering analyses performed by professional engineering sources
 - Our in-plant QC manuals and ISO/IEC 17020 third-party quality assurance (QA) inspection procedures
 - Installation instructions and associated application/installation details (i.e., CAD, Revit, etc.)



Eco TERs (Technical Evaluation Reports)

DrJ Technical Evaluation Report TO ASSIST WITH CODE COMPLIANCE

Eco Red Shield™ Fire Treated (FT) Wood Protection Coating

TER No. 1510-01

Eco Building Products, Inc.

909 WEST VISTA WAY
VISTA, CA 92083
(888) 733-7453
www.ecob.net

DIVISION: 06 00 00 – WOOD, PLASTICS, AND COMPOSITES

Section: 06 05 83 – Shop-Applied Wood Coatings
Section: 06 11 00 – Wood Framing
Section: 06 17 00 – Shop-Fabricated Structural Wood

Additional Listees:

Guthrie Lumber and Distribution Centers, Inc.
3300 Gonzales Street
Austin, TX 78702

Interstate and Lakeland Lumber Corporation
247 Mill Street
Greenwich, CT 06830

Northern Crossarm Company, Inc.
PO Box 34
Chippewa Falls, WI 54729

Rocky Mountain Wood Protection
5440 Franklin Street
Denver, CO 80216

Structural Technologies, LLC
126 South Lynnhaven Road
Virginia Beach, VA 23452

1. Product Lines Evaluated:

- 1.1. Eco Red Shield™ Fire Treated (FT) wood protection coating.
 - 1.1.1. Eco Red Shield™ (FT) is intended for use when fire-retardant

Issue Date: December 21, 2015
Subject to Renewal: January 1, 2017



This research report is reviewed and sealed by Ryan Dexter, P.E. of DrJ Engineering, LLC, as a specialty engineer.

Given that DrJ is both ISO/IEC 17065 accredited and a professional engineering company, DrJ's certification is comprehensive and fully compliant with IBC Section 1703. A seal by a professional engineer is typically sufficient for approval, as regulated by the state Board of Professional Engineers. As stated in the building code, where this report is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved. This allows DrJ to understand the code section in question and provide a timely code compliance cure.

For more information, contact DrJ at 608-310-6748 or djengineering.org/our-team

DrJ Technical Evaluation Report TO ASSIST WITH CODE COMPLIANCE

Eco Red Shield™ Sill Plate (SP) Wood Protection Coating

TER No. 1511-09

Eco Building Products, Inc.

909 WEST VISTA WAY
VISTA, CA 92083
(888) 733-7453
www.ecob.net

DIVISION: 06 00 00 – WOOD, PLASTICS, AND COMPOSITES

Section: 06 05 83 – Shop-Applied Wood Coatings
Section: 06 11 00 – Wood Framing
Section: 06 17 00 – Shop-Fabricated Structural Wood

Additional Listees:

Guthrie Lumber and Distribution Centers, Inc.
3300 Gonzales Street
Austin, TX 78702

Interstate and Lakeland Lumber Corporation
247 Mill Street
Greenwich, CT 06830

Northern Crossarm Company, Inc.
PO Box 34
Chippewa Falls, WI 54729

Rocky Mountain Wood Protection
5440 Franklin Street
Denver, CO 80216

Structural Technologies, LLC
126 South Lynnhaven Road
Virginia Beach, VA 23452

1. Product Lines Evaluated:

- 1.1. Eco Red Shield™ Sill Plate (SP) wood protection coating.
 - 1.1.1. The SP coating is intended for use where preservative treated lumber is required by the applicable code.

Issue Date: December 21, 2015
Subject to Renewal: January 1, 2017



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For more information, contact DrJ at 608-310-6748 or djengineering.org/our-team

DrJ Technical Evaluation Report TO ASSIST WITH CODE COMPLIANCE

Eco Red Shield™ Advanced Framing Lumber (AFL) Wood Protection Coating

TER No. 1511-10

Eco Building Products, Inc.

909 WEST VISTA WAY
VISTA CA, 92083
(888) 733-7453
www.ecob.net

DIVISION: 06 00 00 – WOOD, PLASTICS, AND COMPOSITES

Section: 06 05 83 – Shop-Applied Wood Coatings
Section: 06 11 00 – Wood Framing
Section: 06 17 00 – Shop-Fabricated Structural Wood

Additional Listees:

Guthrie Lumber and Distribution Centers, Inc.
3300 Gonzales Street
Austin, TX 78702

Interstate and Lakeland Lumber Corporation
247 Mill Street
Greenwich, CT 06830

Northern Crossarm Company, Inc.
PO Box 34
Chippewa Falls, WI 54729

Rocky Mountain Wood Protection
5440 Franklin Street
Denver, CO 80216

Structural Technologies, LLC
126 South Lynnhaven Road
Virginia Beach, VA 23452

1. Product Lines Evaluated:

- 1.1. Eco Red Shield™ Advanced Framing Lumber (AFL) wood protection coating.
 - 1.1.1. This product is intended for use when fire-resistant treated lumber is not required by the applicable code but an extra level of protection is desired.

Issue Date: December 21, 2015
Subject to Renewal: January 1, 2017



This research report is reviewed and sealed by Ryan Dexter, P.E. of DrJ Engineering, LLC, as a specialty engineer.

Given that DrJ is both ISO/IEC 17065 accredited and a professional engineering company, DrJ's certification is comprehensive and fully compliant with IBC Section 1703. A seal by a professional engineer is typically sufficient for approval, as regulated by the state Board of Professional Engineers. As stated in the building code, where this report is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved. This allows DrJ to understand the code section in question and provide a timely code compliance cure.

For more information, contact DrJ at 608-310-6748 or djengineering.org/our-team



This is how/where we fit into the IBC

- **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).

- **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.



This is how/where we fit into the IBC

- [IBC Section 104.11](#) and [IRC Section R104.11](#) ([IFC Section 104.9](#) is similar) state:
- **104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code. Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.



This is how/where we fit into the IBC

Definition of TREATED WOOD;

The 2012 IBC code was found to have conflicts (in red) which have been fixed in the IBC 2015 as follows (in blue):

[BS] TREATED WOOD. Wood ~~and wood-based materials~~ products that ~~use vacuum-pressure impregnation processes~~ are conditioned to enhance ~~fire-retardant~~ fire-retardant or preservative properties.

Fire-retardant-treated wood. ~~Pressure-treated lumber and plywood that~~ Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.

Preservative-treated wood. ~~Pressure-treated wood~~ Wood products ~~that~~ that, conditioned with chemicals by a pressure process or other means, exhibit reduced susceptibility to damage by fungi, insects or marine borers.



Project Submittals and Dealing With Local Jurisdictions

- Ideal scenario is to have Eco Red Shield (FT) specified on the plans or minimum of FRTW or “Equivalent” must be specified.
- **You can approach local municipality for acceptance. Submit TER and a small treated article demonstrating stamp. Municipalities do not “approve” products however they will tell you if they have objections for use.**
- If there are objections you have a technical team behind you at Eco to elevate the concern so we can assist in overcoming any issues.
- The difference between a TER and ICC-ES report? The ICC-ES reports are drafted based upon an Acceptance Criteria (AC) which are publically debated for approval. Drj provides a TER based upon product merits, third party testing and applications per the various sections of the IBC. Both the ICC and Drj are approved ISO 17065 governing bodies and each have the same power over building code specifications. Last Drj is also a licensed structural engineering firm and has WET Stamped our TER for use in all states. The ICC does not do this.



Project Submittals and Dealing With Local Jurisdictions

- Most critical aspect of acceptance is the product STAMP. Each board must bear the following stamp in order for easy acceptance from the local code inspector.



Eco Building Products, Inc.
ECO RED SHIELD™ - FT
DIMENSIONAL LUMBER DOUG FIR & SPRUCE (SPF)
INTERIOR USE ONLY

FLAME SPREAD INDEX 25	SMOKE DEVELOPED INDEX 25
---------------------------------	------------------------------------

Monitored by QAI
AA-723



US

Flame progress did not achieve 10.5 feet progression during testing to ASTM-E84 / ASTM-E2768 Extended 30 minutes duration.
Treatment Location: Doswell, Virginia
PRODUCT IS AIR DRIED AFTER TREATMENT

TER No. 1510-01





Marketing Support

AIA Campaign

Electronic Marketing

Social Media



Marketing Support

- AIA Training Campaign
 - ~ 630 Architects have been certified since last June.
 - 115 Architects in your desired trade area. (See list)
- Electronic marketing
 - Low cost but effective tool to drive awareness and make contact. (See page 24).
- Social media
 - A growing Eco community on Facebook and LinkedIn will drive awareness, SEO and traffic back to our Affiliates.
 - www.facebook.com/EcoBuildingProducts/
 - www.linkedin.com/company/eco-building-products-inc-8el-



AIA email campaign in process. Eco can tailor a campaign for your markets.

From the team at Eco Building Products, I want to take this opportunity to say "Thank you!"



Thank you for completing the AIA course!

Thank you for completing "Protecting Wood-Framed Structures & Topical Lumber Coatings (non-pressure process)." Eco Building Products is proud to partner with the AIA and Ron Blank & Associates in offering this important course.

ECO is the industry leader in developing environmentally friendly topical coatings that protect wood products against all four dimensions of risk: Mold, fungal decay, termites and fire. Years of third party testing and millions of board feet in place without a claim supports our pledge that you can specify Eco Red Shield with the utmost confidence.

Whether it is concern around mold and indoor air quality; the structural risks from fungal decay and or termite infestation or simply providing your building occupants valuable extra time to escape in case of fire, Eco Red Shield has a proven product that you can specify with confidence.

We believe there is a better way to protect the wood structures we design and build – we can build *safer and cleaner*.

Thanks again, and please do not hesitate to [contact us](#) if you have any questions.

Best regards,

Tom Comery
President and CEO
Mobile: 202.663.9199
www.ecob.net



**Season's Greetings from
Eco Building Products**

From our families to yours, we want to offer some warm wishes for the holidays.

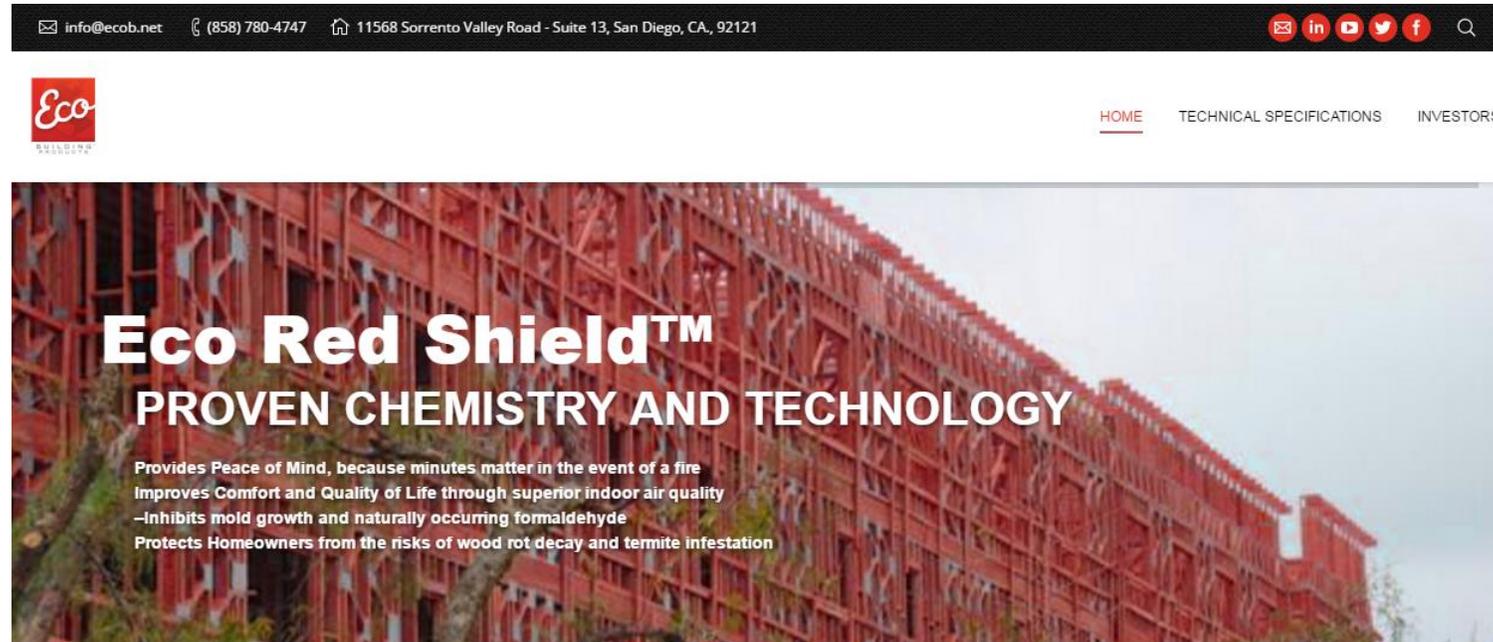
Sincerely,
Eco Building Products

[Eco Website](#)
Phone: 888-733-7453





New Website is generating traffic



Eco Red Shield SP™

(Sill Plate)

Protection from the harmful effects of mold, rot (fungal decay) and wood ingesting insects including Formosan termites.

Eco Red Shield AFL™

(Advanced Framing Lumber and Panels)

Identical to SP™ in composition and performance with the addition of fire inhibitors.

– **because minutes matter!**

Eco Red Shield FT™

(Fire Treated Lumber)

Identical to SP™ in composition and performance with sufficient fire inhibitors added to deliver a **Class A Structural Rating** on DF and Spruce dimensional lumber.



Competitive landscape

Koppers Perf. Chemicals formerly Osmose Wood Products	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
NatureWood®		✓		✓			ACQ
MicroPro® and MicroShade®		✓	✓	✓		✓	Copper Azole
AdvanceGuard®		✓	✓	✓		✓	DOT Pressure Treat
Hi-Bor®		✓	✓	✓		✓	DOT Hawaiian App
FirePro®					✓		PT Boron based
Lonza formerly Arch Chemicals Products	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
Wolmanized®			✓	✓			Copper Azole
Dricon®			✓	✓	✓		
FrameGuard® Total	✓	✓	✓	✓			DOT Imidacloprid
Wolman AG Wolmanized EraWood®			✓	✓			Uses Imidacloprid insecticide (nicitoid) cannot provide insecticide warranty with spray application

For this exercise, Eco-Friendly is defined by products meeting GREENGUARD® certification.



Lonza formerly Arch Chemicals Products							
	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
Wolmanized®			✓	✓			Copper Azole
Dricon®			✓	✓	✓		
FrameGuard® Total	✓	✓	✓	✓			DOT Imidacloprid
Wolman AG Wolmanized EraWood®			✓	✓			Uses Imidacloprid insecticide (nicitoid) cannot provide insecticide warranty with spray application
Hoover Treated Wood Products							
	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
Pyro-Guard®					✓		Pressure treated, up to 30% reduction in structural strength properties, requires carbon-coated steel fasteners.
Kop-Coat							
	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
TRU-CORE®	✓	✓	✓	✓		?	Using buffering system, low PPM of toxic actives coupled with heat.
Eco Building Products							
	Mold	Rot	Fungi	Termites	Fire Retardant	Eco-Friendly	Other/Notes
Eco Red Shield™ (Sill Plate)	✓	✓	✓	✓		✓	ESR-3255 approved for UC1,UC2,UC3a uses* - Hawaiian Approval
Eco Red Shield™ (Advanced Framing Lumber)	✓	✓	✓	✓	✓	✓	Value-Added Fire Resistance meets code for plate per ESR, full-framing applications.
Eco Red Shield™ (Fire Treated)	✓	✓	✓	✓	✓✓	✓	FRTW equivalent, meets code for plate per ESR, full-framing applications, Type II/IIIa&b/IVa&b construction



Addendums

Support Materials



Support Materials

- Mold – Encapsulates any existing surface growth, long term efficacy
- Fire Inhibitor – ASTM E84
- Wood-Rot, Fungal decay
- Termite – wood ingesting insects including Formosan termites.
- Tech Docs – Lab reports, etc. <http://www.ecob.net/index.php?p=products&id=75>
 - ESR 3255 TER1510-01 (FT) TER1511-09 (SP)
 - QAI B1053 TER1511-10 (AFL) <http://www.drjengineering.org/code-compliance/ters>
 - Eco Red Shield Wood Specification for Architects & Specifiers
<https://ecob.net/eco-red-shield-wood-specification-for-architects-specifiers/>
- The meaning of “environmentally friendly” “Virtually Zero VOC’s”.



Sales Brainstorming

- Make it a business – give it a P&L and performance management metrics.
- Leverage existing relationships
 - ERS FT™ for Type III construction
 - ERS AFL™ for Production Home Builders
- What can you do right now to sell ERS?
- Submit ERS FT™ as an FRTW equivalent to every Type III MF project you have pending
 - Download the TER @ <http://www.drjcertification.org/ter/2015/dec/eco-red-shieldtm-advanced-framing-lumber-afl-wood-protection-coating>
 - Submit to the architect of record for project approval and you should be good to go with their approval.
- Name 5 prospects that you can target next week.
- Stocking Dealer Program.