

### What are Extira panels?

- A treated wood composite panel product for non-structural applications for exterior and high moisture interior environments.
- Available in square cut panel dimensions of 49" x 97", 49" x 194" and 25" x 194".
- Available in thicknesses of 1/2", 3/4", 5/8", 1" and 1 1/4" (+/- 0.005").
- Sanded two sides (S2S) for a smooth, unprimed surface.

### What are the key benefits of Extira panels?

- Moisture, rot and termite resistant. Treated with zinc borate and manufactured with phenolic resins.
- One piece solid substrate – not laminated.
- No added urea formaldehyde.
- Made using sustainable materials and contributes to industry green building programs.
- 5-year limited warranty.

### What can I make with Extira panels?

- Any nonstructural paint grade application for exterior and interior use.
- Extira has been used for exterior millwork such as fluting, rosettes, dentil mould, raised panels, shutters; fenestration (door and window parts); exterior signage; some marine, landscape and nursery applications; underlayment for countertops and many other applications.

### How does Extira compare to MDF?

	EXTIRA	Typical MDF
<b>Application</b>	Exterior	Interior
<b>Composition</b>	Wood, phenolic resins, zinc borate, water repellent, and other ingredients. No added urea formaldehyde.	Wood, urea formaldehyde resin that may emit formaldehyde.
<b>Manufacturing Process</b>	Proprietary, patented steam injection technology using TEC™ manufacturing process.	Pressed between hot platens. Open process, no steam injection.
<b>Benefits</b>	Consistent density. Moisture, rot and termite resistant. Exterior performance.	Not uniformly dense throughout. No termite or rot protection. MR MDF offers moisture resistance for interior use only.
<b>Warranty</b>	5 years	30 days

- In internal CMI bucket testing, Extira panels exhibited substantially smaller edge cracks after exposure and air drying than Medex. Call the Extira Help Desk for test details at 1.866.382.8701.
- Caliper swell when saturated in water improves 1-1/2 to 5 times comparing Extira to MR grade and typical MDF.
- CMI manufactures another product, MiraTEC trim, using the same ingredients and manufacturing technology which has performed exceptionally well since 1998.

### How are Extira panels made?

- Wood fiber, phenolic resins, zinc borate and a water repellent are combined to form a thick fiber mat. Extira is 90% wood.
  - Zinc borate controls the growth of white and brown rot and other wood-destroying organisms. It is an EPA-registered biocide.
- The fiber mat is loaded into a sealed cavity.
- Steam is injected directly into the mat, making heat transfer uniform through the mat. This process is controlled by forced convection.
- Steam escapes the mat evenly from the center to the periphery of the board, improving board properties and allowing thicker board dimensions.
- This process contrasts with the slow, outside-to-inside temperature rise found in conventional MDF-type pressing.
- After cooling, Extira is sanded on both sides with a six-headed sander to reach thickness tolerances of +/-0.005".

### How is MDF made?

- Wood fibers are blended with resins (often urea formaldehyde resins) and formed into a mat.
  - No ingredients for moisture, rot or termite resistance are added.
- The mat is pressed between hot platens.
- Heat is transferred from the platens to the mat. This can be a slow process because air becomes trapped in the mat and moisture evaporates during this process. It also takes a long time to transfer heat to the center of the mat. Air and steam escape around the periphery of the mat. The temperature at the surfaces of the mat is greater than the core during the press cycle.
- The properties of the final product are influenced greatly by the final core temperature within the mat.
- Due to this process, the board is not necessarily consistent throughout all points.

### Are Extira panels a green product?

Yes. At the heart of all CMI products is a commitment to an environmentally responsible manufacturing process.



- Due to their physical composition, Extira panels are not subject to California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) 93120. This measure enforces limits on formaldehyde emissions. If they were subject to the ATCM rule, Extira panels would meet the specification for the designation "ultra low formaldehyde emitter."
- Through repeated testing by the Composite Panel Association (CPA), Extira panels have demonstrated formaldehyde emissions equivalent to background levels found in the environment.
- No old growth wood is used in the manufacture of Extira panels. They are made from wood that is of no commercial timber value and is the byproduct of other operations. This leftover wood is also detrimental to the overall vitality of the forest.
  - All wood comes from an area within a 200 mile radius of the Towanda, PA production facility.
  - CMI uses 100% northern hardwoods which includes maple, beech, oak and other species.
- Extira panels contribute to industry green building programs such as LEED® and the National Green Building Standard.™

### Do Extira panels contain urea formaldehyde?



- Extira panels have no added urea formaldehyde. This is certified by Scientific Certification Systems certificate number SCS-MC-01802. Emission levels of formaldehyde from Extira panels are equivalent to trace levels found in the environment.
- The manufacture of Extira panels utilizes only phenolic resins, which provide excellent durability and moisture resistance.

### What is zinc borate?

Zinc borate is an EPA-registered biocide. It is a wood preservative that provides protection from wood destroying organisms for wood composite materials. It is added during the manufacturing process to control the growth of white and brown rot decay fungi. Zinc borate is a broad-spectrum fungicide with no demonstrated adverse environmental effects.

### Why are Extira panels better than wood?

- Extira panels have stable pricing and availability.
- No knots or voids, therefore offering 100% yields.
- Resists checking, splitting and cracking.
- Environmentally responsible.
- Resists moisture, rot and termites.

**How are Extira panels similar to wood?**

Extira is 90% wood so it retains some of the same attributes. It handles and machines well.

**How can Extira panels be cut?**

Fine tooth handsaws or power saws with combination blades work best. CMI recommends carbide tipped blades. Cut into the face of the material. Extira can also be mitered for applications such as joints or column posts. Extira can be routed or shaped for a variety of molding patterns and will machine similarly to standard MDF.

**How can I fasten Extira panels?**

CMI recommends traditional fasteners, such as glue and adhesives. We recommend polyurethane-based adhesives. Some general guidelines: 1) Position nails no closer than 1/2" from the edge; 2) Drill pilot holes when putting a screw into the edge of the product. This is not necessary when you screw into the face. CMI does not recommend nailing into the edge of the product.

**How do Extira panels perform in laboratory testing?**

CMI conducted field tests for rot and termite resistance on Extira and southern yellow pine. The testing was performed by Louisiana State University in the swamps of southern Louisiana. Each test ran for 3 years, with observations recorded every six months.

**TERMITE RESISTANCE:**

Test standard: AWP A E7 – Standard Method of Evaluating Wood Preservatives by Field Tests with Stakes.

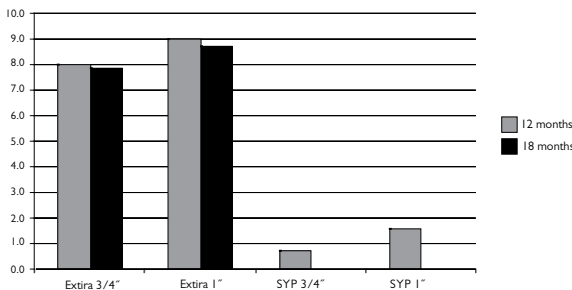
Test dates: June 2003 through June 2006.

Test variables: Extira 3/4" and 1".  
Southern Yellow Pine 3/4" and 1".

Rating scale: The rating scale is from 0 to 10, where a score of 0 represents complete failure and 10.0 represents no termite activity.

Test results: After 18 months of exposure, Extira panels showed less than 25% termite activity on both 3/4" and 1" samples. Over the same evaluation period, the Southern Yellow Pine was completely destroyed. Full test data for both 12 and 18 month observations are recorded below:

**TERMITE TEST:**



**ROT RESISTANCE:**

Test standard: AWP A E16 – Field Test for Evaluation of Wood Preservatives to be used Out of Ground Contact: Horizontal Lap-Joint Method.

Test dates: May 2003 through June 2006.

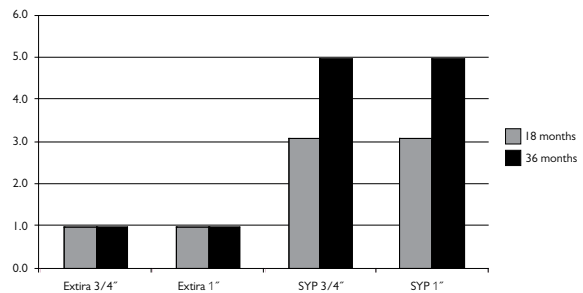
Test Variables: Extira 3/4" and Extira 1".  
Southern Yellow Pine 3/4" and 1".

Rating Scale: The test is rated on a 0-5 scale. A score of 0 indicates no evidence of rot and a score of 5 represents a total failure (eg. test sample was destroyed by rot). A score of 1.0 indicates that the sample shows trace attacks of rot, limited to superficial damage. Observations were recorded at the joints and laps (outside). Lap measurements are reported in this document.

Test results: After both 18 months and 3 years of exposure, Extira scored a 1.0 for both 4/4 and 5/4. A full breakdown of the observations follows.

After 3 years of exposure, the Southern Yellow Pine showed total failure, scoring 5.0 for both thicknesses tested. After 18 months, the Southern Yellow Pine received a rating of 3.1. A rating of 3.0 indicates moderate attack with softening of wood evident, consistent with rot decay in areas greater than 0.5" in<sup>2</sup>.

**ROT TEST:**



**THICKNESS SWELL**

As measured by ASTM D1037-99, Extira panels showed thickness swell approximately 40% less than MR 50 MDF. Moisture Resistant Grade 50 MDF has a maximum thickness swell of 5%.

**ACCELERATED AGING TEST**

As measured by ASTM D1037-99, Extira panels retained 90% of its original strength after the 6-cycle accelerated aging test. The accelerated aging test is a means of testing the durability of a product when it is submitted to seasonal changes. To do this, the product undergoes cycles of freezing, thawing, soaking, and heating to mimic conditions in areas of seasonal change in terms of humidity, temperature and moisture.

**Can I buy Extira panels machined or fluted?**

No. Extira panels are sold in unprimed, square cut panels only.

**Where can I buy Extira panels?**

For the distributor nearest you, visit [extira.com](http://extira.com) and access the distributor locator, or call the Extira Help Desk at 1.866.382.8701 or visit [extira.com](http://extira.com).

**How can I learn more about Extira panels?**

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