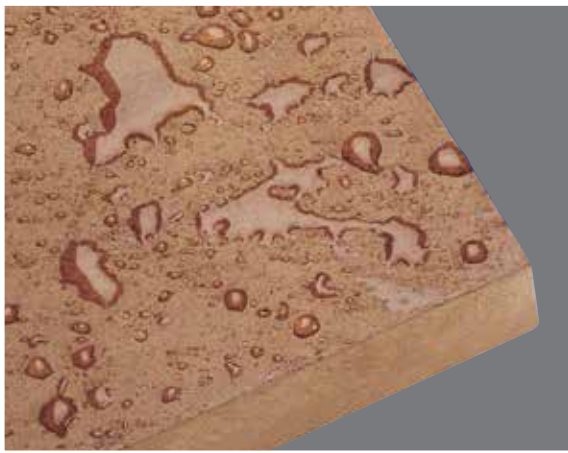


EXTIRA[®]

by JELD-WEN



FAQ: FREQUENTLY ASKED QUESTIONS



What are Extira panels?

- A treated wood composite panel product for non-structural paint-grade applications engineered for exterior use, including high moisture environments.
- Available in panel dimensions of 4' x 8', 4' x 16' and 2' x 16'.
- Available in thicknesses of 1/2", 5/8", 3/4", 1" and 1 1/4". Also, 7/16" and 11/16" are available by special order.
- Sanded two sides (S2S) for a smooth, unprimed surface; meets caliper requirements of +/- 0.005"

What are the key benefits of Extira panels?

- Easy to work with; can be carved, routed and machined.
- Resists moisture, rot, and termites. Outperforms MDF in accelerated weathering tests and engineered for exterior use.
- No added urea formaldehyde; made from sustainable materials.
- Class C fire rating; Flame spread 120; Smoke developed 95.
- 10-year limited warranty.



What can I make with Extira panels?

- Extira has been used for exterior millwork, door and window parts, signage, architectural components, underlayment for countertops and many other applications.
- Use for any non-structural paint-grade application for exterior and interior use, including high moisture environments.

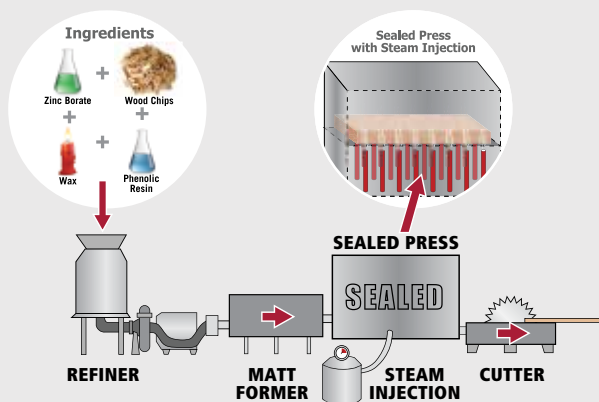


How does Extira compare to MDF?

	EXTIRA PANELS	TYPICAL MDF
Application	Exterior	Interior
Composition	Wood, phenolic resins, zinc borate, water repellent and other ingredients No added urea formaldehyde	Wood, urea formaldehyde resin May emit formaldehyde
Manufacturing Process	Proprietary, patented steam injection technology using TEC™ manufacturing process	Pressed between hot platens in an open press without steam injection
Benefits	Consistent density.-same density Moisture, rot and termite resistant Made for exterior performance	Not uniformly dense throughout No termite or rot protection MR MDF (moisture resistant MDF) offers moisture resistance for interior use only
Warranty	10 years	30 days

- In internal bucket testing, Extira panels exhibited substantially smaller edge cracks after exposure and air drying than Medex. For test details email extira-testdetails@jeld-wen.com
- Caliper swell when saturated in water improves 1-1/2 to 5 times comparing Extira to MR grade and typical MDF.
- MiraTEC trim is manufactured at the same facility in Towanda, PA, using the same ingredients and manufacturing technology developed in 1999, a proven performer.





How are Extira panels made?

- Wood fiber, phenolic resins, and zinc borate are combined to form a thick fiber mat. Extira is 90% wood.
 - Zinc borate is an EPA-registered mineral mined from the earth.
- 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 $\pm 0.005''$.

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 as it 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 environmentally friendly?

Yes, Extira panels are an environmentally friendly product.

- Made from sustainable materials: No old growth wood is used in the manufacture of Extira panels. They are made from wood that has no commercial timber value and is the byproduct of other operations.
- No added urea formaldehyde: This is certified by Scientific Certification Systems under certificate number SCS-MC-01802.
- Complies with CARB: Extira panels are acknowledged by the California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) 93120 to utilize exempt status ultra-low emitting formaldehyde (ULEF) resins.
- Contributes to green building programs: 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 under certificate number SCS-MC-01802. They are manufactured with environmentally preferable phenolic resins.
- Through repeated testing by the Composite Panel Association (CPA), Extira panels have demonstrated formaldehyde emissions equivalent to background levels found in the environment.
- The manufacture of Extira panels utilizes only phenolic resins, which provide excellent durability and moisture resistance.

Why are Extira panels better than wood?

- No knots or voids, therefore offering 100% yields.
- Resists checking, splitting and cracking.
- 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. Extira panels will acclimate to the ambient conditions they are exposed to and will dimensionally expand and contract like wood at different humidity and moisture conditions. Extira panels should be acclimated to their final environment for 48 to 72 hours before installation.

How can Extira panels be cut?

Fine tooth handsaws or power saws with combination blades work best. Carbide tipped blades are recommended. 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.

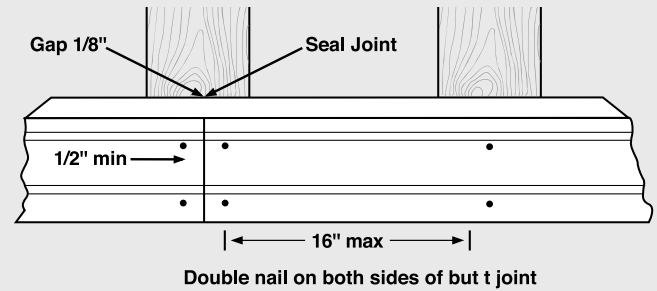


How can I fasten Extira panels?

Traditional fasteners such as nails, screws and glue are recommended. Polyurethane-based adhesives are also recommended. 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. Nailing into the edge of the product is NOT recommended.

See the full Extira Application Instructions at www.miratecextira.com.



How do Extira panels perform in laboratory testing?

Field tests for rot and termite resistance were conducted 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:

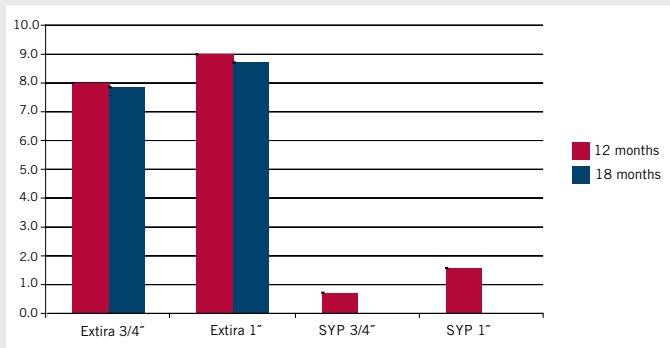
Test standard: AWPA E7 – Standard Method of Evaluating Wood Preservatives by Field Tests with Stakes.

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

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.

ROT RESISTANCE:

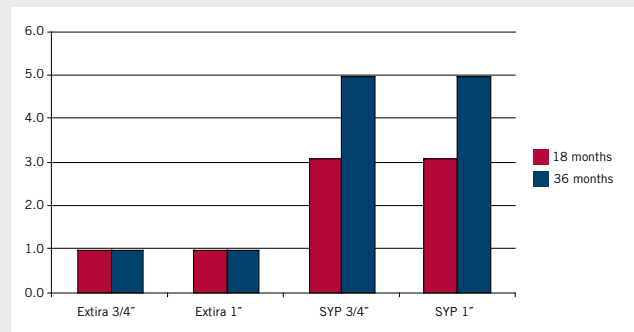
Test standard: AWPA E16 – Field Test for Evaluation of Wood Preservatives to be used Out of Ground Contact: Horizontal Lap-Joint Method.

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 3/4" and 1". 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" in².

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 weather 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.

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Where can I buy Extira panels?

For the distributor nearest you, visit miratecextira.com and access the distributor locator, or call 1.800.255.0785.

How can I learn more about Extira panels?

Visit miratecextira.com



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