



*Formaldehyde-Free Hardwood Plywood
for Veneer-Core and
Wheatstraw Agrifiber-Core Construction*

Frequently Asked Questions

What is Columbia's new PureBond™ hardwood plywood?

It's decorative hardwood plywood manufactured using a formaldehyde-free adhesive enhanced with a proprietary resin formulation manufactured by Hercules Inc. PureBond was developed cooperatively by Columbia, Hercules and Oregon State University's College of Forestry over the course of several years. Oregon State originally came up with the technology and owns all three patents; OSU has granted all licensing rights to Hercules, and Hercules has granted exclusive sub-licensing rights to Columbia for the manufacture of hardwood plywood, veneer and flooring. Those rights are good for the life of the patent.

Which products will be manufactured with it?

To start, we will convert all of Columbia's standard veneer-core and wheatstraw agrifiber-core hardwood plywood produced at Old Fort, North Carolina; Klamath Falls, Oregon; and Hearst, Ontario. We will be expanding it to other products and locations in the future.

Will it cost more?

Columbia's PureBond plywood is cost-competitive with the standard urea formaldehyde (UF) construction of most hardwood plywood made today.

Aside from cost-competitiveness, what are some other advantages to using Columbia's PureBond?

Replacing UF plywood manufacturing with PureBond eliminates formaldehyde press emissions, which is good for our employees. In turn, it eliminates product emissions,

which is good for both our customers and end users. PureBond plywood has superior water resistance to UF adhesive as well, approaching Type I or waterproof performance in product testing. And PureBond hardwood plywood panels are compliant with the U.S. Green Building Council's Leadership in Energy & Environmental Design's (LEED) EQ Credit 4.4 for Low-Emitting Materials: Composite Wood.

Aren't other adhesives considered to be non-formaldehyde emitting available?

Yes, the two more common are PVA (white or yellow glue) and the Isocyanates (e.g. MDI), both of which are substantially more expensive than traditional UF manufacturing and Columbia's new PureBond technology.

Will panels be labeled?

Yes. We're working on marketing materials to promote a brand that can be specified by architects and designers.

So, what about decorative face veneers?

Most spliced face veneers are composed using a UF glue. However, when spliced veneers are adhered to cores that are constructed with PureBond, the overall formaldehyde emissions from these thin glue lines are negligible. We are, however, in the process of converting our face veneer splice lines over to PureBond, which will completely eradicate any potential emissions.

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How does using PureBond impact the flamespread rating?

We have randomly tested Columbia's hardwood plywood with PureBond and have found it maintains the same flamespread rating as UF bonded plywood, Class C or III.

Should we be calling PureBond "no-added-formaldehyde" or "formaldehyde-free"?

PureBond is formaldehyde-free; there's no formaldehyde in its makeup. Though natural formaldehyde exists in negligible amounts in some wood species, PureBond hardwood plywood with either veneer or Wheatstraw agrifiber cores can be called formaldehyde-free.

What customers and/or end users would be most attracted to using decorative panels manufactured with PureBond?

PureBond panels would be particularly well-suited to schools, hospitals and institutions nationwide, LEED projects, all public building projects in the state of California and most new public buildings on the West Coast. Many major cities, such as Chicago, Atlanta and Los Angeles, have adopted LEED building standards, and PureBond is tailor-made for them.

Can I get PureBond formaldehyde-free hardwood plywood now?

It's currently in limited production in Old Fort, NC; Klamath Falls, OR; and Hearst, Ontario, Canada. Availability will increase over the next several months.

How does PureBond hardwood plywood compare to UF hardwood plywood in terms of bond strength?

Samples of product manufactured with PureBond have been tested in accordance with Section 4.3 Dry Shear Test, of the ANSI/HPVA HP-1-2004 Standard. Results of these tests demonstrate that PureBond performs as well or better in comparison to traditional UF-bonded panel products.

Is PureBond as water resistant as UF?

Even more so. Much of the product tested shows results approaching the requirements for Type I, or waterproof performance.

Can PureBond stand up to chemicals such as contact adhesives one might use to apply high-pressure laminate?

Our formaldehyde-free PureBond develops a rigid, insoluble, thermo-set glue line that is more resistant to heat and moisture degradation than a traditional UF glue line.

Will PureBond hold up as long as the old, or could it possibly break down over time?

The best way to measure long term performance is to conduct tests exposing the product to moisture. Such testing induces substantial mechanical stresses in the panels. In our testing, PureBond formaldehyde-free panels have actually outperformed UF bonded panels in all moisture degradation tests.

Can I use any accepted finish on PureBond panels, or are there some finish materials that should be avoided?

We've identified no finish issues.

Is there any health risk associated with PureBond?

It is important to note that wood itself contains some natural extraneous inclusions that are volatilized during hot pressing, so currently available technology precludes the total elimination of off-gassing of all volatile organic compounds (VOC). There are no health risks identified with any of the components of PureBond, either in raw or cured form. And, as a result of converting from UF plywood construction to formaldehyde-free PureBond plywood construction, VOC emissions from our panel manufacturing operations will be reduced by up to 90%.



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