



FAQ

Frequently Asked Questions
**Precision Board
Signage Applications**

Manufacturers of Precision Board
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1. Where can I get instant access to Precision Board information, technical data, videos, sample material, and other resources?

*On our highly comprehensive website at www.precisionboard.com or our **mobile app**; **Precision Board Mobile**. Available for iOS and Android devices, visit our website for a free download.*



2. Where can I find information on how to machine Precision Board on a CNC?

*See **Onsrud Router Bit Guide** for chip loads, speed and feed settings at www.precisionboard.com.*



3. Can Precision Board be used outside in all exterior environments?

Yes, it can. Precision Board, being a closed cell product, absorbs no moisture. It is a fairly good insulator, so temperature does not migrate into it. It has been tested from -423 F to +300 F with no degradation or breakdown. It doesn't absorb water from high humidity, rain, snow, or ice so it does not expand or contract since it doesn't absorb anything. This means it doesn't warp or crack and the paint lasts longer and stays brighter than on wood.



4. Why does Precision Board stand up so well in exterior environments?

Precision Board (PB) high density urethane (HDU) is made of millions of tiny closed cells, that are separate from each other. Since these cells are not interconnected, ambient moisture cannot enter PB. This means PB does not warp or crack from liquid penetration.



5. Does temperature cause Precision Board to expand or contract?

Yes, it does. Virtually every material, whether it is metal, glass, wood, stone, or HDU, expands and contracts as it gets warmer and cooler. This movement, and it's different for every material, is called Coefficient of Thermal Expansion or CTE. The CTE of Precision Board is 26×10^{-6} . When an architect designs buildings, dams, houses, etc. the CTE of each different material is taken into consideration to allow for its required movement. Call us for how this applies to HDU in signage, especially monument signs.



6. How long has high density urethane been around?

High density urethane (HDU) has been used commercially as exterior insulation starting with the Saturn S-II moon launch vehicle in 1964, and as exterior insulation on the Alaskan Pipeline in 1970, still in service. Currently, in addition to being used as insulation for homes, water heaters, refrigerators, and freezers, it is used for signage, composite layup tooling, model making, boat building, and in many other places. Urethane is very versatile and is track proven. Precision Board has been manufactured by Coastal Enterprises since 1972.



7. Is Precision Board heavier or lighter than wood?

The density of redwood is about 26 pounds per cubic foot. The standard Precision Board density for sandblasting is 15 pounds per cubic foot. A 1" thick 4' x 8' sheet of PB-15 weighs 40 pounds. A similar sheet of redwood weighs almost twice as much.



8. What does density mean and how does it relate to high density urethane (HDU)?

Density is the standard term for determining weight of a cubic foot of material, any material. A cubic foot is a cube that is 12" x 12" x 12". Its weight is the density. The higher the density the thicker the cell wall and the tougher and heavier it is. Thicker cell walls mean it takes more pressure to crush the cell wall. Heavier means there is more material in its makeup, so it costs more. The only physical difference between a 4 pound density PB and a 75 pound density PB is the thickness of the cell wall. The cell wall thickness only determines toughness and has no effect on its weatherability, solvent resistance, etc.



9. Can I fiberglass over Precision Board without the solvents eating it?

Yes. None of the commonly used solvents, or monomers, such as lacquer thinner, methylene chloride, naphtha, mineral spirits, etc. will not attack Precision Board.



10. Can Precision Board be cut with a hot wire?

No. Precision Board does not soften and dissolve with heat, as does styrene. Precision Board can only be cut with tools that cut wood. If it won't cut wood, it won't cut Precision Board.



11. Can Precision Board be cut with a laser?

Yes. Precision Board can be effectively engraved and cut using lasers. In some cases, charring on the edges may occur. Fumes from engraving Precision Board are non-toxic. See website for more information.



12. Can Precision Board be cut with a water jet?

Yes. Water jets cut by focusing a very high pressure, small diameter, stream of water. The cut is very smooth and thicknesses up to 6" thick have been accurately cut using this method. Water jet cutting is normally used to cut very large letters that won't fit on a router table. See website for videos and more information.



13. Does cutting or sanding Precision Board produce harmful gases, dust or toxic vapors?

No. PB is totally reacted and inert. There is nothing inside Precision Board that is released during cutting, etc. Standard particulate dust masks and eye goggles are recommended to keep the dust from entering the eyes, nose, or mouth. These protective devices should also be used when cutting or sanding wood, plastic, steel, or any other product. See SDS for more information.



14. Any special consideration when sandblasting Precision Board?

Sandblasting Precision Board is just like sandblasting a lightweight wood. Blasting pressure needs to be about 60 psi max, at the pot. You can get much closer to the work surface because of the low blasting pressure, the detail and shapes can be much more subtle. Very interesting textures can be realized by using heavy grit blasting material and standing at different distances from the work piece. Since the blasting pressure is low, the grit moves slower and instead of pulverizing the surface it takes out small pieces of the background. Less pressure means that a smaller and less expensive compressor can be used. Using Precision Board allows anyone to become their own blaster, if they so desire.



15. Is Precision Board environmentally friendly? Why is this a big deal?

Yes. Precision Board has eco-friendly, environmental safeguarding, green components. Our state-of-the-art formula is not only easier on the planet but also has created a much tighter, finer cell structure, making it much easier to carve, prime, and paint. Precision Board has a carbon footprint of 3:1 and a rapidly renewable resource content of 23.9%. No VOC's, non-toxic, totally inert, and no carcinogens. Made in California, USA. Privately held company.



16. What can I do to improve the adhesion of my sandblast resist mask to Precision Board?

Verify your blasting pressure has been reduced to 50-60 psi. Consider one coat of primer or even complete priming and painting prior to mask application. Use medium tack mask for pre-primed/painted surface and high tack mask for unprimed/unpainted surface.



17. Is Precision Board more expensive than wood?

Initially Precision Board may be more expensive on a square foot basis depending on the type of wood. However, since it comes in 8 standard sheet sizes from 20"x60" up to 5'x10' in thicknesses up to 24" thick, there is usually no laminating or surfacing required. The savings in adhesive, laminating labor, planning time and reduced shop time usually more than make up for any material cost.



18. What kind of adhesive is recommended for edge-bonding pieces together to make them longer/wider or for laminating sheets to make them thicker?

Coastal Enterprises makes and recommends using PB Bond-240 or PB Fast Set, one-part urethane adhesives, that are specifically designed for these purposes. PB Bond-240 and PB Fast Set are both waterproof, solvent proof, and they carve/sandblast similar to the basic substrate. PB Bond-240 cures in 12 hours. PB Fast Set cures in thirty minutes. Check out the data sheets. Call us for a free sample.



19. What is the best way to attach eye bolts and other hardware to Precision Board?

Since PB is a cellular material it is not recommended to screw hardware directly into it. The hardware, being metal, will expand and contract with temperature causing it to work its way back out. If excessive tension or pressure is applied to the fastener the threads will pull out of the cellular material. The most secure way to install a fastener or hardware is to drill a hole into the PB that is twice the diameter of the fastener and about 1/4" deeper than its shaft length. Fill this hole with a structural epoxy, insert the fastener, and let it cure. This way the threads are pulling against the hard epoxy that is totally bonded to the inside of the hole. Check out the PB Mounting and Strengthening Data Sheet.



20. Is it necessary to prime the surface of Precision Board prior to painting and what should be used?

We feel it is necessary to prime Precision Board prior to painting because not all paints adhere to HDU for the long term. Coastal Enterprises makes the FSC-88 WB - a one-component water based primer/filler. It can be applied directly to Precision Board, it dries quickly, sands easily, and accepts all types of paints. Other types of primers that have been developed specifically for use on HDU are also acceptable. When in doubt always ask the primer manufacturer before proceeding. Check out the priming video on our website at www.precisionboard.com.



21. Since Precision Board does not absorb moisture, do I need to prime/paint all sides of my sign?

Yes, Precision Board does not have grain and therefore does not have the beam strength that comes with grain. This means Precision Board could be pulled in the direction of the drying paint. All paints shrink as they dry which causes tension across the surface of the sign. The higher quality of paint the more strength this shrinkage has. Painting both sides of the sign with equal thickness and same type of paint provides equal tension and will keep one side from drawing the other. This is especially true of dark colored paints which absorb more heat.



22. How can I speed up the drying of my primer/filler?

The quickest and safest way is to position a large shop fan to blow air across the primed piece. The air rolling over the surface creates a slight frictional heating which pulls out the solvent or water carrier in the primer. Turn the fan off during actual primer application so the primer can flow out before it starts to dry. Don't place in direct sunlight as drying might occur too fast (skin over) which can result in blisters.



23. Is there a product performance warranty on Precision Board?

Yes. Precision Board has a 'Life of the Sign' warranty, in writing, against warping or cracking for the life of the sign. Installation must be adequately designed for HDU and the sign must be properly maintained during warranty period. Call or fill out form on website to obtain your copy of warranty.



24. How long does it normally take FSC-88 WB to dry before I can sand and paint it?

Remember that Precision Board does not absorb anything. This means that all drying takes place from the outside in, which takes much longer than on wood, or other absorbing materials. Typically, after drying overnight it is ready for finish sanding. However, the primer/filler is totally dry only when it can be sanded without any balling up on the sandpaper. If balling occurs, stop and let it dry longer. This method of testing is true for water or solvent based primers. Painting over primer that is not completely dry will result in blistering when the sign is installed. Even after primer is completely dry, we recommend placing a large shop fan to blow across item for 2 hours minimum prior to painting. See our FSC-88 WB training video at www.precisionboard.com.



25. Can I prime and paint my Precision Board sign panel prior to sandblasting?

Yes, priming Precision Board prior to application of a "Medium" Sandblast Resist Mask helps ensure mask adhesion. Leaving the mask in place after blasting and using as a paint mask during priming and painting of the blasted area also saves time. Do not leave mask on longer than necessary or it could cause damage to the surface. It is important to always roll out primer and paint evenly as overlapped areas will result in uneven blasting. Be sure to use the proper sandblast stencil for primed (or unprimed) HDU. See question #16 for more information.



26. What is the best way to add a wood grain look to Precision Board?

Since Precision Board HDU does not have a grain structure naturally, it must be simulated into the surface. The grain effect can be accomplished by coating the background surface with TSF-45 texture material or PB Hard Coat (Companion Products made by Coastal Enterprises) and "combing" the grain in. If hand-carving, a wire brush can be used directly on the Precision Board to create the wood grain effect. When sandblasting, a frame with wires stretched over it can be easily made and placed over the sign and blasted through. The wires redirect the sand, which creates a very realistic grain effect. Call us for specific details.



27. Is Precision Board affected by UV (UltraViolet)?

Yes. Left in the sun unpainted, Precision Board will start to discolor and turn brown in about 48 hours. Left totally unprotected Precision Board will continue to turn an uneven brown and breakdown from UV at about 1/32" per year. This means about 1" of deterioration every 32 years. Deterioration is not a big problem, but the changing color is not pleasing. Despite discoloration, the cell structure is unaffected. When this surface is removed it is ready for primer and paint. Keeping the painted surface maintained will ensure a very long service life.



28. How do I purchase a high quality HDU product and get the best technical support available?

The very best way to receive top quality high-density urethane is to always ask for Precision Board by name. Accept no substitutes. Technical support is readily available. Call us toll-free at (800) 845-0745 for samples and check us out at www.precisionboard.com. We are here to help. While on our website, watch the step-by-step training videos on each of our Companion Products. Coastal Enterprises also publishes email newsletters and blogs each month on what's new in sign making. Great projects are always featured and yours could be too, it's great free advertising. Contact us to be included.