JASPER PLASTICS SOLUTIONS

DesignBoard®

What is Design Board (HDU)?

Developed for the sign industry, Design Board is a rigid, closed cell, high density polyurethane (HDU) board. HDU is completely waterproof and impervious to solvents, making it suitable for indoor and outdoor applications. Temperature variations, precipitation and insects have little or no effect o this state-of-the-art material. This product can be routed, carved, or sandblasted to achieve the desired result.

When was it introduced to the sign industry?

HDU board was first introduced to the sign making industry in the late 1980's. There was a genuine need for an alternative to wood – an alternative that could withstand harsh environments and be more cost effective. A key enable for the introduction of HDU was the availability of CAD-CAM technology to small and mid-sized sign shops.

Why is it gaining in popularity as sign making material?

Unlike redwood and cedar, HDU is readily available and, when combined with the benefits listed above, it's no surprise that it has gained a foothold in the industry.

Are special tools required to work with Design Board?

No. The same tools that you currently use to carve, route, or blast can be utilized to product a HDU sign.

- Carving – Traditional wood carving tools that you use on wood will work great on Design Board. Because there is no grain, directional carving is not required.
- Sand Blasting – Traditional blast equipment can be used in working with HDU. We recommend that sand blast media be changed with every use to ensure the quality for your sign. Although different types of blast material can be used, we recommend black beauty 50/50 or medium grit at a pressure of 90 – 120 p.s.i. Remember penetration into the material is much faster than wood. Grain devices are available that will create the illusion of a wood grain. Many creative techniques, using multiple levels of blasted or carved panels offer your client more three dimensional art for scenery, logos, etc.
- Routing - CNC routers or other routing equipment can produce fast, efficient, high-quality signs. All types of router tools can be used to crate the desired sign.

What are the benefits over wood in the sign making industry?

Unsurpassed weatherability and no grain to combat in the machining process are the primary advantages. Natural woods are greatly affected by weather conditions such as humidity and temperature. The soft grain of the wood expands and contracts at different rates causing the wood and painted surfaces to rapidly deteriorate. HDU is also more cost-effective than signs produced from wood.

Who makes HDU and why should I use Design Board?

There are a number of companies selling HDU to the sign industry. It is important for sign makers to study and evaluate the uniformity of the board, flatness, sanded surfaces, and homogeneity of the surface and subsurface. With over 38 years experience in producing HDU, extra care is taken to product Design Board for excellent performance and consistency. Each board is manufactured individually and is roll sanded on both sides to conform to specific specifications and tolerance requirements. Our manufacturing facility utilized the best raw material components to ensure that we are providing you with the best HDU board available in the industry. We pride ourselves in supporting your industry and by providing the best customer service to ensure your satisfaction. Remember to ask for it by name → Design Board.

Who makes Design Board?

Design Board is made by Jasper Plastics Solutions in Syracuse, Indiana, and marketed nationwide through local distributors in your area. Jasper Plastics Solutions also provides customized solutions for companies that rely on outsourcing as a key component of their growth strategies.

Where can I get Design Board?

Virtually all sign supply distributors stock some or all brands of HDU board. We elect to distribute Design Board through a network of certified sign supply companies that would offer stock on hand, experienced consultation, and value-added services to you. In addition, they carry complimentary products such as, primers, paints, masks, and other related product for use with HDU board.

What sizes and densities are available?

Boards are available in 10lb, 15lb, and 18lb., densities. 70% of HDU purchased is 15lb. It provides an all purpose density that can be used in multiple processes and sign developments. Letters or heavily machined components can utilize 10lb. for less resistance and increased productivity. However, we caution that this is the least strong board. Some carvers prefer 18lb. as it provides a similar feel to wood carving.

Density	*Size*
10	4 ' x 8 ' x 1/2 "
10	4 ' x 8 ' x 3/4 "
10	4 ' x 8 ' x 1 "
10	4 ' x 8 ' x 1 1/2"
10	4 ' x 8 ' x 2 "

Design Caps
ball - 4"
ball - 6"
oval - 4"
oval - 6"
acorn - 4"
acorn - 6"

Density	*Size*
15	4 ' x 8 ' x 1/2 "
15	4 ' x 8 ' x 3/4 "
15	4 ' x 8 ' x 1 "
15	4 ' x 8 ' x 1 1/2"
15	4 ' x 8 ' x 2 "
15	4 ' x 8 ' x 3 "
15	4 ' x 8 ' x 4 "
15	4 ' x 10 ' x 1/2 "
15	4 ' x 10 ' x 3/4 "
15	4 ' x 10 ' x 1 "
15	4 ' x 10 ' x 1 1/2"
15	4 ' x 10 ' x 2 "
15	4 ' x 10 ' x 3 "
15	5 ' x 8 ' x 1/2 "
15	5 ' x 8 ' x 3/4 "
15	5 ' x 8 ' x 1 "
15	5 ' x 8 ' x 1 1/2"
15	5 ' x 8 ' x 2 "
15	5 ' x 10 ' x 1/2 "
15	5 ' x 10 ' x 3/4 "
15	5 ' x 10 ' x 1 "
15	5 ' x 10 ' x 1 1/2"
15	5 ' x 10 ' x 2 "

Density	*Size*
18	4 ' x 8 ' x 1/2 "
18	4 ' x 8 ' x 3/4 "
18	4 ' x 8 ' x 1 "
18	4 ' x 8 ' x 1 1/2"
18	4 ' x 8 ' x 2 "
18	4 ' x 8 ' x 3 "
18	4 ' x 10 ' x 1/2 "
18	4 ' x 10 ' x 3/4 "
18	4 ' x 10 ' x 1 "
18	4 ' x 10 ' x 1 1/2"
18	4 ' x 10 ' x 2 "
18	5 ' x 8 ' x 1/2 "
18	5 ' x 8 ' x 3/4 "
18	5 ' x 8 ' x 1 "
18	5 ' x 8 ' x 1 1/2"
18	5 ' x 8 ' x 2 "
18	5 ' x 10 ' x 1/2 "
18	5 ' x 10 ' x 3/4 "
18	5 ' x 10 ' x 1 "
18	5 ' x 10 ' x 1 1/2"
18	5 ' x 10 ' x 2 "

Can I “glue it up” to make unusual shapes or larger sizes?

Design Board can be easily “glued-up” to make three dimensional or larger signs exceeding standard sheet stock sizes or thickness. With the exception of “school” glue, all CA, solvent-based epoxy glues work well. Several manufacturers such as Lord

Adhesives, PB Bond-240, or Gorilla Glue developed product lines for his application. Remember to clamp your work as specified during setting time.

When gluing two HDU boards together to increase length or width, use a typical lap or butt joint. For maximum strength, prior to applying glue, route a small channel, or scratch HDU with a nail so excess glue does not squeeze out while clamping. For larger glue-ups, a biscuit or dowel may be necessary. Gorilla glue may be used, depending on your application, but can foam up causing an uneven surface. We recommend the Lord Adhesives 7542 glue when gluing urethane to urethane. When clamping the two boards together, don't over tighten clamp(s).

Gluing HDU is different then gluing wood. HDU has a closed-cell structure which does not permit moisture evaporate, whereas wood has open wood grain. *It is extremely important to select the right adhesive for the materials being used.* The chart below may help determine which adhesive works best with different applications:

LORD Adhesives

	Aluminum / Steel	***Pre-finished Metal***	***Poly-Carbonate***	***Acrylic***	***Urethane Foam***	***PVC Foam Board***	***Ceramic / Stone***	***Wood***
Urethane Foam	7660 7610 7542 7545	7542 7545 7650 7610	7542 7545 7650 7610	7542 7545 7650 7610	 7542 7545 7550	7542 7545 7650 7610	 7610	7542 7545 7650 7610

What if I need several of the same size or type of sign?

Jasper Plastics Solutions offers solutions and has the capability to "cast" your original work and develop a mold for reproduction. For minimal upfront costs, we can provide you hundreds of patterned signs ready for your final paint selection thus saving you time and money. Should you require this service, contact your local sign distributor or contact us designboard@jasperplasticssolutiosn.com.

How do I finish my (HDU) sign?

Finish - the first and lasting impression of your work is in the finishing process. Your unfinished product can be brought to life through the use of many different finish materials and techniques. Below you can find a guide to primers and paints that have been brought to our attention from several sign makers. Though this is not the complete list of finishing materials that can be used, it should prove to be a good guide for your consideration.

- It is important that your entire sign (front, back, and sides) be free of dust using compressed air prior to being primed.
- We recommend two coats of primer to the entire sign.
    - Normal primers contain 35% solids
    - *High-Build* primers work best with HDU.

Primers can be water-based, solvent-based, or catalyst-cured (2 part). The urethane, polyester, and epoxy primers are the most permanent yet the most expensive.

When deciding the right primer, consider the end use of the sign (indoor, outdoor, high traffic, etc.) Since the primer dries from the outside in, it's imperative that you let the primer coats dry very well. In determining paint selections, remember to consider the base primer used. Oil based paint will adhere to certain water-based primers (Chromatic 4411010). Other than the primers and paints referenced below, finish material suppliers manufacture several lines of paint that will work well on HDU. Your Design Board distributor can offer assistance in making your decision.

Helpful Hints:

- Two coats of catalyzed primer can make the sign up to 500% more rigid and strong
- 24 hour primer dry time is recommended for one or two coats
- After primer has cured, inspect and repair and surface imperfections
    - Two-part automotive filler
    - Exterior Spackle
        - After filler has dried, sand and remove dust
- Sand with 400 grit sandpaper after between primer application(s) and before paint
- Clean primed/sanded surface with a damp cloth or tack cloth

Popular Primers and Paints

Water-based Water-borne	*Oil-based*	*Polyester / Urethane*	*Epoxy*
1 Shot (Chromatic)	Ronan	Matthews	Sign Shine
Jay Cook	Spraylat	AKZO	PB Resin
Ronan	PB Resin		
Sherwin Williams	First Step		
	Benjamin Moore		

How do I mount my sign between posts or on a wall?

Depending on the application of your sign, size and weight, and the desired mounting location, several attachment methods can be used. For stability on larger signs, some sort of structure should be built into the design. Epoxy glues can be used to anchor hangers, inserts, brackets, bosses, etc.
Screws/Bolts – any screws/bolts applied should be set with an epoxy (example: LORD Adhesives 360AB has worked well for many sign builders)

- Backers/Laminates – several different types of backers/laminates are available to achieve the structural stability needed.

    - Wood will work but will deteriorate long before your sign will.
    - Nudo Products, Alumalite, and Dibond laminates are known to work well.
- Extrusion – there are many ways of hanging your sign. It is important to hang signs properly to ensure longevity of all your hard work.
    - Signcomp and Image 1 Impact extrusion products are popular amongst many sign makers.
    - When using screws, epoxy them in for stability so they do not work their way loose.
    - If hanging a swinging sign, make sure to anchor the sign from at least one side.
    - If wanting to hide the bolt head, drill a larger hole and utilize washers. Cut plugs and glue in using epoxy glue.
    - When attaching letters,

Please see **LORD Adhesives** above for adhesive cross-reference to select an adhesive based on your substrate combinations.

Are there safety issues with working with HDU?

Normal shop safety equipment should be utilized while routing, carving, or blasting Design Board. We do not recommend the use of hot wire or lasers to cut or shape as the smoke is toxic and could be harmful. Always wear protective gear while in a shop environment.

Who do I call if I have additional questions?

With your purchases of Design Board, you get an experienced team to support you. Our knowledge field sales staff and nationwide distribution network are always ready to assist you. In addition, we offer dedicated friendly customer service at our manufacturing facility.

Feel free to contact us directly at:

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