

WORKING WITH ROWMARK'S



HEAVY WEIGHTS

Thick Gauge Engravable Sheet Plastic

Product Attributes

Heavy Weights are an impact-resistant, high-density, co-extruded, ultraviolet-stabilized polyethylene sheet. This heavy-gauge 3-ply polymer sheet is perfect for exterior signage where a tough surface and resistance to the elements are required. **Heavy Weights** are an ideal product for sign making, will not delaminate, chip or peel when routed or engraved. They are right at home in the marina or on the playground. **Heavy Weights** won't fade in direct sunlight, and will withstand rain, cold, hail and wind. The non-stick surface protects against most graffiti, markers and paints.

Care and Storage

- Store the sheets flat on a level surface, as the polymer can cold flow. Do not store upright as the material can easily take a set and will warp.
- Keep away from teak oil and other products that can stain the finish.
- Use china markers or water-based markers to draw patterns or mark for saw cutting. Do not use pencil, as it will permanently mark the material. Pen marks can usually be removed with mild household cleaners.
- Leave protective mask in place until you are ready to cut, route or engrave.

Cleaning and Maintenance

- **Heavy Weights** are designed to maintain their color and finish. Wash with mild household cleaners for normal surface cleaning.
- Avoid the use of abrasive nylon or metal scrub pads, as excessive force will mar the surface finish.
- **Heavy Weights** can be pressure washed.
- For resistant stains, apply bleach and allow it to soak in.
- Use citrus cleaner, alcohol or mineral spirits to remove grease or oil stains.
- Automotive silicone spray products or household furniture polish may help to hide scratches in the surface.

Project Planning

- When used for large exterior signage, provide structural support every 16-18".
- Keep away from heat sources that exceed 180° F.

- Test applications for unforeseen complications, such as expansion/contraction issues. *Heavy Weights* contract and expand at a rate of 6×10^{-5} inches per degree F, changing approximately 1/32" for every lineal board foot of length or width over a 40° temperature range.
- Unless framed, use *Heavy Weights* only in applications where the finished edge is not important.

Fabrication

- *Heavy Weights* may be cut with a circular saw at 1275 RPM using a 50-70-tooth carbide blade. Expect a feed rate of 12-16 feet per minute.
- When using a safety saw, a reduced feed rate is necessary to avoid overload of the saw motors or blown fuses/circuit breakers. This is especially true with cutting thickness' greater than 1/4". Draw the motor/cutting blade through the material at an even feed rate. If you detect a heavy load on the system, stop the motion to allow the blade to reach its maximum RPM.
- No surface finishing is required. *Heavy Weights* comes with a textured matte finish on both sides.
- Edges may be finished with a router. Sanding may be used, but very fine sandpaper is required to avoid creating small, hard to clean scratches.
- Because Rowmark's *Heavy Weights* sheet products are designed to resist water and grime, they cannot be painted, and the use of adhesives is not recommended. If gluing is absolutely necessary, products such as 3M's *Scotch-Weld DP-8005* and *Lord Corporation's 7540-AB* have been used with some success. *Special welding rods, designed for use with polymer sheets, are also available.*
- Use standard fasteners with oversized holes when mounting. Drill pilot holes first, followed by an oversized hole to allow for expansion and contraction. Use press-in thread inserts for applications where repetitive motion is expected, such as a hinge, or where removal of the sign is frequent.
- Mild heat applied with a heat gun will help to mold the sheets for curved installations.
- Hide fasteners with plugs made from *Heavy Weights* materials using a standard wood-plug cutter. Make the plug slightly larger than the hole for a press fit.

Routing

- Use standard woodworking tools: table saws, table routers, drills, blades and bits. Carbide bits with two-to-four flutes are recommended.
- With a 1/2" diameter router bit, feed rates of 12-16 feet per minute are normal. Larger bits have higher tip speeds and RPM adjustments may be necessary.
- Mechanical hold down of the sheet when cutting is recommended.

Engraving

Engravers will find Heavy Weights relatively easy to work with. However, there are several differences as compared to engraving standard 1/16" ABS or acrylic engraving laminates.

- *Heavy Weights* are made from a relatively soft polymer (polyethylene blend). The surface can be cut easily, although minor surface nicks and cuts will not detract from the sign-blank, as the cap layer is quite thick.
- The surface is very slick and most adhesives and tacky mats will not secure the plate for engraving. Carpet tape or other aggressive tapes may be required to hold down the plate.
- Mechanical hold-down of the sheet when engraving is recommended. Standard table clamps are generally sufficient. Double-faced "table" tape will work; however, it is advisable to increase the amount of tape used to secure the sign blank.
- Carbide bits work well. Use of FLX (flexible engraving stock) bits are recommended.
- The cap layer is much thicker (one of the key attributes of *Heavy Weights*). This means that engraving depths are much greater than most other engraving materials. The operator must take this into consideration when attempting to engrave small text and graphics. Depths of cut between .030" & .070" are necessary to expose the core color. Given the architecture of FLX rotary engraving bits, consideration must be given to text kerning. When possible, open up the text and line spacing. Avoid detailed graphics unless the sign is of sufficient size to permit detailed results.
- It is strongly recommended that a vacuum system and large diameter nose cone (vacuum boot) be used. Deep cutting results in larger chip sizes and clean removal is necessary to maintain proper cutting depths.

Rowmark[®]
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