

ULTRA PLUS

THIS TOUGH GUY BRAVES THE ELEMENTS

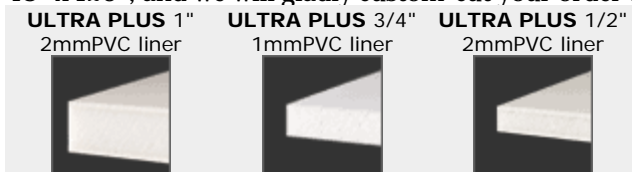
You may never cut another sheet of PVC or plywood once you've constructed an ULTRA PLUS sign. This is the lightweight, durable, rigid alternative to conventional outdoor materials.

Ultra Plus is made of high-quality extruded polystyrene foam between two layers of 1mm expanded PVC liner. It is extremely dent-resistant, warp-resistant, weatherproof and rigid.

Ultra Plus is the most durable foam board product anywhere, easily replacing wood and aluminum in the construction of outdoor signs. It has the same qualities and versatility as expanded PVC panels, but is lighter and less expensive.

You can treat and cut Ultra Plus just like wood — use a circular saw, router, band saw or scroll saw. Anchor it with adhesives or with screws and washers. Ultra Plus will not rot and is not degraded by direct sunlight, wind or moisture.

Ultra Plus has a white core and a white surface. It is available in 1/4" to 3" thicknesses with either 1mm or 2mm expanded PVC liners. Ultra Plus is manufactured in a standard sheet size of 48" x 96", also available are sheet sizes up to 48" x 120", and we will gladly custom-cut your order to your specifications.



ULTRA PLUS

TECHNICAL GUIDE



GENERAL

ULTRA PLUS is a lightweight structural panel consisting of a rigid polystyrene foam core faced on both sides by a smooth, moisture resistant sheet of 1mm expanded PVC. The foam and facers are permanently bonded together. The face laminates have been specially developed to provide an excellent surface for painting, silk screening, mounting and vinyl lay-up. Together with these properties and the ease and multitude of shaping methods make ULTRA PLUS an excellent choice for signage, mounting, exhibits, point of purchase displays and routed letters.

EXTERIOR USAGE

ULTRA PLUS panels are a strong, moisture resistant material. When exposed to long periods of very moist conditions, there is little change in either the face or the core. Exposure of unprotected faces to exterior conditions has no effect other than slight fading over time. Exterior color fastness may be improved when used with some PVC compatible UV resistant, non-yellowing inks, clear topcoat paints or clear laminates. Ultra-violet radiation degrades unprotected foam. Therefore, any exposed foam should be protected with a good quality, pigmented water base coating or other U.V. barrier. **Caution should be taken when using darker colored inks and paints. Dark coated ULTRA PLUS panels may blister when exposed to direct sunlight. Black ULTRA PLUS is not recommended for exterior use.**

WARPING

Under most conditions ULTRA PLUS panels will not warp; however, they may bow under certain conditions. Potential for bowing is much greater in thinner panels and in full 4 ft. x 8 ft. unsupported panels or on panels that are treated

differently on one side than on the other, i.e., coating panels on only one side or exposing one side of the panel to a higher heat source than the other.

ULTRA PLUS panels are manufactured and packaged flat; occasionally, however, a panel may tend to bow after unpacking. These panels should and can be corrected by inverting the panel on a flat surface and allowing it to remain inverted (1 - 24 hours) until the warping has dissipated. To insure maximum flatness, full wood frames edge glued to the perimeters of the panel should be sufficient. Extruded aluminum channels or wood frames to fit panel edges also work well. For extremely critical applications, a thicker ULTRA PLUS panel should be used. For panels where coatings cover 50% or more of the surface area, it is advisable to similarly coat the opposite side.

FACING SURFACES

ULTRA PLUS panels have 1mm white or black expanded PVC facers. Colored facers are available on a custom order basis.

PACKAGING

ULTRA PLUS panels are supplied from the factory in two forms: trimmed and untrimmed. The least expensive form is the untrimmed panel. An untrimmed panel is a slightly oversized panel in which either the foam core or the facer material is larger than the other on one or both sides. Untrimmed ULTRA PLUS is packed on skids containing 40 inches of material. Trimmed ULTRA PLUS is simply an untrimmed panel cut to size (4 ft. x 8 ft.) such that all the edges are clean smooth and square. Trimmed ULTRA PLUS panels are boxed in quantities shown:

Panel Thickness	Pcs. / Carton
1/4"	12
1/2"	12
3/4"	8
1"	12
1 1/2"	8
2"	6
3"	4

CUTTING

CIRCULAR SAWS:

ULTRA PLUS may be cut with standard table saws. For best results, use a blade designed for cutting ULTRA PLUS. The specifications are:

- a. Top grind inverted "V"
- b. Face grind hollow
- c. Tooth pitch 0.375" to 0.750"
- d. Side clearance 0.015" to 0.020"
- e. Clearance angle 2°
- f. Blade rpm 3500 to 4500
- g. Feed rate 40 to 60 fpm

Or you can purchase an ULTRA PLUS saw blade from Arkansas Carbide Saw and Tool, (918) 626-3837. Let them know arbor and blade diameter.

ROUTERS:

Routing ULTRA PLUS works well for creating irregular shapes. We recommend bits available from Onsrud Cutter, Inc. (847) 362-1560 and Vanguard Tool Corp. (540) 673-3496. Use Onsrud Cutter series 52-200 or Vanguard Tool part number VSC-102. Router bits should be double fluted carbide, upward chip removal, with a 1/4" shank diameter and a 3/16" cutting diameter. For best results run at 18,000 rpm and 85 inches/minute. Feed rate may be varied to compensate for larger bit diameter and different rpm. For special and long router bits for CNC routers, we recommend contacting Hartlauer Bits (541) 343-0390.

LAMINATING / GLUING:

No special surface preparation is required when gluing to the face of ULTRA PLUS. The surface should be kept clean and free of any oil contaminates as with any other surface to be glued. The selection of the proper adhesive depends on the materials to be joined. As a general guideline pipe cement, contact adhesive, construction adhesives and pressure sensitive tapes are compatible with the ULTRA PLUS facers. Caution should be taken when using solvent-based adhesives not to allow adhesive to make contact with the polystyrene core. These types of adhesives are likely to attack and deteriorate the foam core. Any adhesive should be thoroughly tested to evaluate its suitability.

PAINTING

GENERAL:

ULTRA PLUS needs no special preparation before priming or painting. For best results the surface should be clean and free of any oil contaminates. Cleaning the panel with glass cleaner or isopropyl alcohol just prior to coating can accomplish this.

TYPE OF PAINT:

The following paints have shown excellent results when used on ULTRA PLUS.

Matthews Paint Co. (800) 323-6593

MAP
De'Signar

Schwartz Chemical Co. (718) 784-7592

REZ-N-LAC

Wyandotte Paint Products Co. (800) 241-2173

Grip-Gard
Grip-Flex
Meta-Flex

Spraylat Corp. (914) 699-3030

Lacryl 20 series

Sherwin Williams (800) 336-1110

Polane

PPG Finishes (614) 363-9610

Delstar Delthane polyurethane acrylic enamel

Earl Campbell Mfg. Co. (816) 842-4777

Acrylic lacquer

Caution should be taken when using oil base or solvent base systems, not to allow paint to make contact with the polystyrene core. These types of paints are likely to attack and deteriorate the foam core.

In cases where the foam edges might be subjected to exterior exposure, it will be necessary to protect the edges from deterioration by the high intensity ultra violet light of the sun. A good coating of water-base paint or similar U.V. barrier should be sufficient to provide this protection.

Caution should be taken with any paint, especially when intended for outdoor use. Always test paint on ULTRA PLUS prior to production run and follow all of the paint manufactures instructions.

SCREEN PRINTING:

GENERAL:

ULTRA PLUS panels are rigid, lightweight and easy to handle. The surface of ULTRA PLUS has a closed cell matte finish that makes screen printing easy to accomplish.

TYPE OF SCREEN PRINTING INKS:

The following inks have shown excellent results when used on ULTRA PLUS.

Deco Chem, Inc. (219) 259-3787

ATX
MFX
EPO
URE
PRP

Serical, Inc. (913) 342-4060

PFMR
MR Matte
Fascure
Gloss Poly
XG
PM
PY

Naz-Dar/KC Inc. (913) 422-1888

9700
7700
S2
GV
PP
3700
2700

Ink Dezyne (616) 887-8879

VP
MP
UI

Caution should be taken with any ink. Always test ink on ULTRA PLUS prior to production run. Allow 24 - 96 hours after test printing to evaluate the suitability of the ink for the intended application. Follow all of the ink manufacturers instructions especially regarding any required ink additives such as catalyst for proper adhesion and exterior usage.

SURFACE PREPARATION:

For best results in screen printing ULTRA PLUS panels, it is recommended the panels be cleaned to avoid the clogging of screens. This can be accomplished by wiping the panel with a tacky cloth or by cleaning the panel with isopropyl alcohol or glass cleaner prior to screening.

DRYING:

Drying by oxidation and evaporation is recommended. Allow the freshly printed ULTRA PLUS to dry the length of time suggested by the particular ink manufacturer.

ULTRA VIOLET INKS:

Most U.V. inks that are compatible with expanded PVC can be used with ULTRA PLUS. However, board thickness, type of ink, wattage of U.V. lamp and exposure time can affect results. Always test the suitability of the ink and the drying process for your particular ULTRA PLUS thickness. Allow 24 - 96 hours after test printing to evaluate the results. Follow all of the ink manufacturers instructions.

PHOTO MOUNTING

GENERAL:

The surface of ULTRA PLUS makes it an excellent material for pressure sensitive photo mounting. Because of the rigidity of panel, finished mounts are stronger than mounts using lighter foam-type substrates.

SURFACE PREPARATION:

The surface should be clean and free of any dust, oil or other contaminants prior to mounting. This can be accomplished by wiping the panel with glass cleaner, a tacky cloth or with isopropyl alcohol.

PRESSURE SENSITIVE MOUNTING:

Cold mounting in cold roller laminators or hand lamination give excellent results. The choice of film is the most important consideration when using pressure sensitive film for mounting. Before using any pressure sensitive material, contact the manufacturer for recommendations concerning the use of their respective laminating materials in conjunction with ULTRA PLUS.

DRY MOUNTING:

Dry mounting is not recommended with ULTRA PLUS. The panels may tend to warp when heat is applied to only one side of the panel.