**ULTRA**

# ULTRA BOARD

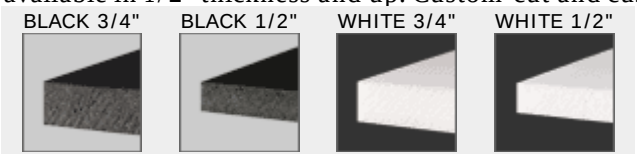
## OUTLASTS, OUTPERFORMS ALL OTHERS

Find out why this is our most popular and versatile product. ULTRA BOARD is a heavy-duty, all-plastic panel that features a litho-grade, high-impact polystyrene surface perfect for screen printing and digital printing. It is ideal for permanent displays and signs.

Ultra Board is designed primarily for interior use and is favored for its durability. The dent-resistant styrene liners are secured to the foam center with a remarkable bond that keeps the panel flat and rigid. The Ultra Board surface does not allow moisture to penetrate, so inks and paints stand out vividly for screen-printed or painted images.

Boasting its versatility, Ultra Board can be cut with a circular saw, router or scroll saw, or can be hand-cut or die-cut. Ultra Board is lightweight, strong, warp-resistant and is an exceptional value.

Ultra Board stock colors include white, black, red and blue. Custom color matched liners are also available with your choice of either a white or black foam core. The 48" x 96" sheet in 3/16" to 3" thickness is standard, but 48" x 120" is available in 1/2" thickness and up. Custom-cut and custom-run sizes are also available.




## TECHNICAL GUIDE


## GENERAL

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

## EXTERIOR USAGE

ULTRA BOARD 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 a slight bleaching. 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. Large panels should be well supported to protect

against any bowing movement. **Caution should be taken when using darker colored inks and paints. Dark coated ULTRA BOARD panels may blister when exposed to direct sunlight.**

## WARPING

Under most conditions ULTRA BOARD 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, e.i., coating panels on only one side or exposing one side of the panel to a higher heat source than the other.

ULTRA BOARD 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 BOARD 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

Standard ULTRA BOARD panels have 0.015" litho grade high impact polystyrene facers. ULTRA BOARD is also available with 0.030" facers. Colored facers are available on a custom quote basis. It should be noted that this technical bulletin only covers ULTRA BOARD panels with the standard facer.

## PACKAGING

ULTRA BOARD 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 more sides. Untrimmed ULTRA BOARD is packed on skids containing 40 inches of material. Trimmed ULTRA BOARD is simply an untrimmed panel cut to size (48" x 96") such that all the edges are clean, smooth and square. Trimmed ULTRA BOARD panels are boxed in quantities shown:

| Panel Thickness | Pcs. / Carton |
|---|---|
| 3/16" | 16 |
| 1/2” | 12 |
| 3/4” | 8 |
| 1” | 12 |
| 1 1/2” | 8 |
| 2” | 6 |
| 3” | 4 |

## CUTTING

### CIRCULAR SAWS:

ULTRA BOARD may be cut with standard table saws. For best results, use a blade designed for cutting ULTRA BOARD. 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 BOARD saw blade from Arkansas Carbide Saw and Tool,(918) 626-3837. Let them know arbor and blade diameter.

### ROUTERS:

Routing of ULTRA BOARD 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.

### DIE CUTTING:

3/16" and 1/2" ULTRA BOARD die cut very well. Die cutting ULTRA BOARD is not recommended for panel thicknesses greater than 1/2".

### GUILLOTINE CUTTING:

3/16 inch and 1/2 inch ULTRA BOARD guillotine cut very well. Guillotine cutting ULTRA BOARD is not recommended for panel thicknesses greater than 1/2 inch.

### HAND CUTTING:

While ULTRA BOARD can be cut by hand, the strength of the face surfaces makes it difficult. For straight cutting by hand, best results have been achieved with knives with thin blades.

## LAMINATING / GLUING:

No special surface preparation is required when gluing to the face of ULTRA BOARD. The surface should be kept clean and free of any oil contaminates as with any other surface to be glued. Great care should be taken in choosing an adhesive, however. Some solvent based adhesives will attack the styrene facer causing a small hole to develop in the facer thus allowing the adhesive to deteriorate the bond between the core material and the facer. This reaction could take up to several days to develop. Any adhesive should be thoroughly tested to evaluate its suitability. We recommend using Latex Liquid Nails for Foamboard, part number LN901. This adhesive is available from most hardware stores.

## PAINTING

### GENERAL:

ULTRA BOARD needs no special preparation before priming or painting. For best results the surface should be clean and free of any oil contaminates. This can be accomplished by cleaning the panel with glass cleaner or isopropyl alcohol just prior to coating. In any case the surface should not be sanded.

### TYPE OF PAINT:

The following paints have shown excellent results when used on ULTRA BOARD:

**Sterling Paint (800) 999-8482**
Medallion Enamel (no primer necessary)

**Sherwin Williams (800) 336-1110**
A-100 series latex (no primer necessary)

**Devoe Paint (800) 654-2616**
Mirrolac WB 8300 - 8400 series (no primer necessary)
Mirrolac WB 8502 series (no primer necessary)

**AKZO Nobe (800) 233-3301**
Grip-Gard HS (must be used in conjunction with VPS-1 primer)
Grip Flex (no primer necessary)
Grip Flex AQ (no primer necessary)

**Matthews Paint Co. (800) 323-6593**
MAP (must be used with 74-777 Tie Bond primer)
VOCMAP (must be used with 74-777 Tie Bond primer)
SVOC MAP (must be used with 74-777 Tie Bond primer)

**1 Shot (219) 949-1684**
Acrylic Graphic Coat Bulletin
Fluorescent
Art and Sign Poster Colors

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 BOARD prior to production run and follow all of the paint manufactures instructions.

## SCREEN PRINTING:

### GENERAL:

ULTRA BOARD panels are rigid, lightweight and easy to handle. The facers accept most printing inks well. Our experience shows NAZ-DAR 79000 series corogloss ink and Ink Designs Modified Acrylic works well. Caution should be taken with any ink. Always test ink on ULTRA BOARD prior to production run. Allow 24-96 hours after test printing to evaluate the suitability of the ink for the intended application. And follow all of the ink manufacturers instructions.

### SURFACE PREPARATION:

For best results in silk screening ULTRA BOARD 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 BOARD to dry the length of time suggested by the particular ink manufacturer.

### ULTRA VIOLET INKS:

U.V. inks can be used with ULTRA BOARD. 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 BOARD thickness. Allow 24-96 hours after test printing to evaluate the results. And follow all of the ink manufacturers instructions.

## DIGITAL PRINTING:

### GENERAL:

ULTRA BOARD panels have worked well with digital printing equipment. However, new equipment is constantly entering the market. Existing equipment continues to be upgraded and modified for existing substrate technology.

### SURFACE PREPARATION:

It is recommended before printing on ULTRA BOARD that all panels are cleaned of any surface contaminates. Cotton gloves must be worn when handling ULTRA BOARD. United Industries should be contacted for assistance if trimming panels before printing.

### PRINTING:

Before printing a production run of ULTRA BOARD, it is recommended that the end user call the manufacture of the digital equipment for set up and ink recommendations. ULTRA BOARD may not be an appropriate product for every flat bed application. United Industries offers a free digital sample kit for testing before setting up for a production run.

## PHOTO MOUNTING

### GENERAL:

ULTRA BOARD panels are being used extensively in pressure sensitive photo mounting. The facers of ULTRA BOARD make it a superior panel for photo mounting.

### SURFACE PREPARATION:

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

### PRESSURE SENSITIVE MOUNTING:

The choice of film is the most important consideration when using pressure sensitive film for mounting photographs to ULTRA BOARD. Before using any pressure sensitive material, contact the manufacturer for recommendations concerning the use of their respective laminating materials in conjunction with ULTRA BOARD. For best results, the use of equipment specifically designed to apply these pressure sensitive films should be used.

### DRY MOUNTING:

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

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