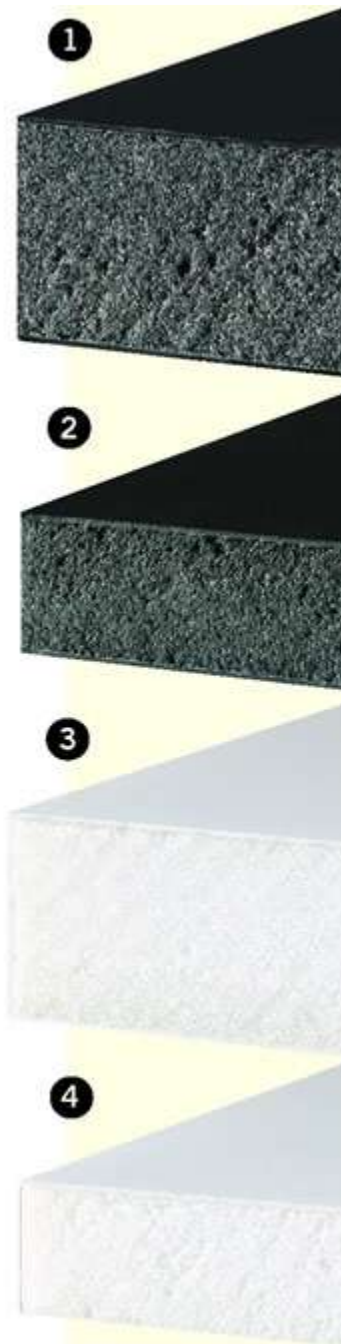


Ultra Board

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 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, digital-printed, or painted images.

Boasting its versatility, Ultra Board can be cut with a circular saw, router, i-cut, 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 are white or black face with white or black foam core. Custom color matched liners are also available with your choice of either a white or black foam core. Standard sheet sizes are 48" x 96", 60" x 96" and 60" x 120" in 3/16" to 3" thickness. Custom-cut and custom-run sizes are also available.

Ultra Board

TECHNICAL SPECIFICATIONS

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

Not intended for exterior applications.

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:

- Top grind inverted "V"
- Face grind hollow
- Tooth pitch 0.375" to 0.750"
- Side clearance 0.015" to 0.020"
- Clearance angle 2°
- Blade rpm 3500 to 4500
- 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. The best results can be obtained on 3/16" using Onsrud bit #60-111, feed rate 200" per minute run at 24,000 rpm, for 1/2" and 3/4" use Onsrud bit # 55-080, feed rate 250" per minute run at 20,000 rpm and for 1" and thicker use Onsrud bit # 52-564, feed rate 125" per minute run at 18,000 rpm. If the recommended Onsrud bits are not available bits from Vanguard Tool Corp. (276) 673-3496 part number VSC-102 or Onsrud Cutter series 52-200 may work well. Router bits should be double fluted carbide, upward chip removal, with a 1/4" shank diameter and a 3/16" cutting diameter. 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 LN-604. 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 contaminants. 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 manufacturer 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 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: 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.

Ultra White DP

ULTRA WHITE: BRITE WHITE FOR FLATBED PRINTERS



Courtesy of Acrylic Design, Inc.

The latest Ultra product, Ultra White DP is a lightweight, heavy-duty brite white 18 point poly-coated kraft paper lined foam board with a dense extruded polystyrene foam core. Ultra White DP is exceptionally durable and will not warp like traditional foam core foam boards.

Flatbed digital printing costs have declined dramatically over the past years making them more affordable and their use is increasing for both small and large print jobs. Ultra White DP is a high quality, extremely rigid foam board that is designed to be used with flatbed printers. Its brite white liners show exceptional image quality. Ultra White DP is versatile, easy to use and its poly-coated liners make handling easy. Use of cotton gloves is preferred when handling any substrate to be printed but Ultra White DP can be printed without fear of fingerprints or smudges showing up after printing.

Ultra White DP can be cut by hand, saw, or with razor cutters and works exceptionally well with the i-cut® GrapicsRouter™ with die-cutting blades.

Ultra White DP stock color is white. Standard sheet size is 48" x 96" and standard sheet thickness is 3/16", 1/2", 3/4" and 1". Look for 60" x 120" as a standard size in the near future.



Ultra White DP

MORE INFORMATION (ULTRA WHITE DP TECHNICAL GUIDE)

GENERAL

Ultra White DP is a lightweight structural panel consisting of a rigid polystyrene foam core faced on both sides by poly coated Kraft paper. The foam and facers are permanently bonded together. The face

laminates have been specially developed to provide a good surface for painting, silk screening, photo mounting and vinyl lay up. Ultra White DP is an excellent choice for interior signage, photo mounting, exhibits, and point of purchase displays.

EXTERIOR USAGE

Ultra White DP is not recommended for exterior use. The paper facers of these panels will not withstand extended exposure to moisture.

WARPING

Ultra White DP panels are manufactured and packaged flat. Under most circumstances Ultra White DP panels will remain flat. Potential for bowing is greater in thinner panels that have been treated differently on one side than the other, i.e., coating panels on only one side, or exposing one side to extreme moisture. For extremely critical applications, thicker panels should be used.

FACING SURFACES

Ultra White DP panels have poly coated Kraft paper facers. The polyethylene coated paper makes an exceptional surface for painting and silk-screening; vinyl lettering can be removed without destroying the panel surface.

CUTTING

I-CUT DIGITAL GRAPHICS ROUTER: Ultra White DP can be cut with an i-cut router for creating irregular shapes. We recommend i-cut blade i-246. For best results run blade at 163 feet per minute.

CIRCULAR SAWS: Ultra White DP can be cut with circular saw blades specifically designed for cutting paper faced foam boards. General Saw Corporation, 1-800-772-3691, makes a blade (PLF series) that will produce excellent results. Other blade manufacturers make thin-rimmed high speed carbide-tipped plastic cutting blades (72-80 25-degree alternating teeth on a 10" dia. blade). Band saws with similar tooth design can be used.

HAND CUTTING: Ultra White DP can be cut by hand with mat knives, utility knives and razor blades. The key to getting a smooth, clean cut with a knife or razor is to use a very sharp, thin blade held at as low an angle as possible in relationship to the board. This reduces friction and allows the foam to slice rather than tear. It may be more practical to make the cut in more than one pass, especially if the board being cut is thicker than 1/2".

LAMINATING / GLUING

No special surface preparation is required when gluing to the face of Ultra White DP. The surface should be kept clean and free of any oil-based contaminants. Although many adhesives will work on Ultra White DP, care should be taken in choosing an adhesive for its intended use. Always test the adhesive before a production run and always follow the adhesive manufacturers instructions.

PAINTING

Ultra White DP panels need no special preparation before painting. For best results the surface should be clean and free of any contaminants. This is best achieved by simply wiping the surface with a dry cloth.

Ultra White DP can be painted with poster colors, acrylic paints, tempera, India ink and latex-based pigments. Caution should be taken when using oil based or solvent base systems, not to allow the paint to come in contact with the polystyrene core. These types of paints are likely to attack and deteriorate the foam core. The core may be required to be coated with a water based primer before solvent based paints can be used on the core.

PRINTING:

GENERAL: Ultra White DP panels are rigid, lightweight and easy to handle. The facers accept most printing inks well. Caution should be taken with any ink. Always test ink on Ultra White DP prior to production run. Allow 24-48 hours after test printing to evaluate the suitability of the ink for the intended application. Follow all of the ink manufacturers instructions.

For best results in silk screening Ultra White DP 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 prior to printing.

DRYING: Drying by oxidation and evaporation is recommended. Allow the freshly painted panels to dry the length of time suggested by the particular paint manufacturer. Forced drying by hot air ovens is not recommended.

ULTRA VIOLET INKS: U.V. inks can be used with ULTRA WHITE DP. Always test the suitability of the ink and the drying process for your particular ULTRA WHITE DP thickness. Allow 24-96 hours after test printing to evaluate the results. Follow all of the ink manufacturers instructions.

SCREENING INKS: The following inks have shown excellent results with Ultra White DP.

Ink Designs, Inc.

Flat Poster Ink (F.P. Series)
Hydra Print Ink (H.P. Series)
Multi-Purpose (M.P. Series)
Poly-Enamel (P.E. Series)
Value-Poster (V.P. Series)

Ink Designs International

Naz-Dar / KC

Echo Print (E.O. Series)
7500 Gloss Poster Ink
Satin Poster (S.P. Series)

Ultra Mount and Ultra Mount Peel N' Stick

FOAM BOARD: IDEAL FOR DIGITAL GRAPHICS



ULTRA MOUNT is the show-stopper of mounting boards. It performs with all the surface quality and rigidity of higher priced foam boards, and is available in a variety of plain and adhesive surfaces.

Original Ultra Mount is a favorite for mounted digital graphics and is often used for in-store decor and exhibits. It is a heavy-duty board with 18-pt poly-coated paper liners perfect for laminating, dry mounting, cold mounting, screen printing, paints or vinyl.

Ultra Mount panels are lightweight but durable and will not warp or bow like other foam boards. The coated surface lets you reposition a print or vinyl lay-up without damaging the paper liner.

Ultra Mount also comes in Peel N' Stick versions for convenience and simplicity. Ultra Mount Peel N' Stick comes coated on one side with high tack pressure sensitive adhesive. These are ideal for mounting a variety of materials including computer-generated digital graphics, photographic papers, prints, artwork, posters, drawings, charts, and virtually any type of paper or plastic.

Original Ultra Mount comes in white or black in thicknesses from 3/16" to 1" in 48" x 96" sheets. Custom-cut and custom-run sizes are also available.

Ultra Mount Peel N' Stick is available in a 3/16" thickness in 10 pre-cut sizes from 8" x 10" to 48" x 96".

Ultra Mount

MORE INFORMATION (ULTRA MOUNT TECHNICAL GUIDE)

GENERAL

ULTRA MOUNT is a lightweight structural panel consisting of a rigid polystyrene foam core faced on both sides by poly coated Kraft paper. The foam and facers are permanently bonded together. The face laminates have been specially developed to provide a good surface for painting, silk screening, photo mounting and vinyl lay up. ULTRA MOUNT is an excellent choice for interior signage, photo mounting, exhibits, and point of purchase displays.

EXTERIOR USAGE

ULTRA MOUNT is not recommended for exterior use. The paper facers of these panels will not withstand extended exposure to moisture.

WARPING

ULTRA MOUNT panels are manufactured and packaged flat. Under most circumstances ULTRA MOUNT panels will remain flat. Potential for bowing is greater in thinner panels that have been treated differently on one side than the other, i.e., coating panels on only one side, or exposing one side to extreme moisture. For extremely critical applications, thicker panels should be used.

FACING SURFACES

ULTRA MOUNT panels have poly coated Kraft paper facers. The polyethylene coated paper makes an exceptional surface for painting and silk-screening; vinyl lettering can be removed without destroying the panel surface.

CUTTING

CIRCULAR SAWS: ULTRA MOUNT can be cut with circular saw blades specifically designed for cutting paper faced foam boards. General Saw Corporation, 1-800-772-3691, makes a blade (PLF series) that will produce excellent results. Other blade manufacturers make thin-rimmed high speed carbide-tipped plastic cutting blades (72-80 25-degree alternating teeth on a 10" dia. blade). Band saws with similar tooth design can be used.

HAND CUTTING: ULTRA MOUNT can be cut by hand with mat knives, utility knives and razor blades. The key to getting a smooth, clean cut with a knife or razor is to use a very sharp, thin blade held at as low an angle as possible in relationship to the board. This reduces friction and allows the foam to slice rather than tear. It may be more practical to make the cut in more than one pass, especially if the board being cut is thicker than 1/2".

LAMINATING / GLUING

No special surface preparation is required when gluing to the face of ULTRA MOUNT. The surface should be kept clean and free of any oil-based contaminants. Although many adhesives will work on ULTRA

MOUNT, care should be taken in choosing an adhesive for its intended use. Always test the adhesive before a production run and always follow the adhesive manufacturers instructions.

PAINTING

ULTRA MOUNT panels need no special preparation before painting. For best results the surface should be clean and free of any contaminants. This is best achieved by simply wiping the surface with a dry cloth. ULTRA MOUNT can be painted with poster colors, acrylic paints, tempera, India ink and latex-based pigments. Caution should be taken when using oil based or solvent base systems, not to allow the paint to come in contact with the polystyrene core. These types of paints are likely to attack and deteriorate the foam core. The core may be required to be coated with a water based primer before solvent based paints can be used on the core.

PRINTING:

GENERAL: ULTRA MOUNT panels are rigid, lightweight and easy to handle. The facers accept most printing inks well. Caution should be taken with any ink. Always test ink on ULTRA MOUNT prior to production run. Allow 24-48 hours after test printing to evaluate the suitability of the ink for the intended application. Follow all of the ink manufacturers instructions.

For best results in silk screening ULTRA MOUNT 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 prior to printing.

DRYING: Drying by oxidation and evaporation is recommended. Allow the freshly painted panels to dry the length of time suggested by the particular paint manufacturer. Forced drying by hot air ovens is not recommended.

ULTRA VIOLET INKS: U.V. inks are not recommended for use with ULTRA MOUNT.

SCREENING INKS: The following inks have shown excellent results with ULTRA MOUNT.

Ink Designs, Inc.

Flat Poster Ink (F.P. Series)
Hydra Print Ink (H.P. Series)
Multi-Purpose (M.P. Series)
Poly-Enamel (P.E. Series)
Value-Poster (V.P. Series)

Ink Designs International

Naz-Dar / KC

Echo Print (E.O. Series)
7500 Gloss Poster Ink
Satin Poster (S.P. Series)

MOUNTING

GENERAL: ULTRA MOUNT was specifically designed with photo mounter's needs in mind. The combination of ULTRA MOUNT's high density core and thick poly-coated surface results in a warp free board that will maintain its exceptionally smooth surface finish after the photo mounting process is completed. Cold mounting, dry mounting and spray adhesives work well on ULTRA MOUNT. To prevent any tendency of bowing when mounting, it may be necessary to apply a counter-mount of comparable strength on the backside. Always test adhesives on ULTRA MOUNT prior to a production run and always follow the manufacturers instructions.

DRY MOUNTING: When dry mounting on ULTRA MOUNT, the temperature of the press should follow the adhesive manufacturer's directions. Generally, the lower recommended temperatures work best. If possible, keep temperatures below 200°F. and residence time less than one minute. It may be necessary to pre-heat the panel before mounting to prevent any tendency of bowing.

PRESSURE SENSITIVE MOUNTING: Pressure sensitive adhesives, depending on the product used, may be used with or without press equipment. The following pressure sensitive films have shown excellent results when used on ULTRA MOUNT.

GBC (800) 723-4000

Artic Dura Mount
Artic Advance Mount

Seal (800) 966-4554

Print Mount Ultra
Print Mount One
Print Mount Plus
Optimount

Durotech Corp. (800) 827-1379

Duromount E
Duromount W
Duromount U
Duromount R

Drytac (888) 622-3236

Media Tac
Rubber Tac
Sure Tac
Media Tac White

Ultra Core

THE RELIABLE, ECONOMICAL STANDARD



For temporary or light-duty uses, ULTRA CORE is the best choice available. It is both economical and well manufactured to provide you a quality foam-centered art board at an affordable price.

Don't be fooled by Ultra Core's low cost — it delivers many of the exceptional features of the other Ultra products. The panels are rigid and smooth, and are easily cut with a utility knife, razor or die. Ultra Core is ideal for mounting and framing photos and prints, and also works well for screen printing, temporary signs, architectural models, promotional displays and point-of-purchase sales.

Ultra Core Peel N' Stick is also available for quick and simple mounting of photos, prints or computer graphics — excellent for presentation materials.

Ultra Core and Ultra Core Peel N' Stick are made of white 12-pt clay-coated paper liners with a polystyrene foam center.

Ultra Core is 3/16" thick and the standard sheet size is 48" x 96". Ultra Core is available in white and black.

Ultra Core Peel N' Stick is available in 3/16" thickness in 10 pre-cut sizes from 8" x 10" to 48" x 96".

Ultra Core

MORE INFORMATION (ULTRA CORE TECHNICAL GUIDE)

GENERAL

ULTRA CORE graphic art board consists of a sheet of extruded polystyrene foam laminated on both sides with white clay coated paper. This lightweight material can be used for a wide variety of graphic arts applications including point-of-purchase displays, exhibits, signs, models, photo mounting and picture framing. Following are some general guidelines for working with ULTRA CORE graphic art board.

CUTTING

HAND CUTTING: ULTRA CORE can be cut by hand with mat knives, utility knives and razor blades. In order to achieve a smooth, clean cut without foam tearing, the blade must be sharp and positioned at a minimal angle during cutting. A sharp blade also reduces friction and the amount of force needed to cut the board.

Commercially available mat or foam board cutters can provide straight, square and clean edges with one pass of the cutting blade. The best edge can be obtained when the blade is set at the correct angle and is as sharp and thin as possible.

The cleanest cuts can be achieved from hand operated or powered cutters that utilize replaceable razor blades.

POWER CUTTING:

Rotary saws, band saws and scroll saws may provide an acceptable edge finish. The correct blade, blade speed, and feed speed required for a clean edge is dependent upon the quantity of boards being cut. It is recommended to pre-test any sizing method before committing to a production run.

Circular saws can be utilized to obtain clean cuts. The blade selected should be specifically designed for cutting foam boards. General Saw Corporation, 1-800-772-3691, makes thin rimmed, high-speed carbide-tipped plastic cutting blades that may produce acceptable results (72-80 25-degree alternating teeth on a 10" diameter blade.)

Band saw cutting may be performed with a straight knife or scalloped edge blades. Band saw blades with aggressive teeth can tear the paper and leave a hanging fray on the exit side of the cut. When cutting straight lines, wide blades tend to weave less than narrow blades thus producing a straighter edge.

Scroll saws or a Cutawl® Cutting Tool can easily provide curves and radii. The proper cutting blade is important in order to achieve clean edges. For scroll saws, thin premium double tooth blades can provide an excellent edge finish. Chisel point blades should be effective when utilizing a Cutawl®.

Routing and guillotine cutting are not recommended for ULTRA CORE.

DIE CUTTING: Die cutting can be accomplished by using a 3-point steel rule die with a long bevel. The ejection rubber used in conjunction with the die should be a hard rubber to produce a square edge, or a soft rubber for a closed edge.

When die cutting ULTRA CORE, the use of a straight edge die with a long bevel and a hard rubber will produce a square edge due to the memory effect of the board.

EMBOSSING

Adding 3-dimensional effects onto ULTRA CORE may be accomplished by means of embossing or debossing. Using flat or rotary die presses, either lines or patterns may be impressed into the surface

without using heat. This process can be done in conjunction with die cutting thus eliminating an additional operation.

PRINTING

ULTRA CORE's white, clay-coated paper liners are chosen for their excellent screen printing characteristics, including fine line detail, good ink hold-out, and fast drying rates. Water-based, solvent-based, or UV inks are generally suitable. ULTRA CORE's smooth surface makes it ideal for any printing operation which can utilize rigid flat sheet stock. When using solvent based coatings on ULTRA CORE, it is important that the coating does not come in contact with the exposed foam on the edges of the board. When using water dispersion coatings on foam centered boards, it is important to cover both sides of the board in order to reduce bowing.

Allow 24 - 48 hours after test printing to evaluate the suitability of the ink for the intended application. Follow all of the ink manufacturers instructions.

PAINTING

ULTRA CORE needs no special preparation before painting. For best results the surface should be clean and free of any contaminants. This is best achieved by simply wiping the surface with a dry cloth. ULTRA CORE can be painted with poster colors, acrylic paints, tempera, India ink and latex-based pigments. Caution should be taken when using oil based or solvent based systems, not to allow the paint to come in contact with the polystyrene core. These types of paints are likely to attack and deteriorate the foam core. The core may be required to be coated with water-based primer before solvent based paints can be used on the core.

When coating most of one side of a panel, the back side of the panel should also be coated to maintain more perfect long-term flatness. When possible, place weights at the edges when allowing the board to dry.

MOUNTING

GENERAL: ULTRA CORE material can be mounted utilizing most conventional mounting techniques, provided the surface of the board is clean and free of dirt and dust. Cold mounting, dry mounting and spray adhesives work well on ULTRA CORE. To prevent any tendency of bowing when mounting, it may be necessary to apply a counter-mount of comparable strength on the backside. Always test adhesives on ULTRA CORE prior to a production run and always follow the manufacturer's instructions.

DRY MOUNTING: Dry mounting on ULTRA CORE may be accomplished with a heat press or combination heat/vacuum presses. Although many dry mount tissues may be used, a lower temperature mount is recommended. Press temperatures should range from 180°F. to 220°F. Residence time in the press should be no longer than 90 seconds.

PRESSURE SENSITIVE MOUNTING: Pressure sensitive adhesives, depending on the product used, may be used with or without press equipment. Care should be taken when using a roller press; excessive

pressure may damage the core of the board. The following pressure sensitive films have shown excellent results when used on ULTRA CORE.

GBC (800) 723-4000

Artic Dura Mount

Artic Advance Mount

Seal (800) 966-4554

Print Mount Ultra

Print Mount One

Print Mount Plus

Optimount

Durotech Corp. (800) 827-1379

Duromount E

Duromount W

Duromount U

Duromount R

Drytac (888) 622-3236

Media Tac

Rubber Tac

Sure Tac

Media Tac White

Quality Mounting (800) 552-9427

Mista Bond #8387M-96-44

STORAGE

To reduce any tendency to bow, store boxes or sheets flat whenever possible. Store ULTRA CORE in the same environmental conditions as it will be used and avoid extremes of humidity and temperature.

FLAMMABILITY

ULTRA CORE has a combustible thermoplastic core which will burn when exposed to a flame source. Do not expose this material to open flame or other ignition sources.

These tips for fabricating ULTRA CORE have been developed to assist fabricators to work the aforementioned product: These fabrication suggestions and product specifications are based on information which is in our opinion, reliable. However, sense skill, judgment, and quality of equipment and tools are involved, and since conditions and methods of using ULTRA CORE are beyond our control, the suggestions contained in this manual are provided without guarantee. We recommend that prospective users determine the suitability of both the material and suggestions before adopting them on a commercial scale. United Industries Incorporated, does not make any warranties, expressed or implied,

including merchantability and fitness for purpose, with respect to any said suggestions and product data. In no event shall United Industries Incorporated, have any liability in anyway related to or arising out of said suggestions and product data for direct, special, consequential or any other damages of any kind regardless whether such liability is based on breach of contract, negligence or other tort, or breach of any warranty, expressed or implied.

Ultra Plus



**THE MOST RIGID FOAM BOARD
AVAILABLE**



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 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, and rigid.

Ultra Plus is the most durable foam board product anywhere, easily replacing wood and aluminum in the construction of 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 comes in white and black. It is available in 1/4" to 3" thicknesses with 1mm expanded PVC liners. Ultra Plus is manufactured in a standard sheet size of 48" x 96" and we will gladly custom cut your order to your specifications.

Ultra Plus

MORE INFORMATION (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

Not intended for exterior applications.

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
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1/4"	12
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1/2"	12
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3/4"	8
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1"	12
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1 1/2"	8
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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:

- Top grind inverted "V"
- Face grind hollow
- Tooth pitch 0.375" to 0.750"
- Side clearance 0.015" to 0.020"
- Clearance angle 2°
- Blade rpm 3500 to 4500
- 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. (276) 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 contaminants 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 contaminants. 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.

A BRILLIANT ALTERNATIVE TO METALS



Elegant metal signs and letters can cost you and your client a bundle. Now there is a lightweight, less expensive, easily crafted alternative. ULTRA ALUMINUM delivers the same impact and appeal as metal, but in a durable, versatile foam-centered product.

Ultra Aluminum is the ideal material for decorative letters and logos often seen in hotels, banks and office buildings. It can be sawed or routed, and is easier to craft than solid metal. It even maintains its appearance better — the surface is anodized aluminum, which will not rust, fade or tarnish. The back side is high-impact polystyrene.

For metal lettering and logos, Ultra Aluminum gold and chrome are the obvious choice and can be used in place of other sign materials.

Ultra Aluminum comes in four finishes — polished gold, brushed gold, polished chrome, and brushed chrome. Choose from black core, thicknesses from 3/16" to 3," and 48" x 96" sheets or custom-cut sizes. Two-sided aluminum panels are also available.

Ultra Aluminum

TECHNICAL SPECIFICATIONS

GENERAL

ULTRA ALUMINUM is a lightweight structural panel consisting of a rigid polystyrene foam core faced on one side with anodized aluminum and one side with litho grade high impact polystyrene. The foam and facers are permanently bonded together. The anodized aluminum panel can be used to create decorative letters and logos at a fraction of the cost of solid metal letters.

EXTERIOR USAGE

Not intended for exterior applications.

WARPING

ULTRA ALUMINUM panels are manufactured and packaged flat. However, they may tend to bow under certain conditions given that the aluminum facers are available on one or both sides. Potential for bowing is much greater in one-sided 4 ft. x 8 ft. unsupported panels.

FACING SURFACES

ULTRA ALUMINUM panels have 0.016" anodized aluminum facers. Anodized facers available are brushed gold, polished gold, brushed chrome and polished chrome. The facers have peel coat release liners to protect against scratching.

PACKAGING

ULTRA ALUMINUM panels are supplied from the factory trimmed to 4 ft. x 8 ft. and boxed in quantities shown:

Panel Thickness Pcs. / Carton

3/16" 8

1/2" 6

3/4" 4

1" 6

1 1/2" 4

" 3

3" 2

CUTTING

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

1. Top grind inverted "V"
2. Face grind hollow
3. Tooth pitch 0.375" to 0.750"
4. Side clearance 0.015" to 0.020"
5. Clearance angle 2°
6. Blade rpm 3500 to 4500
7. Feed rate 40 to 60 fpm

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

ROUTERS: Routing Ultra Aluminum works well for creating letters, logos, and irregular shapes. We recommend bits available from Onsrud Cutter, Inc. (847) 362-1560 and Vanguard Tool Corp. (276) 673-3496. Use Onsrud Cutter series 52-000 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:

GENERAL: No special surface preparation is required when gluing to the face of ULTRA ALUMINUM. 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. Some solvent-based adhesives will attack the styrene facer causing a small hole to develop 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 LN-604. This adhesive is available from most hardware stores.

PAINTING

GENERAL: ULTRA ALUMINUM needs no special preparation before priming or painting. For best results the surface should be clean and free of any oil contaminants. This can be accomplished by cleaning the panel with glass cleaner or isopropyl alcohol just prior to coating. 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 ALUMINUM prior to production run and follow all of the paint manufactures instructions.