

FIRMAFLEX™ GUIDELINES FOR USE

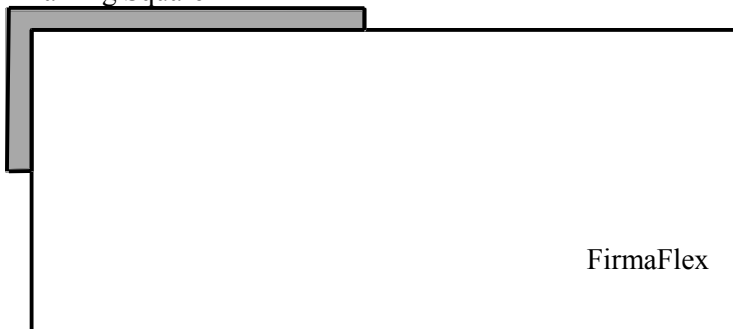
PROPERTIES

- FirmaFlex™ is a synthetic construction material made with 100% polyester fibers, manufactured with a patent pending process.
- It is a light weight, multipurpose material with both rigid and bendable properties.
- This durable polyester board is more versatile than any other material on the market today.
- FirmaFlex™ is used as an alternative to plywood, OSB, bendable plywood and other traditional construction materials.
- Straight applications include cornice boards, headboards, and other applications where rigid building material is normally used.
- Curved applications include coronas, arched window treatments, and other applications where curved or bendable material is normally used.
- Inherently flame retardant – Passes NFPA-701 flammability tests – Great for commercial applications.
- Moisture and heat resistant – Excellent for use in sunrooms, bathrooms and areas where heat and moisture are a concern.
- Half the weight of plywood and other wood materials.
- Faster and easier to cut, drill into, assemble, upholster and install than substructures made from wood.
- FirmaFlex™ is self-hinging and does not require additional hardware for bay, corner or large window treatment applications.
- FirmaFlex™ can be combined with wood if desired. Note: Although FirmaFlex™ can be used for dust boards, it is not recommended to be used as a mounting board alone. It can be used as a mounting board for soft treatments if it is first stabilized with a face board.

SQUARING

- Always square the material before cutting.
- Use a carpenter's framing square to ensure accuracy.
- Place the framing square even along the top edge of the FirmaFlex™.
- Mark the square vertical line along the other side of the framing square.

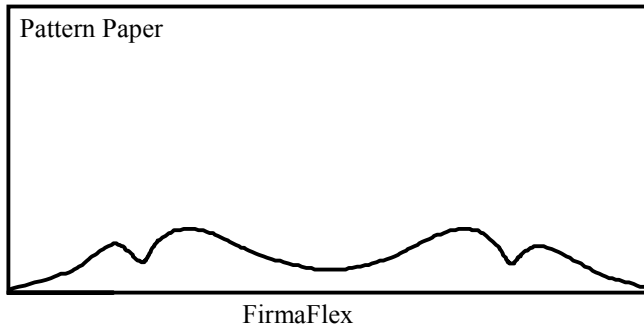
Framing Square



FIRMAFLEX™ GUIDELINES FOR USE

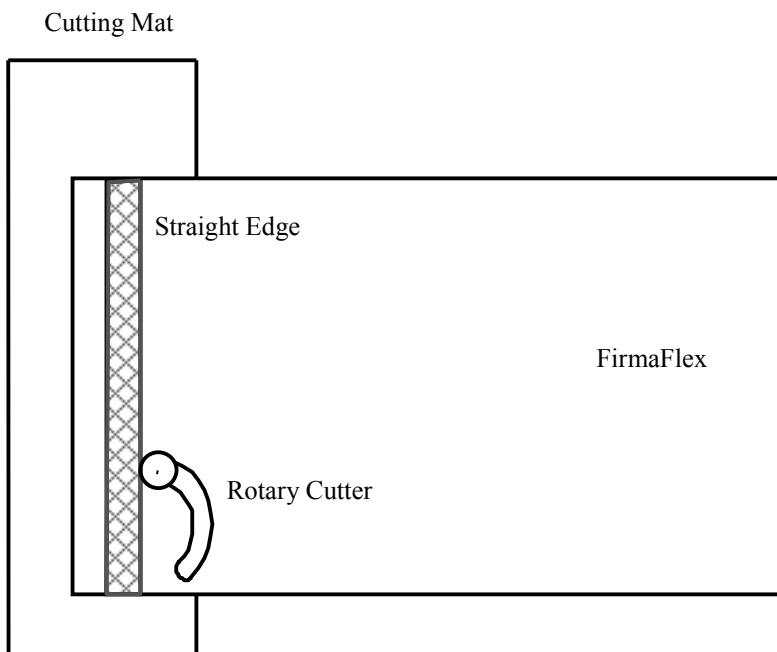
TRANSFERRING PATTERNS

- Use push pins to secure pattern paper to FirmaFlex™.
- Use a fabric marker, pencil, or pen to transfer lines. Note: Pen and pencil marks are not erasable.



STRAIGHT CUTS

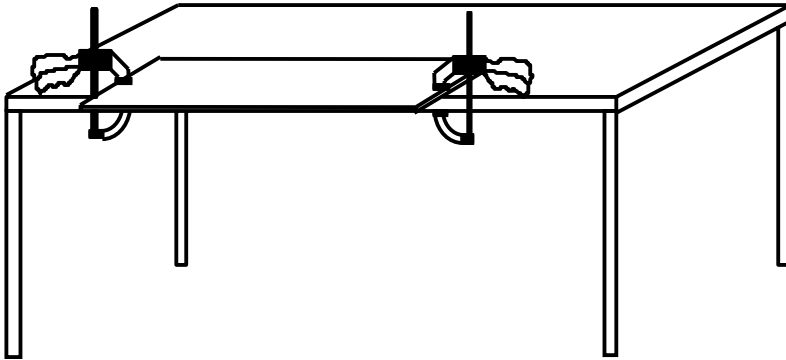
- DO NOT USE power saws with high rpm's (revolutions per minute), including table saws, circular saws, miter saws, etc. These saws produce undesirable cutting results in FirmaFlex™ and may damage the saw blades.
- Use a manual rotary cutter equipped with a 65mm blade. Note: The blade must protrude ½" in order to cut completely through the material. If the blade does not protrude a full ½", it will not cut through the material in one pass.
- Fiskars® brand has a rotary cutter that accepts both 45mm and 65mm blades. This cutter is ideal for cutting FirmaFlex™. By using a 65mm blade engaged into the second position (which is designed for the 45mm blade), the blade will protrude a full ½".
- Always use a cutting mat to protect the work surface.
- Use a very sharp blade for the best cutting results.
- Do not use blades that have been used previously to cut fabric. Dull blades will drag through the material and cutting will be difficult.
- Use a metal straight edge with a cork or felt backing to guide the blade through the material. Note: If the straight edge does not have a cork or felt backing, it may slip while cutting.



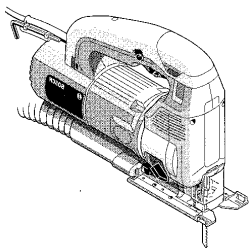
FIRMAFLEX™ GUIDELINES FOR USE

INTRICATE CUTS

- Clamp the FirmaFlex™ securely to the work surface when cutting. Note: DO NOT allow the material to hang off the work surface excessively. If it protrudes too far beyond the work table it will not remain stable enough to cut. It may be necessary to cut out part of the design, then reposition the FirmaFlex™ and continue cutting if the design is extremely intricate.
- Use a jigsaw set on medium speed.
- Use only blades designed for 'fine finish cutting' in wood. DO NOT use carbide tipped blades or blades specified for metal.
- Always wear safety glasses.
- Always keep the plate (or shoe) of the jigsaw resting completely flat and firmly on top of the FirmaFlex™ while cutting.
- Apply enough pressure to guide the saw smoothly through the material without forcing it.
- Always guide the saw through the material by pushing the tool away from your body – do not pull the saw toward you!
- Sanding is not required.



Clamp FirmaFlex securely to the work table before cutting with a jigsaw



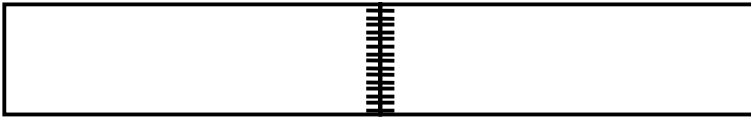
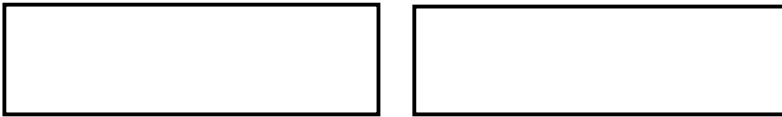
← Shoe of jigsaw rests flat on top of FirmaFlex while cutting

FIRMAFLEX™ GUIDELINES FOR USE

SPLICING

- Always work on a firm, flat surface.
- Splicing should be done prior to cutting the design with the jigsaw.
- Square the two edges to be joined.
- Apply hot glue to the edges to be joined and butt the joints together tightly.
- Staple a row of staples perpendicular to the joint, keeping the staples close together. They will resemble a zipper when the splice is complete.
- Turn the joined pieces over and apply more hot glue to the joint on the back side.
- Repeat the staple procedure until the entire joint is secured with staples on both sides of the material.
- Before cutting the shape on a spliced piece, transfer the pattern lines to the material then remove a few staples above and below the pattern line on both sides of the FirmaFlex™. This will prevent the jigsaw blade from hitting the staples. When the piece is cut, staple the joint where the staples had been removed.

Glue and butt together



Staple both sides like a zipper

FIRMAFLEX™ GUIDELINES FOR USE

ASSEMBLY

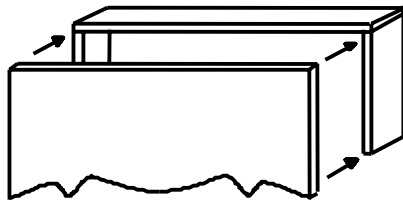
- FirmaFlex™ is assembled in the same manner as wood pieces are.
- Recommended fasteners are either pneumatic nails or wood screws with flat heads.
- The length of the fastener should be appropriate for the project.
- When assembling the face board of a cornice to the frame, use a fastener that is at least 1 ¼" long for the best results.
- When assembling flat pieces of FirmaFlex™ together, use a fastener that is long enough to bite into the last layer enough to hold it securely, however not so long that it will penetrate through the back side of the material.
- Pieces may be assembled with hot glue prior to securing with fasteners. Gluing allows more control when assembling large pieces, especially curved and arched frames. Note: Wood glue is not recommended as it soaks into the material too quickly and does not produce a strong hold. Thick tacky glue may be used, however it takes longer to set.
- DO NOT use glue alone for assembly. It must be followed with fasteners.
- Avoid excessive pressure when using screws because it may cause the material to dent.
- Place fasteners approximately 3" – 4" apart when constructing straight pieces.
- Place fasteners approximately 2" – 3" apart when assembling flexed or curved pieces.



Face Board



Frame



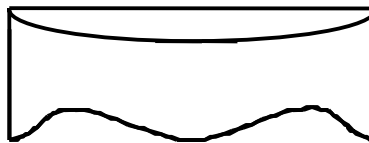
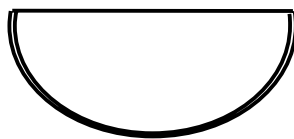
Attach face board to frame

FIRMAFLEX™ GUIDELINES FOR USE

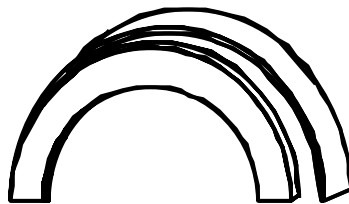
CORONAS, ARCHES AND CURVED TREATMENTS

- Measure and cut flat pieces of FirmaFlex™; dust boards for coronas or curved cornices and face boards for arched treatments.
- Measure and cut curved pieces, allowing at least 1" of extra length overall to ensure proper fit. Note: If the flexed piece is cut to exact size, it may end up too short after it has been assembled.
- FirmaFlex™ is inherently flexible and it is not necessary to score or kerf the material.
- Narrow strips used for dust boards will bend very easily. Larger pieces used for corona face boards or curved cornices are more rigid than narrow strips of FirmaFlex™. Optimum results are achieved when these pieces are pre-heated with a steam iron and then curved into shape. Note: The more steam applied, the easier the material will bend. Although it is not necessary to heat the material, bending and assembling larger pieces will be easier when the material is warm. Note: FirmaFlex™ is porous and the steam will penetrate all the way through the material. Use a clean oven mitt while bending the material to avoid burning your hands.
- If using screws for assembly, pre-set them into the flexed piece prior to attaching to the frame.
- Fasteners should be placed 2" to 3" apart when assembling. Note: If the piece has a strong curve, it may be necessary to add a few extra fasteners to the areas with the greatest arc.
- If you are not using the steaming method to pre-heat the material, DO NOT attempt to curve the entire piece of FirmaFlex™ around the flat base piece at one time. It will curve on its own as the fasteners are secured. It may be necessary to use more fasteners and place them closer together when not pre-heating the material.
- Pre-gluing with hot glue is recommended for curved applications, especially if you are using pneumatic nails for assembly. For best results, apply the glue in short sections and immediately secure that area with fasteners.
- Regardless of the fasteners used, always start assembly in the center of the piece and work out toward each end.
- Curve the flexed piece around the flat base piece, securing the fasteners from center out.
- When assembly is complete, cut off any excess material from the flexed piece that may over hang the flat base piece.

Top view of dust board



Corona face boards are mounted to the front edge of the dust board



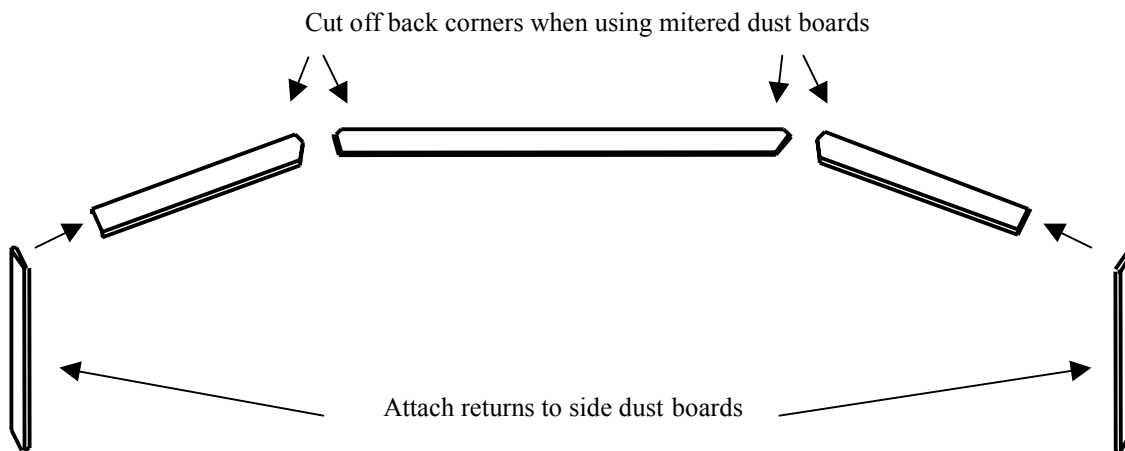
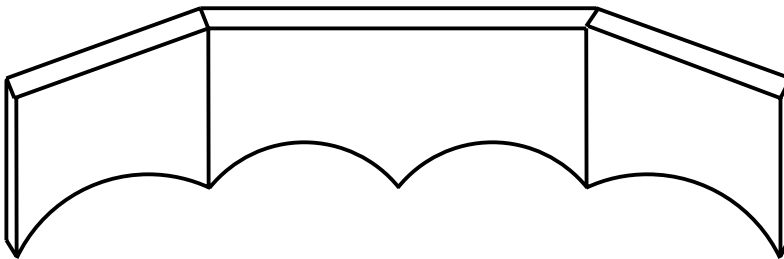
Arches have the dust board mounted over the top edge of the face board

FIRMAFLEX™ GUIDELINES FOR USE

SELF-HINGING FOR BAY, CORNER AND LARGE WINDOW TREATMENTS

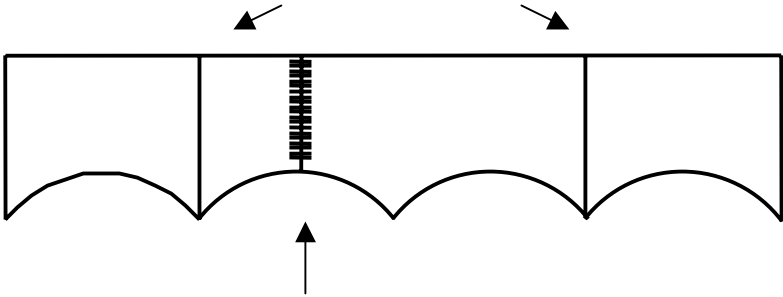
- FirmaFlex™ can be hinged for bay, corner and large window applications where hardware hinges are normally used.
- Hinges are created in FirmaFlex by scoring the material without cutting all the way through it.
- Score by using either a 45mm blade, or if you are using the Fiskars® rotary cutter with two positions, engage the 65mm blade into the 1st position. This allows the blade to protrude enough to score the material without slicing all the way through it. Note: DO NOT attempt to score the material with a 65mm blade if your rotary cutter is not equipped with two different depth positions.
- After scoring, bend the FirmaFlex™ to create the hinge. Note: If deeper scoring is desired, bend the material to expose the hinge and gently guide a utility knife through the hinge to open it more. The more pressure applied, the more the hinge will bend.
- Bay window cornices can be made in one piece by hinging at the angles. Note: Prior to hinging, it may be necessary to splice a few pieces together in order to achieve the desired width.
- Dust boards are cut in separate pieces. They can be cut straight or mitered at the inside corners. Note: If mitering the dust boards, cut off corners as shown below. This insures a better fit against the wall.

A finished bay cornice with a mitered dust board

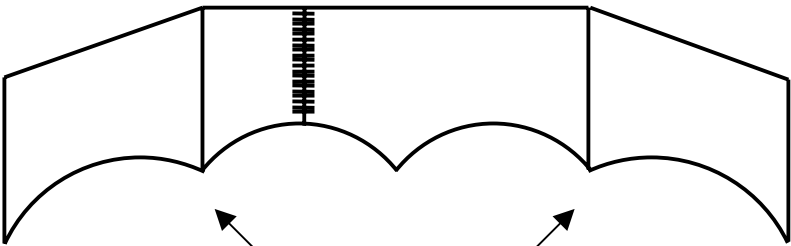


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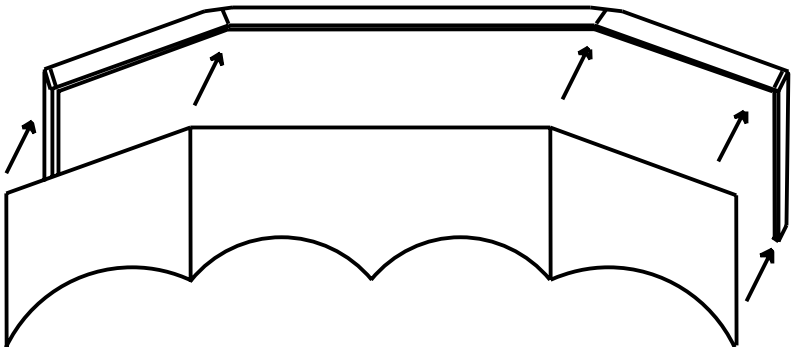
Score the face board at inside angles



Splice if necessary to achieve desired face width



Bend the face board to desired angle

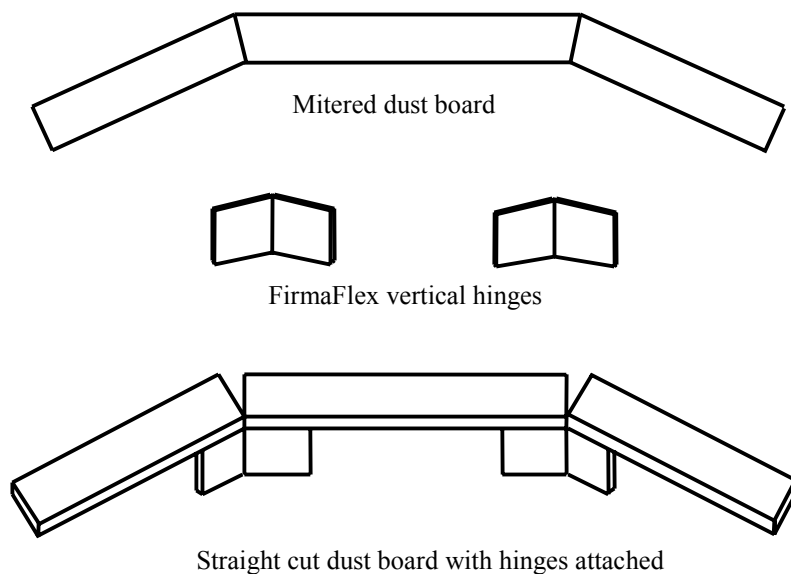


Attach the face board to front edge of dust boards and returns

FIRMAFLEX™ GUIDELINES FOR USE

VERTICAL HINGE APPLICATION

- Small pieces of FirmaFlex™ are used to create vertical hinges for soft treatments in bay, corner, and large windows.
- These hinges serve as connectors to the individual dust boards.
- The vertical design stabilizes the dust boards far better than horizontal plate hinges.
- Installation of treatments made with FirmaFlex™ hinges is faster and easier than treatments made with horizontal plate hinges.
- These vertical hinges are extremely strong and can be used with dust boards made from wood.
- Dust boards can be mitered or cut straight, as shown in the illustration below. Note: Mitered dust boards do not have as much play as straight cut dust boards do. If you choose to miter the boards, measure the angles very carefully. Straight cut dust boards may be easier to fit, however there is a gap between the dust boards, which may allow light to show. If you use straight cut dust boards, it may be necessary to cover the gap with a small piece of fabric to conceal the light gap.
- Prior to attaching the soft treatment to the dust boards, cut appropriate size hinges using small pieces of FirmaFlex™. Smaller treatments require the hinges to be approximately 8" wide x 4" high. Note: The size and number of hinges needed depends on the number of angles as well as the size and weight of the finished treatment.
- Score through each piece vertically along the 8" side.
- Bend the pieces along the scored line to create a hinge.
- Place the hinge vertically underneath the front edge of the dust boards so that they bridge the side dust board and the center dust board respectively.
- The hinge should be flush with the front of the dust board and not protruding out from the dust board.
- Fasten the hinges to the dust board using flat head wood screws that are at least 1 ¼" long.
- Dust board is now hinged into one piece and ready for the soft treatment to be mounted.
- It is not necessary to cover the hinges with lining since FirmaFlex™ is white and it will blend with the lining on the treatment.



FIRMAFLEX™ GUIDELINES FOR USE

UPHOLSTERING

- Upholster FirmaFlex™ using the same tools and techniques as with wood treatments.
- Recommended staple length for most upholstery is $\frac{3}{8}$ ".
- Recommended staple length when attaching welt cord and/or tack strip to the edge of a piece is $\frac{1}{2}$ " or longer.
- Recommended staple length when stapling multiple layers of fabric or thick foam into FirmaFlex™ is $\frac{1}{2}$ " or longer, depending on the specific project.
- Always place staples parallel to the edge you are working on. Note: If fabric is pulled up from the side, staples may be forced out of the material, however if fabric is pulled perpendicular to the staples, they will remain secure unless excessive force is used.
- Staples are removed using a stapler puller. Note: Most often the fabric will not be harmed during the staple removal process.

HEADBOARD APPLICATIONS

- Light weight headboards can be made using FirmaFlex™.
- Attach headboards without legs directly to the wall using slot plates or flush mounting brackets.
- FirmaFlex™ can be combined with wood. Note: Headboards made with legs should either have legs constructed with multiple layers of FirmaFlex™ or legs made with wood to ensure stability.
- Thick foam can be stapled directly into FirmaFlex™. Note: When working with thick foam, use $\frac{1}{2}$ " staples. DO NOT use $\frac{3}{8}$ " staples, they will not hold the foam securely.

FUSIBLE APPLICATIONS

- FirmaFlex™ is heat resistant; making it an ideal substructure for fusible fabric applications.
- Fabrics are fused to the material using fusible web and a steam iron.
- Small unpadded cornices, embellishments, floats and bulletin boards are fast and easy to fabricate. Note: Fusing fabric over spliced areas is not recommended, as the outline of staples at the joint may be visible.