Please read these important instructions before installation of Chroma® panels.

Storage Instructions

Chroma should be stored at room temperature in a dry environment (72°F, 25% RH) that is not exposed to direct sunlight or heat. Chroma panels should be stored horizontally (flat) as delivered to prevent warpage. The paper protective masking MUST be removed within 30 days of receiving the shipment to prevent adhesive from sticking to the panel.

Cutting/Drilling Recommendations

SAW CUTTING

To cut 3form Chroma, use an overhead panel saw, beam type panel saw or a table saw. A triple chip carbide tipped saw blade is recommended for cutting Chroma sheets. Best results are achieved with teeth that have a clearance angle (top clearance) of 10°-15°with a rake or hook angle of 0°-5° positive. For 10", 12" and 14" diameter blades, 60 tooth blades are recommended. The SFM should be between 6,000 and 14,000 ft/min (1,830 and 4,270 m/min). Typical feed rates for Chroma are 100" to 300" per minute. For table or panel saws with the blade mounted underneath, the blade should protrude approximately 1/8" to 1/2" above the Chroma panel. On overhead blade-mounted panel saws, the blade should protrude 1/32" through the material.

DRILLING

Drills designed especially for plastics are available and it is suggested that the fabricator utilize such drills on Chroma. Tip angles should be 60°- 90°. SDrill speeds up to 1,750 rpm are best for smaller holes, while speeds as low as 350 rpm can work for larger holes. Peripheral speeds of twist drills for Chroma ordinarily range from 20 to 160 ft. (6 to 48.8 m) per minute. The rate of drill feed into the plastic sheet generally varies from 0.001 to 0.015 in (0.0254 to 0.381 mm) per revolution.

ROUTING

For manual routing, a sharp two-flute 1-1/8" (28.5 mm) diameter straight cutter produces very smooth edges. When cutting Chroma using a CNC router, a solid carbide, up-spiral "O" flute router bit is recommended for both hogging and finishing. 3form recommends using 1/2" diameter tooling with 3form Chroma. Onsrud 52-700 series and 52-600 series both provide good cuts. 3form Chroma should be cut using a SFM between 500 - 1,800 ft/min with a chip load between 0.004" and 0.015". Normal tool speeds for a 1/2" tool are 18,000 rpm and 500 in/min. Tools with a flat faced cutter are recommended for engraving applications. Onsrud 66-300 series engraver tools are recommended for engraving. Recommended engraving speeds are 9,000 -10,000 rpm and feed rates at 55 to 65 in/min. Chip load should be between 0.003" and 0.006" per tooth.

CHROMA REFLECT

3form Chroma Reflect has a different material construct than 3form Chroma. When cutting panels using table saws or panels saws where the blade is situated below the panel, the back side (reflect side) of the panel needs to be facing UP. The back side of the panel should be facing down if it is being cut by a circular saw or a panel saw where the blade is above the panel. DO NOT cut Chroma Reflect with a dull or used blade. To insure a quality cut the use of MDF as a top board to reduce chatter is highly recommended.

Chroma Reflect panels can be cut with a CNC router or a plunge router. Chroma Reflect MUST be scored with a 1/16" or 1/8" blade or tool before routing. All CNC cutting must be done from the back side. Chroma Reflect panels CAN NOT be cut with a jig saw or reciprocating saw.

CNC ENGRAVING

TOOL	DIAMETER	# OF FLUTES	RPM	FEED RATE (IPM)	SFM	CHIP LOAD
66-327	1/2"	2	18,000	200	2,358	0.0056"
60-249	1/2"	3	12,000	200	1,572	0.0056"

CNC CUTTING

TOOL	DIAMETER	# OF FLUTES	RPM	FEED RATE (IPM)	SFM	CHIP LOAD
52-702	1/2"	2	18,000	250	2,358	0.0069"

PANEL SAW CUTTING

TOOL	DIAMETER	# OF TEETH	RPM	FEED RATE (IPM)	SFM	CHIP LOAD
1/2"	14.96"	84	4,800	600	18,813	0.00148"
1"	1/2"	84	4,800	528	18,813	0.00130"

TABLE SAW

SAW BLADE	BLADE DIAMETER	# OF TEETH	RPM	FEED RATE	SFM
NO-MELT	12"	60	4000	200	12,576

Refinishing

Materials needed: Random Dual Action Orbital Sander, Sandpaper (80 micron or 220 grit), Water Spray Bottle

You must sand the entire surface of the Chroma when refinishing the panel. Begin sanding the surface using an orbital speed

(10,000-12,000 rpm) in small random circular movements. Continue sanding until the surface is free of the scratches that were caused by the coarse paper in the previous step. Clean the surface with a mixture of mild detergent and clean water using a clean, dry cotton cloth. Finish by applying Invisible Shield.

Bonding

Two-part adhesives are recommended when bonding Chroma to itself or dissimilar plastics. Plexus Acrybond MA685 is effective when bonding Chroma panels to other Chroma panels. Consult the 3form Adhesives Matrix (available online) or call the 3form Technical Service desk at 877-649-2670 for additional bonding questions.

-DO NOT use Cyanoacrylate or solvent type thread locking materials (Loctite®) with Chroma.

-Use mechanical fastening solutions (eg. Nylok Blue Patch, Teflon tape) to more permanently secure hardware.

Expansion and Contraction

Chroma will expand or contract with temperature fluctuations. Special care should be taken when installing Chroma before a building's HVAC system has been turned on. All holes for hardware should be oversized to allow for temperature fluctuations. All channels or frames should leave room for the product to fluctuate inside the channel. For expansion/contraction estimates check the Chroma Specification sheet at: http://www.3-form.com/download_files.php

Frequently Asked Questions

HOW DO YOU CLEAN CHROMA?

Rinse sheets with lukewarm water. Remove dust and dirt with a soft cloth or sponge with a solution of mild soap and water. A 50:50 solution of isopropyl alcohol and water also works well. DO NOT use solvents such as acetone, benzene, gasoline, carbon tetrachloride, xylene, toluene, ketones, or lacquer thinner to clean Chroma.

DOES CHROMA CHANGE COLOR OVER TIME (YELLOW) FOR AN INTERIOR APPLICATION?

Chroma will not yellow over time due to interior lighting (florescent, incandescent or halogen) over time.

HOW DO I REMOVE RESIDUE AFTER THE PROTECTIVE PAPER IS REMOVED?

Peel coat should be removed within 30 days of receiving the shipment. If adhesive residue is left on the sheet, use GOO GONE® to remove the residue. If problems persist, please contact the 3form Technical Support.

Application Limitations

Like any thermoplastic, Chroma has some performance limitations under specific conditions and in particular environments. When selecting a product, the environment and the conditions under which the product is to be used should be considered by the user. Consult the Chroma specification sheet for additional information.

Warranty

3form, Inc. warrants for a period of up to one year from the date of shipment that its products will conform to the product specifications supplied by 3form are free from defects in materials and workmanship. Claims made under this limited warranty must be submitted to 3form, Inc. in writing by no later than one year after the shipment of the product. In no event does this limited warranty cover any costs relating to (re)installation or fabrication expense or any other direct or indirect loss which may result from product failure. The full 3form product warranty is available on www.3-form.com. 3form offers an extended warranty for Chroma XT.

THIS WARRANTY DOES NOT COVER:

1. Damage resulting from unusual wear and tear on the product;
2. Damage resulting from improper specification, fabrication or installation;
3. Damage resulting from failure to maintain according to 3form product usage guidelines;
4. Damage resulting from accident or abuse;
5. Damage resulting from the failure of a third-party's product;
6. Damage to custom products designed and manufactured with custom inserts or based on custom specifications
7. Chromations in dye lots, gauges, textures, and finishes, that may vary slightly between the samples and actual panels delivered.
8. Damage resulting to panels if plastic bushings are not used during installation and throughout lifetime of panels.