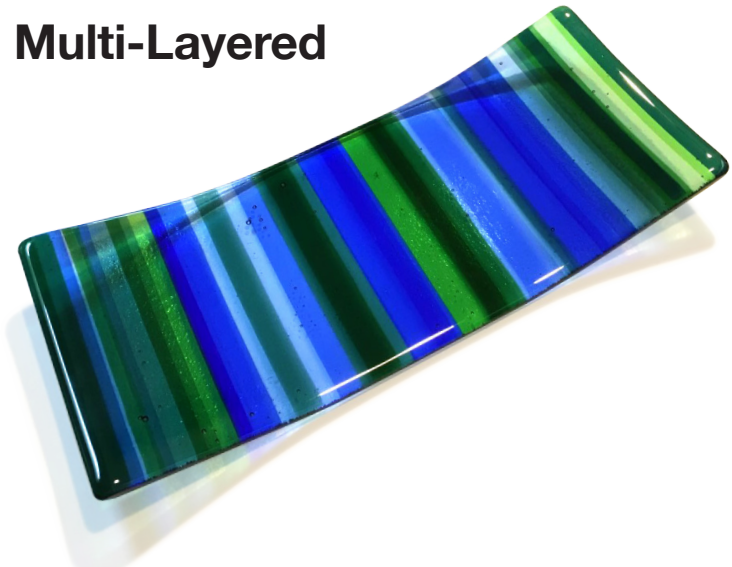
Using Damming Molds to Create Multi-Layered Patterns of Transparent Color



Fused projects featuring stripes, curves and plaid designs can be created with two layers of glass without requiring damming (the building of a “wall” around a project that will be thicker than 1/4" when full-fused). Damming projects by using fiber paper, damming bricks, etc., can yield thicker, often more dramatic designs, but can be time consuming, and often require additional work to clean up the edges of the fired pieces.

By utilizing a well-designed damming mold however, like the Patty Gray damming molds from Creative Paradise Inc., you can easily deepen color, tint colors and add dimension. Plus the edges of the finished pieces generally come out much cleaner, so you can usually move straight into the slumping phase without additional cold-working of rough edges.

Transparent Plaids and Stripes are illustrated here, and we also offer a Project Guide with step-by-step instruction to create a free-form layered wave design (“Dammed Waves”), but the possibilities are numerous. When layering a piece 3-4 layers deep, adding pieces of Clear glass can add dimension and pull darker colors back a bit to avoid heavy, over-saturated areas, as well as creating lovely lighter tints of the chosen palette.

You can either create your pattern to follow ahead of time, or cut out glass pieces and just design as you go. If choosing a plaid, keep in mind that you will be switching directions of the cuts in the 2nd layer, 3rd layer, etc. If the mold is rectangular, that will drive your plan for the length of your cuts in layers 1, 2, 3, etc. as you will alternate vertical and horizontal lengths of glass moving through the layers to achieve the plaid design. Start with the first layer, laying pieces down on your drawn mold guide to make sure all pieces fit fairly well together, then start adding your second layer, etc.

FIRST STEP

Choose the damming mold you want to use for your project. Projects shown in this guide were made using the rectangular #GM178, 12.5" x 5" and the #GM110 10" x 8" molds.

SECOND STEP

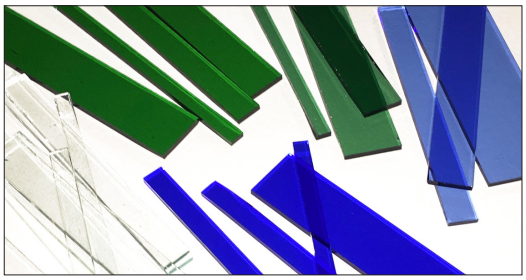
Choose your design (Plaid, Stripes, etc.) and color palette.

NEXT

Create a “Mold Guide” — Draw a box, rectangle, or square to the dimensions of the interior footprint of your mold onto a piece of White paper. This guide allows you to make sure your cuts are true to size and help you plan out how your layers look when stacked, before placing any glass into the mold. This Mold Guide is not a required step, but will save you time in the long run, allow you to make any adjustments to the pieces and prevent roughing up the boron nitride primer on the inside of the mold walls as you stack your pieces into the mold.

NOTE: As you build your layers, remember that each layer should be uniform in surface thickness. Because we are using a damming mold with walls, and overlapping layers of different widths, shapes, etc., any large gaps existing under any one layer, especially down in the mold’s lower layers might create air pockets during firing.

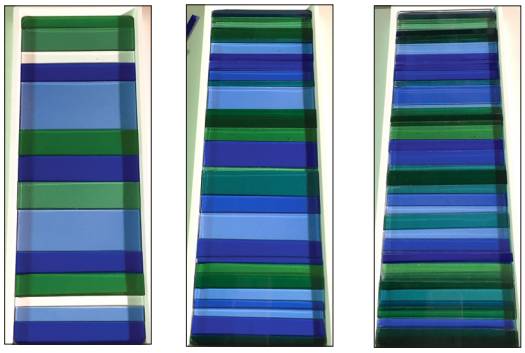
Tinted Stripes Design



Many colors will work well with this type of design. For this example, we used the following colors: Clear 100S-ICE-F, Pale Blue 100S-ICE-F, Light Blue 132S-F, Dark Blue 136S-F, Sea Green 528-1S-F & Light Green 121S-F. (The finished piece is shown on page 1.)

Using three to four transparent colors, plus Clear works well when looking to create multiple color variations. Adding strips of Clear glass also allows you to pull back the value of some colors. By partially overlapping two of the same color pieces, or stacking two to three different colors, you can create areas of richer tints, and create new variations of many colors.

In the design shown here, we used the 12.5" x 5" #GM178 mold, so all pieces measured just a hair under 5" (to let the piece easily fit into the mold) and then were cut to varying widths: 1/4" 1.5”, 3/4" 1" and 1-1/4” in each of the colors. You can see in the photos at right how the layers looked as they were stacked 3 layers deep, layer-by-layer into the mold to achieve the linear tints of all colors.



TIPS: Use the richer, darker colors on layer one and then more sparingly on upper layers for a more subtle tinted effect. Slightly nip the corner/edges of the pieces of glass that will sit at the corners of your mold, as the interior walls of the molds have slightly rounded corners (only 1/8" from the very tip is necessary).

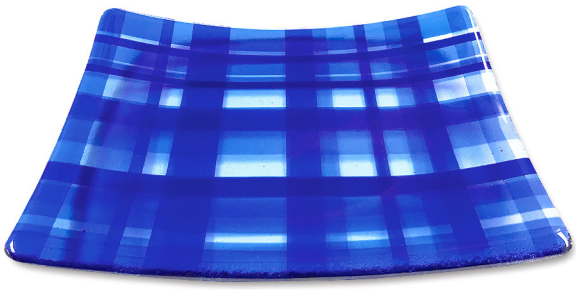
Creating Plaids

Choose a color palette that works well together on its own, as well as when combined in overlapping color combinations. Cut pieces of each color into measurements equaling the length (and the width for the alternating layers) of the mold and then 1-1/4", 1", 3/4",1/2", and 1/4" widths. As you begin to stack your layers, you will use fewer of the dark colors and more of lighter shades and Clear to create depth.

Use your “Mold Guide” to begin the process of stacking the pieces of glass for your first layer in a pleasing combination. Next, crisscross a second layer, and proceed until all layers are done and you create he plaid look you desire. Make adjustments, as needed. What you see is generally what you’ll get after fusing, so add Clear glass as needed, or swap out different widths to achieve the look you want. All layers should be composed of the same volume of glass across the surface, basically the equivalent of a solid layer of glass. Once you are happy with your design, carefully recreate in the prepared mold for firing.

The warmer toned 70’s Retro Plaid was made using: Clear 100S-ICE-F, Rust 571-1S-F, Light Amber 110-4S-F, and Light Olive 528-2S-F

Mold Preparation and Firing Schedules



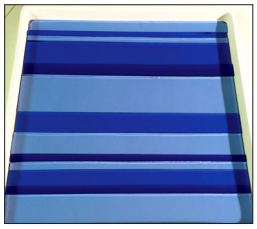
Spray the entire mold with a quality Boron Nitride spray such as MO-RE® or ZYP®. Make sure to coat the interior walls of the mold with extra care to create a smoother finished effect. Follow manufacturer's safety data sheet for handling. Allow the Boron Nitride spray to rest approximately 15 minutes on the mold before proceeding.

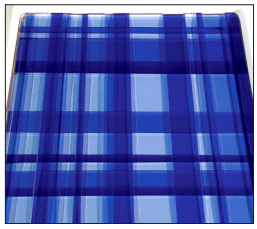
Cut a piece of PAPYROS® Kiln Shelf Paper (smooth side up, with corners of paper just slightly rounded) to use on the bottom interior surface of the primed mold. PAPYROS allows for easy glass separation from the mold and helps the air from beneath the glass to ease out around the glass to prevent eruptions, and other problems during firing. This is a critical part of the process.

When ready to fire your piece, place the dam mold atop a few, short kiln posts placed under the edge of each corner of the mold, to elevate the mold from the kiln shelf. If a kiln post is too far into the center of the mold, that area of the mold will be heated and cooled at a different rate and undesirable results will occur. We fired these projects using Patty's workshop firing schedule (shown at right), but you can also use the original schedules that are posted on Creative Paradise's website page for these Patty Gray mold products.

NOTE: Failure to use of kiln shelf paper in the base of the mold and properly elevating the mold during firing can result in eruptions and annealing problems, so avoid taking shortcuts.

Slumping: We used Slumpy's #SM-9460 and #SM-9815 molds for our projects. Choose the most appropriate slumping schedule, based upon final thickness of your pieces. Consult the firing schedule section of the Oceanside Compatible website for more information about firing.





The Blue Plaid was made using Clear 100S-ICE-F, Pale Blue 100S-ICE-F, Light Blue 132S-F, and a few narrow accent strips of Dark Blue 136S-F.

Full-Fuse Schedule We Used

Seg.	Ramp (°F per Hour)	Goal Temp (° F)	Hold Time (Minutes)
1	150	300	30
2	150	1225	60
3	600	1465	25-30
4	9999*	950	90
5	100	700	5

* As fast as possible

Slump Schedule We Used

Seg.	Ramp (°F per Hour)	Goal Temp (° F)	Hold Time (Minutes)
1	250	250	15
2	250	1050	30
3	150	1225*	10*
4	400	950	60
5	200	800	10
6	300	100	0

* Adjust depending on desired results