

Ⓢ Using Milestone Decals

Milestone decals are printed on water-release backing paper coated with an adhesive made from cornstarch. A layer of wax paper protects the decal. For best results, apply decals to glass that has been taken to a full fuse. The decals can then be applied to a smooth surface for a second firing.

Applying

1. Remove the layer of wax paper.
2. Thoroughly wet the decal on its backing paper in a bowl of warm water until it uncurls. This takes about 30 seconds, depending on the temperature of the water and the size of the decal. Do not let the decal sit in the water for more than a minute or two.
3. Remove the decal (still on its backing paper) from the water, and set it on top of the glass with the decal facing up. Let it sit for 3-5 minutes, at which point the decal should release from the backing paper with no resistance. If the decal is not releasing easily, re-wet the decal and allow it to rest a while longer on your glass while the glue softens. Larger decals may need more time in the water.
4. When properly wetted, the decal will slide straight from the backing paper and should not be flipped over. Gently position the decals as desired on the clean glass. Using a small squeegee or rubber/silicone spatula (see recommendation on reverse) and a lint-free cloth, gently press the water and any air bubbles from the center of the decal toward the edge. Starting with the gentle pressure, use a clockwise motion on the piece, increasing the pressure by increments at the end of each rotation until you squeeze all the water and air bubbles from underneath the decal.
5. Once applied, you shouldn't be able to move the decal. Clean the surface with a damp, lint free towel. If possible, let the applied decal sit in a dry environment overnight (or at least a couple hours) before firing.

Safety

The decals should be fired in a well-ventilated room, preferably one that vents to the outside.

Firing

- **Make sure the kiln is ventilated up to 1000°F (535°C)**
- **The decal should be fired very slowly below 500°F (260°C)**
- For best results, apply decals to glass that has been taken to a full fuse. The decals can then be applied to a smooth surface for a second firing.
- For a slump, fuse the base sheet flat first, then apply the decal and fuse before your slump firing.

Below are suggested schedules for digital decals (four-color), metallic decals (platinum, gold, copper) and solid colors (black, blue, white) on Bullseye Glass. Your results may vary, depending on your kiln. You may want to do a few tests.

Solid Color Decals

Rate	Temperature	Hold
80°F (44°C)	185°F (85°C)	:20
175°F (97°C)	400°F (204°C)	:15
200°F (111°C)	600°F (316°C)	:15
1000°F (556°C)	1370°F (743°C)	:10

Anneal according to the needs of the piece.

Metallic Decals

Rate	Temperature	Hold
80°F (44°C)	185°F (85°C)	:20
175°F (97°C)	400°F (204°C)	:15
200°F (111°C)	600°F (316°C)	:15
1000°F (556°C)	1450°F (788°C)	:10

Anneal according to the needs of the piece.

Digital Decals

Rate	Temperature	Hold
80°F (44°C)	185°F (85°C)	:20
175°F (97°C)	400°F (204°C)	:15
200°F (111°C)	600°F (316°C)	:15
600°F (333°C)	1250°F (677°C)	:00
1000°F (556°C)	1380°F (749°C)	:10

Anneal according to the needs of the piece.

Notes on Digital Decals: These decals are not very opaque and will appear translucent on clear glass. They work best on white or other light colors and will lose strength on medium to darker shades of glass. They will adhere to glass from 600 to 1420, but are best kept in a 1275 to 1380 range. At higher temps, if the glass gets too soft, the ceramic toner particles will start spreading down the glass and will decrease the opacity.

⊕ Using Milestone Decals (continued)

Frequently Asked Questions

1. Why are the decals tinted orange/green?

A tint is used in the covercoat or flux to help ensure proper coverage of the decals. Don't fret! The tint is in the finish coating and will not be visible after firing.

2. After firing, decals have pinholes and blowouts.

What happened?

These holes come from water or air bubbles that have remained underneath the decal. With your next decal application, use warmer water and also slightly warm up the glass. Soaking in warm water should do the trick. It's also best to use a silicon or rubber tool to squeeze all of the water out and then wipe clean with a lint free cloth. You may also want to let the piece air dry for several hours before firing. Close inspection under a bright light should reveal any air bubbles that might be trapped.

3. Where can I find a small squeegee?

Mudtools sells a variety of flexible Polymer Rib squeegees. Medium or Firm Flex are recommended. mudtools.com

4. The decal wiped right off after firing. What happened?

This can sometimes happen if you neglect to remove the white paper backing or wax paper on top before applying and firing. This can also happen if you accidentally apply the decal upside down, or under fire it.

These working notes are adapted from Milestone Decals for use with Bullseye Glass. For full instructions on using Milestone Decals with ceramic or other base materials, please see their instructions at their website: milestonedecalart.com/firinginstructions