Using Milestone Decals on Ceramic/Porcelain

Milestone decals are printed on paper that is coated with a water-release adhesive made of dextrin. A layer of wax paper protects the decal.

Applying

1. Remove the layer of wax paper.
2. Thoroughly wet the decal in a bowl of warm water until it uncurls. This usually 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.
   TIP: Be sure to remove your decal from the water before it floats off the backing paper – otherwise you might accidentally apply it upside down and it will not adhere properly.
3. Place the wet decal still on the backing paper on top of your ceramic/porcelain and let it sit for 2-3 min. This allows for the glue under the decals to soften. The decals should release from the backing paper easily with no resistance. If the decal is not releasing easily, quickly re-wet and allow the decal to rest for a short while longer on your ceramic while the glue softens. Larger decals may need to rest longer in water.
4. Gently slide the decal from the backing paper at the desired position onto the clean ceramic. **The decal should sit glue side down on the ceramic** (think sticker not temporary tattoo). Using first a small squeegee (or rubber/silicone spatula) and then a lint-free cloth, gently press and push out the water from the center of the decal toward the edge following a clockwise motion. Repeat the process with increased pressure. Ideally, you will squeeze all water and any 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 to remove any watermarks and then a dry, lint-free towel to wipe it clean. If possible, let the decorated ware sit in a dry environment overnight (or at least a couple of hours) before firing.

Safety

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

Firing

General considerations:

- Make sure the kiln is well-ventilated up to 1000°F(535°C)
- The decals should be fired very slowly below 500°F (260°C)
- The non metallic decals are somewhat translucent. To help keep their density, it is best to: se them on white or light colors.

Silkscreen/Digital magenta(most of our stock):

Rate	Temperature	Hold
80°F (30°C)	185°F (85°C)	:20 min.
185°F (85°C)	400°F (200°C)	:15 min.
250°F (120°C)	700°F (370°C)	:15 min.
1000°F (540°C)	1470°F (800°C)	:15 min.

Cone 017 firing - slow setting below 700°F (370°C)

Digital Food Safe/Digital Cadmium:

Rate	Temperature	Hold
80°F (30°C)	185°F (85°C)	:20 min.
185°F (85°C)	400°F (200°C)	:15 min.
250°F (120°C)	700°F (370°C)	:15 min.
AFAP*	1420°F (800°C)	:5 min.

Cone 018 firing - slow setting below 700°F (370°C)
*AFAP: As Fast As Possible

High Temperature CONE 6:

Rate	Temperature	Hold
80°F (30°C)	185°F (85°C)	:20 min.
185°F (85°C)	400°F (200°C)	:15 min.
250°F (120°C)	700°F (370°C)	:15 min.
1000°F (540°C)	1920°F (1050°C) to 2340°F (1280°C)	:10 min.

Cone 04 to cone 9 - slow setting below 700°F (370°C)

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The most common issues decal users have result from either applying the decal upside down or from not removing all of the water and air from under the decal. Take care to read the instructions thoroughly before applying your decals.

FAQs :

1. **Why are the decals tinted yellow/orange/green?**

   We use a tint 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 the decal has fired.

2. **Why do my metallic gold, silver or copper decals look dull and brown?**

   The metallic colors need to be fired to show their luster shine. Be careful not to mix up your metallic colors as they look very similar to one another.

3. **My white decals look pink and smeared?**

   Printing white on white paper is tough! In order to ensure that the print is good and that the decals can be cut safely, we use a pink dye in our white ink. This dye will burn away during the firing. The pink dye has a tendency to migrate in the covercoat around the decals which result in a decal that looks smudged and blurry. This will not affect the quality of the fired decal.

4. **There is nothing left on the ware after firing or sometimes a small puddle of color?**

   The decals were applied upside down. The decal sits on the paper on the same side that they should sit on the ware. If the decals floats off the backing paper in the water, it is easy to lose track of what the right side is. If you aren't sure if your decal is upside down or not, visit the item on our website to see the correct orientation.

5. **After firing, the 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 ware. You can soak the ware in a tub of hot water. The ware should be not hotter than body temperature. Also, try to ensure that you use a rubber/ silicone tool to chase all the air and water out and then wipe clean and dry with a lint free cloth. You also may want to consider letting the decal air dry for several hours. A close inspection under a light after the drying period should reveal any air bubbles. Using a thin needle, pierce the bubbles and use a piece of paper towel moistened with hot water to reapply the area. If your ware or clay is very textured or undulating then it will likely be difficult to avoid pinholes and blow outs.

6. **Where can I find a small squeegee?**

   Some of our clients speak well of Flexible Rib squeegees made by Mudtools. We'd recommend the medium or firm flex. A kitchen spatula will also work in a pinch.

7. **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 underfire it. Decals that are underfired will have the ceramic pigment powder unbonded to the ware and would wipe off. It is still possible to return it to the kiln at a higher temp to get to the fusing temperature.