

PEI Potters Studio Glaze Instructions

(by Melissa Hamel, with input from Laura Cole and Cathy Arsenault)

Hi everyone! I decided to create this little manual on basic tips on how to glaze using our studio-made and decorative glazes. Please take the time to review this document as a refresher, and also to ensure that you're doing everything you can to get your glaze to work for you :)

Things to note:

- **Only studio-made glazes and decorative glazes purchased by the studio are allowed in the kiln (using a non-studio glaze can result in multiple issues with your piece and other pieces in the kiln)**
- **If you notice that a studio-made glaze is low, please mark it on the glaze blackboard as "LOW"**
- **Only members of the glaze team are to make the glazes and maintain them. If you have any questions or concerns, please speak to a glaze team member.**
- **This document includes basic techniques only. Workshops are held to discuss specialty glazing techniques.**

Part 1: Studio-Made Glazes (in big buckets)

Prepping your bisque-ware:

- Keep Resist Spots Off Your Pottery

Oil repels glaze. To ensure your glaze adheres to your pottery, keep any lotions or oils off your pottery. Even the natural oils from your hands can prevent glaze from soaking into your piece, causing your glaze to lift, crawl, and create bare spots. For best results before handling, your bisque ware keep your hands clean throughout the glazing process to keep any oils off your pottery.

- Clean Bisque Ware Before Glazing

Use a dry cloth or damp sponge to get any dust or debris off your pottery before you glaze especially after sanding. A damp sponge works great and your pottery dries fast.

It's best not to submerge your pottery in water or rinse it off under running water. Technically you can do this, but you will then have to wait for your bisque ware to dry before applying any glaze, and by that time dust and other particles may accumulate again on your pottery and affect the glaze. Glaze adheres best to clean dry pottery. Also, remember kilns hate moisture.

- Keep The Bottoms Clean

Wax the bottom of your pottery pieces and **at least ¼ inch** up the sides. When using a runny/drippy glaze or multiple layers, you **must** leave **½ inch** or more up the sides unglazed. Use a damp sponge to wipe any glaze that's left on the bottom of your piece. Because it's

been waxed, it wipes right off. Pieces that are not waxed or with bottoms that are not properly cleaned will not be fired by the kiln team.

Glazing:

- Mix Your Glaze Well (And Often)

You should always mix your glaze thoroughly and often before glazing each piece. Glaze likes to dry fast and ingredients separate (heavy particles will settle to the bottom after a few short minutes and lighter particles will stay at the top). You should stir in an up and down, zig-zag and circular motion to ensure adequate mixing. You must get all the heavy particles from the bottom of the bucket mixed into the liquid. Stirring in these different ways will bring the brush from the bottom of the glaze up to the surface, and this ensures that you are mixing all the layers of the glaze, not just the very bottom. If the glaze stays caked on the brush, it isn't stirred enough. The glaze should run off the stirring brush and have no clumps when it's ready to dip. Make sure to mix in any wet glaze on the sides of the bucket to incorporate it into the glaze. Your glaze should have the consistency of heavy cream (except clear and satin white). Each glaze varies slightly in thickness or specific gravity. The **thicker** your mixture is, the **longer** you need to stir the glaze. The **thinner** your mixture is, the **more often** you need to stir your glaze as it settles more quickly. After you have mixed your glaze well, you want to get all the little bubbles out before you dip your pottery in the glaze. **Slowly** stirring your glaze will do the trick.

Glaze on the sides of the bucket can be avoided if all members clean the inside sides of the bucket when finished glazing. Our glazes are being regularly checked by the glaze team only and adjusted for thickness. **DO NOT add or remove water** to the glazes. If you notice something that looks incorrect, please notify Melissa or a member of the glaze team.

Studio glazes are for dipping or pouring **ONLY**. They are not meant to be painted on.

- Watch Your Dipping Time

Be careful not to leave your piece in the glaze too long. Dip your pottery quickly. Add another layer after that coat is dry if needed. In general, a smooth motion of in and out with a couple of shakes to get rid of the drips will work best. One coat is all that is needed for single colour glazing.

- Let your Glaze Dry Between Coats

If you are using two glazes or doing a decorative overlap of two glazes, make sure your glaze is dry to the touch before applying another coat. Don't take a chance and hurry the process. The more layers you apply, the longer you'll have to wait before applying another coat.

- Glaze The Inside First

For most pieces, you can glaze the entire piece with one dip, but if you need to glaze in two parts, do the inside first and then the outside. You can pour the glaze on the inside of your pottery first. Swirl the glaze around as you're pouring it out or fill it up completely and pour it out quickly. You don't want to handle the glazed areas too much. If you glaze the outside first, your chances of leaving marks and messing up the outside of your piece will go way up.

- When Pouring Use Caution

When pouring the outside of your piece, try not to overlap the glaze. If this happens let the glaze dry. You can lightly brush with a CLEAN finger, any surface imperfections (air bubbles or drips).

- Work With One Glaze At A Time

It doesn't take long for the glaze to start drying out or separating. The more glazes you are working with at the same time the longer they will sit out and start to separate and dry out.

Because glazes don't show their true colors until they have been fired, glazes can easily get mixed up. I have done this on more than one occasion.

If there are inaccuracies, drip marks, or tong marks, use a clean fingertip, soft blending brush, or a very soft sponge and smooth over those parts lightly.

All marks show up after firing, so get rid of the ones you don't want.

After Glazing:

Wipe down the rim of the bucket and the groove on the lid to ensure that the bucket is sealed properly. Please use hand pressure only (not a hammer) to place the lid on properly. It doesn't need to be snapped on.

The glaze bucket should be checked every time it's used to ensure that the lid can close properly. Not having a proper fit on the bucket causes the water to evaporate from the glaze, making the glaze thicker and heavier. Please email Melissa or Marlene if a glaze seems thicker than normal.

- Take Notes

Write the glazing information down and take a picture. This helps you keep track of glaze recipes that have worked well and others that have not. Having them in an album keeps them handy and organized.

- Totally Dry Your Glazed Pottery

Please load your glazed pieces on the wire rack in the kiln room. A member of the kiln team will load your piece only once they are completely dry.

Commonly Seen Glazing Mistakes, What They Look Like, and How to Fix Them

Glazing Mistakes

Reasons/ Factors

How to avoid it?

Blisters

Excessive application of glaze might lead to the formation of blisters on the surface of your pottery. Improper way of handling clay preparation (foreign materials mixed into clay

Don't apply too much glaze; always try to work with thin layers of glazing. And if you are working with multiple layers of glazing, make sure you are drying every

accidentally) also can be the reason for this kind of small crater-like defect on the surface of your pottery.

layer properly before applying the next one.

Flaking off of the glaze

The appearance of cracking or flaking patterns on the surface of your glaze is caused by: warm glaze/cold pottery, (temperature of glaze and pottery should match), if bisqueware is wet, or if glaze is applied too thick

To avoid this defect, make sure that the temperatures match and your piece is properly dried before glazing. Also, ensure you apply a thin coat of glaze.

Bare spots/ inconsistencies in color

If you don't stir the glazing mixture continuously, the heavier elements present in the mix tend to settle down at the bottom of the container that causes a difference of thickness in the glaze. At this point, if you apply your glaze onto the pot, some essential compounds won't be present at that part of the mixture, which will later cause problems during the process of firing.

Mix the glazing mixture properly before applying it onto the pot. Also, you must cover the container properly to avoid bacteria formation in the mixture.

Crawling of the glaze

When glaze is applied too thickly, glaze is force-dried (fan, etc), temperature difference between glaze and bisque, or rough handling of glazed piece

Apply glaze in thin layers, let it dry naturally, ensure they are the same temperature, and handle delicately and seldom.

Pin holing

Again, the improper mixing of glazing or the introduction of a foreign object (dust, wax, dirt) is the reason for such kind of defects.

Always mix the glazing by whisking it continuously. The more you whisk it, the more it gives the desired result that you want for your [pottery glazing project](#). Be mindful of how you handle your piece prior to and once it's glazed.

[The Complete Guide on How To Glaze Pottery - Spinning Pots](#)

Glazing Issue	Picture
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Blisters





Flaking off of Glaze



Bare Spots



Crawling	
Pin Holing	

Part 2: Decorative Glazes

Quick Reference Chart for Decorative Glazes:

Glaze/ Info	Amaco Velvet	Duncan Underglaze	Duncan Clear	Oxides	Stains	Slips
# of coats	1-2	1-3	2-3	1	1-2	2-3
Application	Brush-on	Brush-on	Brush-on	Brush-on	Brush-on	Multiple
Clay stage	greenware or bisque	bisque	bisque	bisque or over glaze	greenware, bisque, or over glaze	greenware only
Clear glaze needed on top	Optional	No, these need nothing over them, and clear will blur colours	N/A	Optional	If color is used on greenware and clear is applied on bisque.	When slip is used on greenware then clear is applied on bisque.

Food safe	Yes, with clear coat on top.	Yes	Yes	No-Decorative use only	No - Decorative use only.	Yes, with clear coat on top
Apply to bottom of piece	Some colours may flux,use cookie	No	No	Yes	Yes only if wiped off so minimal coverage.	Yes if no other glaze is applied over slip
Matte or Glossy	Matte	Most glossy with 2- 3 coats	Most glossy with 2- 3 coats	Matte	Semi gloss	Matte
Can be mixed into clay	No	No	No	Yes	Yes but most will not be true to colour	NA

Amaco Velvet Underglazes

- Can be applied on it's own and gives a rich textural appearance of velvet or matte finish
- provides good painterly details and can be mixed with other colours to create shading and custom colour mixes
- True to color
- will not bleed into adjacent colour
- good coverage with 1-2 coats full strength - do not water down
- for brush on application (not for dipping or pouring)
- When covered with the studio clear glaze or the Brush-on Duncan Clear glaze (bright green glaze in mason jar with the underglazes) they intensify in color.
- Can be easily applied to wet clay, leather hard greenware, or bisqued pieces
- Can be used with or without clear glaze over top - Food Safe with clear glaze.
- Some colours may be applied to bottom of piece. To be safe, ensure piece is placed on a cookie and leave a note with the piece saying velvet on the bottom to advise kiln committee.

Duncan Underglazes

- Underglaze colors designed for decorating bisque.
- 1, 2, or 3 coats may be applied. 1 coat coverage = translucent. 2 coat coverage = semi-translucent or semi-opaque. 3 coat coverage = generally opaque and gloss finish.
- let dry between coats
- for brush on application (not for dipping or pouring)
- do not thin with water
- can be used in conjunction with Duncan Clear Glaze (Brush-on Duncan Clear glaze - (bright green glaze in mason jar with the underglazes) but some of the underglazes will bleed into the clear. Therefore it is recommended that you not apply clear over underglaze, and use wax resist over underglaze before brushing or dipping clear glaze on the rest of the piece.
- CANNOT be applied to bottom of pottery (WILL stick to the kiln shelf)

Duncan Underglaze Brush-On Clear

- (bright green glaze in mason jar with the underglazes)
- special clear glaze for use with other underglazes, for decorating bisque.
- 2-3 coats needed for glossy finish
- can be used as a clear glaze over the Amaco Velvet underglaze
- CANNOT be applied to bottom of pottery (WILL stick to the kiln shelf)

Oxides or Washes (plastic jars on shelf above glaze bench)

- for use on bisqued pieces
- can brush on and then wipe or wash off to highlight texture of the bisqued surface
- can paint oxide on top of glaze such as white to add a touch of colour
- will bleed into surrounding glaze for a nice soft edge
- can be used on bottom of piece if the oxide is wiped off to leave only the colour

Stains (mason jars on underglaze shelves)

- stains contain glaze materials so can not be used on the bottoms of pieces
- use on greenware, bisque or over a glaze
- 1-2 coats if used alone, 1 coat is added on top of a studio glaze
- can be used to create painterly designs on top of Monic's White
- if the stain is used on greenware and then bisque fired, a clear glaze can be added over it in the final glaze firing
- can be mixed into the clay

Slips (mason jars on underglaze shelves)

- use on wet or leather hard greenware only (not on bisqued pieces)
- 2-3 coats needed for strong colour, or 1 coat for a wash look
- can be used thickly to create a raised texture - use a squeeze bottle or heavy brush
- can be a base or background for sgraffito technique
- if left unglazed it will be a matte finish
- once the slip is bisque fired, a clear glaze can be added over it in the final glaze firing
- can be mixed into the clay
- slips contain only clay and colour so can be used on the bottoms of pieces

Troubleshooting: (Questions from members)

How to make studio-made glazes drip:

- Apply a thicker coat high up on your pottery piece to allow a lot of room to drip. Take notes and pictures and apply it slightly thicker next time if it doesn't drip enough. Matte glazes won't drip as much as glossy glazes (trial and error). Glaze will drip more on raw clay than it would on glazed clay (ie. if the bottom half of your piece is unglazed, it will drip further).

Finishes to expect from each studio-made glaze

- Studio glazes that finish glossy: Monica's gloss white, licorice, turquoise, butterscotch, forest green, variegated dove grey, spearmint, noxzema, pink, wood fired, temoku red-gold

- Studio glazes that finish matte: nutmeg, bronze green, blue jeans, satin white (these glazes are meant to be matte finish, so do not use a clear glaze over them to make them glossy).

How many coats are recommended for each:

-Studio glazes in buckets- One coat is all that is needed but multiple layers can be used for decorative effect.

-Decorative glazes- see chart provided

What glazes should I worry about sticking to the kiln shelves?

All glaze will stick to the kiln shelves so you must ensure the bottom is clean. Some glazes will run down the sides of a piece and therefore spill over onto the shelf. This is why we leave unglazed area on the bottom edges. If the glaze near the bottom is too thick, it too can run. Specific glazes to use with caution include, fog grey, variegated grey, turquoise, spearmint, limonica's white, forest green, pink, noxzema and clear.

How true are colours: Colours for glazes can vary each time but are reasonably close to the colour samples on the wall - but nothing is guaranteed in pottery

Can glaze be touched up and re-fired:

-Yes. You can do a small touch up by painting it on the bare spots or areas with poor coverage. It is not recommended to reglaze an entire piece, since this will most often result in further imperfections. Glaze needs to be dried completely before firing (the kiln team will ensure that it's dry). Keep in mind that if your glaze was running during the first fire in the kiln, it will likely run even more the second time.