

Glazed Porcelain Jungle

Dear colleagues,

It's a real privilege of mine to follow up on the "Porcelain Jungle" (if you do not have a copy, pls. let me know and I'll have one sent to you immediately) with its "Glazed" version.

If you've ever asked yourselves one of the following simple questions, then you might wish to consider to sit back, invest 18 minutes of your time and most likely this brief memo will help you out (like it helped me) to make some distinctions.

Why do some glazed porcelains seem so "real" and others "cheap looking"?

Why are glazed porcelains priced so different?

What's dry glaze application and liquid/wet one?

Before starting let me THANK YOU for willing to "tune in" once again, the market and its products are in constant change, you certainly have an excellent knowledge of your market and its products already, my aim is to contribute in some kind of extra products knowledge...in this case on "Glazed Porcelains".

I wish to start by clarifying that we'll be talking about two kinds of glaze, currently used into the porcelain tiles industry, (we will check the differences out later on) i.e.:

1. Liquid glaze (wet glaze decoration)
2. Powder glaze (dry glaze decoration)

In the following pages, we'll also identify the different kinds of machines that are used to decorate porcelain tiles, from the first generation, to the latest ones, i.e.:

1. "Flat" screen printing machine (1 same screen)
2. Rotary printing, cylindrical screens - rollprint (3/4 static screens)
3. Single rolling decorating machine - rotocolor (1 silicon roller)
4. Multiple rolling decorating machine - rotocolor (3-6 silicon rollers)
5. Single laser engraved rotating band (1 band for dry glaze)
6. Multiple laser engraved rotating bands (3 or more bands as above)
7. Colour inkjet process (Decorating with four inks and other)

We'll also take a quick look at the "Twinpress" technique which blends 2 presses (instead of the traditional one) and several of the above mentioned glazing machines.

Last but not least, we'll finish up understanding the "blending" or "colours mix" technique, that several companies offer nowadays in the market.

As in my previous "Porcelain Jungle" memo, I wish to invite you to double check all the information written below, discuss it with your

colleagues and after doing so over and over again (remember repetition

is the mother of the skill), pls. come up with your personal presentation, something much more focussed to your needs, to your products, to your kind of clientele...and above all it won't be in broken English!

In fact it's important to remember that, although THIS IS ONLY GENERAL INFORMATION (you and I know it very well, we've been in the business for a while now) your customers might not be "ready" for so many details, so much information, and we can run the risk to "over talk"...or miss our primary focus (the customer) by abandoning ourselves to an egocentric performance that would dramatically compromise our job purpose...helping our customers, not confusing them!

This is neither a "sales technique manual" nor a "news magazine", hopefully it'll reach its target of becoming:

1. Ready to use manual to refresh forgotten info.
2. Useful tool for updating your staff.
3. Fast training memo for your new staff.
4. Verifying manufacturers information.
5. Etc., Etc., Etc....

...in other words an on going coaching experience!

Glazes

I wish to start with a simple statement, which is that, glaze is "glass", that means if properly composed and fired does not have any porosity, that means it does not absorb either water or stains (easy to maintain).

We previously mentioned two kinds of glaze, i.e.:

- Liquid or base glaze (wet glaze decoration), there are many kinds, according to the used technology and the type of decoration required. In a very generic way liquid/base glaze can be transparent, opaque and a combination of the two, respectively called and classified, "high gloss" "matte" and "semi-matte". Mixed with water, is applied between the drier and the kiln.

Pros:

1. The most versatile and used
2. Easy to control
3. Affordable

Cons:

1. Not innovative
2. Can be delicate
3. Easy to copy

- Powder glaze or granito (dry glaze decoration), is composed by irregular chips (of frit) applied dry (by dispersion) by adequate equipment over a glazed (liquid) surface and fixed in place with proper fixers. Products with this kind of glaze are enhanced from both a decorative and technical standpoint. These sort of glazes, when milled and spray-dried can also be used in the pressing process (double loaded and twin press). As above it's applied between the drier and the kiln.

Pros:

1. Technology not available to every company (different)
2. Aesthetically rich and close to the real stone effect
3. Technically stronger than base glaze (slip resistance, wear, etc)

Cons:

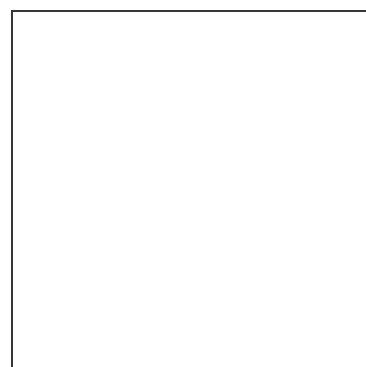
1. Not easy to control from a production standpoint
2. Can be expensive for the archived look (not very detailed look)
3. Can be difficult to maintain

The majority of the glazed porcelains are still produced with the regular liquid glaze, even if more and more companies are willing to mix both glazes and try to offer a "crossover", which thanks to its technical and aesthetical characteristics, can be used successfully in both commercial and residential environments.



liquid glaze

glazed with dry glaze



glazed with

Glazing machines and their performances

Let's start with the simplest of all, which is the so called "piana" which means flat. This machine can only print one single screen.



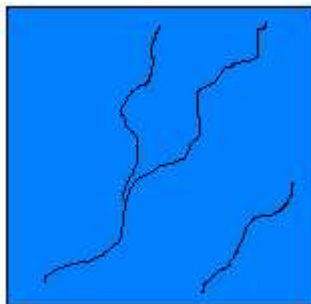
"Piana"

Pros:

1. decent definition
2. inexpensive technology

Cons:

1. screen repetition (1 single face only)
2. old and widely available technology (screen sieving marks - squares)
3. picture frames are likely to appear on all four tile edges
4. flat faced tiles can only be decorated properly



Always the same "face"

The second machine we're focussing on, is an "upgrade" of the previous one, and it's known as "rollprint". This rotary printing machine has a cylindrical screen which can reproduce 3 or more faces (depending on the size of the tile). These faces though cannot change.



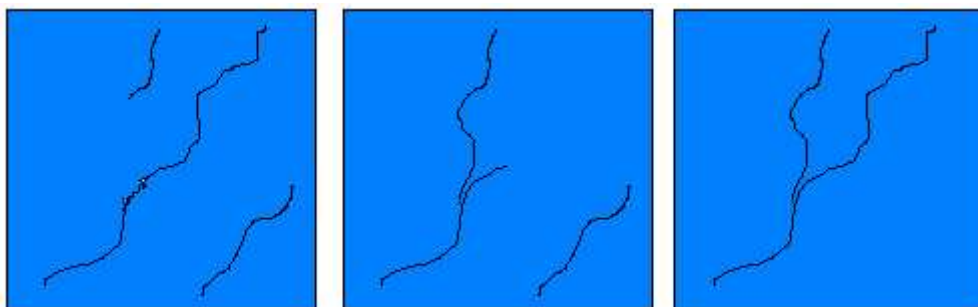
"rollprint"

Pros:

1. As above this technology is pretty inexpensive
2. Decent definition of the design (acceptable movement of the faces and "screen sieving marks" (squares).

Cons:

1. Faces do not change
2. As above, this technology is widely used and limited in depth.
3. Picture frames are likely to appear on all four tile edges
4. Flat surfaced tiles can only be decorated properly.



3/4 repetitive "faces" no random

The following machine called "rotocolor" was a real breakthrough. In fact, technology found a "simple way" of avoiding static faces and visible repetitive designs, through a laser-engraved silicone roll.



"rotocolor"

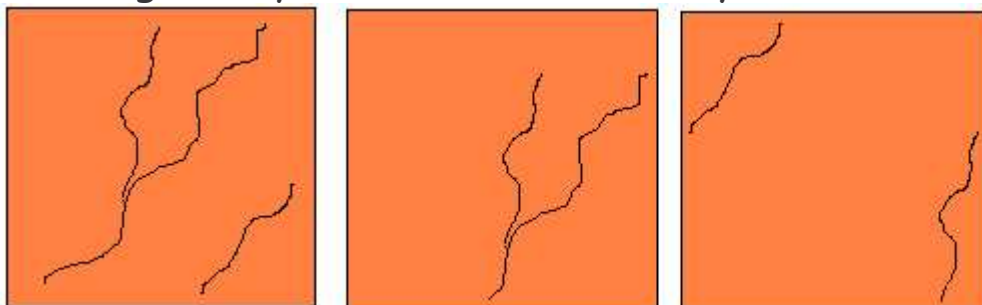
Pros:

1. High design definition (any reproduction of any stone)
2. Naturally random faces.
3. High production capacity, low glaze consumption
4. Picture frame effect almost invisible (if properly run).

Cons:

1. If one only, faces variation is limited
2. Available technology at all levels (no longer a news)
3. Limited three-dimensionality effect
4. Structured tiles can only be decorated partially.

As we can see from the following pictures, face moves from left to right only, random but it's always the same one.



1 roller "random effect"

The natural upgrade of the "rotocolor" was and is, its multiple heads version. As we can see from the following picture.



"rotocolors"

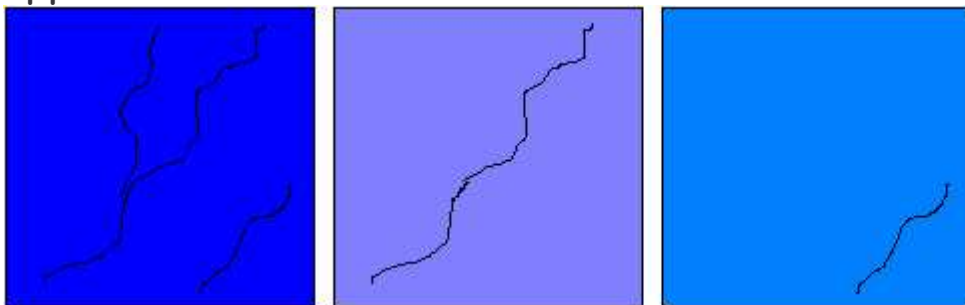
Pros:

1. All the above plus an enhanced three-dimensionality
2. Multiple random faces
3. A bit more unique than the previous technique

Cons:

1. If not perfectly aligned, tiles can be blurry
2. Tiles are more expensive than all previous techniques
3. Even this technology is easy to copy and reproduce
4. Structured tiles can only be decorated partially

With this technique, on top of the graphic variation, we can also appreciate a delicate base shade variation.



4 or more rollers "random effect"

Another very important innovation was and is the introduction of the dry-glaze decorative machines. This technology is still in its experimental stage even if the pace of its improvements are very high. There're several different machines, here we just show one of the latest, which is a synchronised colour laser engraved band.



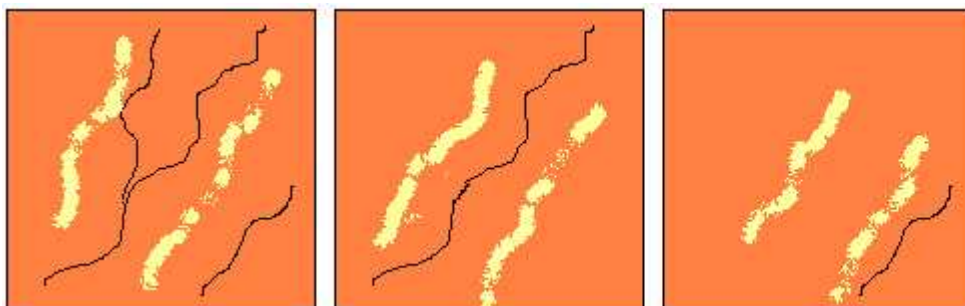
“decoratrice a secco”

Pros:

1. Extra three-dimensional effect given by the dry glaze
2. Environmentally friendly (no liquid glaze waist)
3. Tile surface technically strengthened (grip & wear)
4. Can decorate in cavities (structured surfaces) stone look.

Cons:

1. Powder (dry-glaze) dispersion drives the price high
2. Limited glazing control and definition
3. Slow production runs



similar dry glaze distribution

It's obvious that even this technology had to be improved by adding several other applications. Applications meant to enrich both the look and the technical aspect of the tile, that's why the "multiple decorating bands".



"decoratrici a secco"

Pros:

1. When used for base colour and graphic can really take the tile to the next level
2. All the above mentioned features
3. Quite unique technology, little competition
4. Can decorate in cavities (structured surfaces) stone look.

Cons:

1. Price can increase significantly
2. All the above mentioned downsides
3. "Similar" look can be archived with less expensive techniques



Multiple dry glaze applications

Last but not least is the cutting edge of the decorating machines shown below. This "high-tech" equipment is today ready to enter the mass production scenario. Improvements are happening constantly (more than 50 machines have been already sold). This technique is "borrowed" from the textile/paper industry and bases its decoration on a non-tile-contact digital reproduction of any image.



"stampante kerajet"

Not much info is available on this machine, we know that there are two kinds:

-
- a) A laser printing with ceramic powder
 - b) A inkjet printing through pigments dispensers
-

Both though used to have some issues:

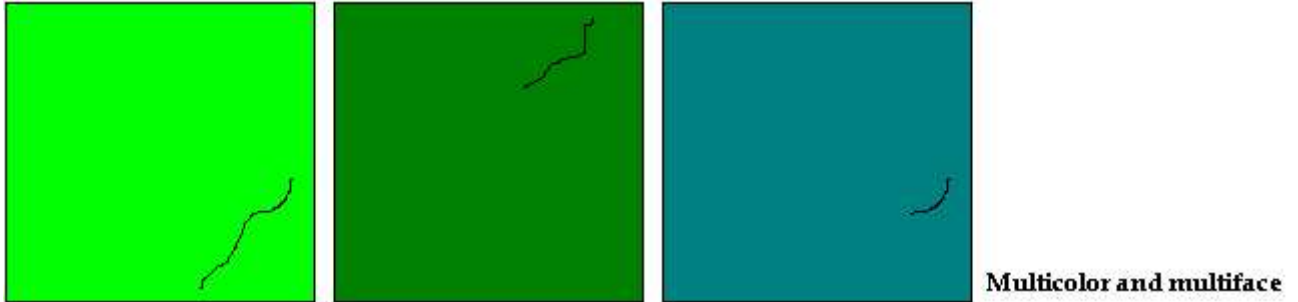
-
- a) High firing temperatures toners were not perfect
 - b) Pigments clogged dispensers since too large and hard
-

The great advantages of this innovation are:

-
1. High definition and random graphic
 2. Great shade variations
 3. Structured tiles can be perfectly decorated in cavities
-

4. Limited equipment investment if compared with other techniques as the "Twinpress" one.

5. And many others....



"TwinPress" technique

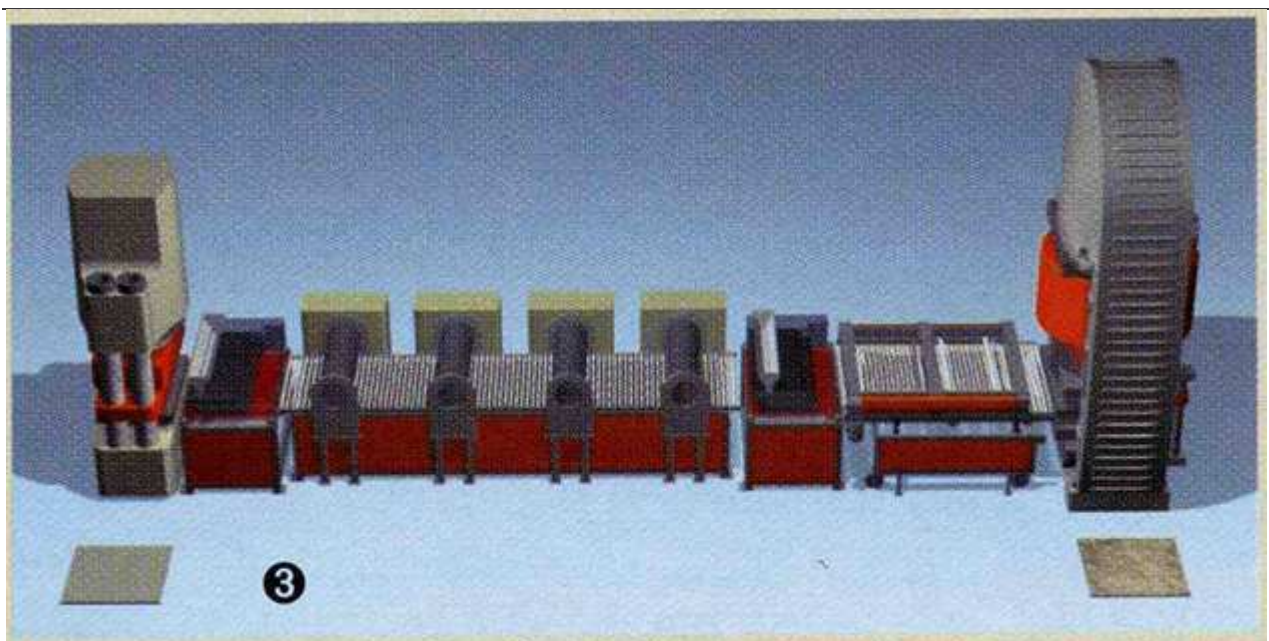
One of the few true technical innovations in the ceramic/porcelain business is the so called "TwinPress", which as you might have already heard or guessed, involves two presses instead of the traditional one.

Since this is a fairly new technique and for obvious reasons the manufacturer has all the intentions to keep it as "secret" as possible, all the listed information about it, is as general as they could be, still you will be able to clear your mind from false myths or wrong assumptions, this is the way it works:

-
- 1) the first press is a "light weight" one that all it does is pre-compacting the body of the tile (preparing the body to be decorated). This press can also provide its own decoration through powder mixes (veins, etc.)
-

- 2) then the pre-compacted body travels through all sorts of decorative machineries (according to the manufacturer's choice and design) mainly dry glaze decorations.
 - 3) The second pressing of the still unfired but fully decorated tile, shapes the piece with any desired structure.
 - 4) Most of the time, the tile is then cut/squared by another device (to avoid shape defects or edge cracks) or in case we chose to press a slab (large format) this very device, can cut the slab in several smaller formats.
 - 5) Now the tile is ready to be dried and fired.
-

Here is a partial picture of the double pressing line where we can see the first "light weight press" (left), the decorative machines (centre) and finally the "shaping heavy weight press" (right).



As usual now, let's stress a few pros and cons of the products, "born" from this double-pressing technology:

Pros:

- 1) High strength tiles
- 2) Deep/three-dimensional decoration with natural shade differences
- 3) Innovative (little competition) and environment-friendly (dry-glaze)

Cons:

- 1) High price (way more than natural stone)
- 2) If the tile is not structured, a similar effect can be archived with other less expensive techniques.
- 3) When heavily structured can be difficult to maintain



slate look

"Blending" technique

This is a very interesting simple idea now several companies are offering and it's the so called "blend" which, to make a long story short, is the repackaging of different productions.

Let's make an example. I wish to produce a "shaded tile" so I run a classical production and I obviously get 3 or more shades per colour, then instead of boxing these shades separately, I put them on the side and I mix and box them together at a later stage, so to get the shaded effect is in the same box.

Now I can either do that with one production line or if I wish to create even more variation, I can also choose to use 2 or more production lines.

Pros:

1. Very natural and rich in look
 2. Drastic reduction of dying lots and their management
(enhanced when rectified and offered in single calibre)
 3. Little competition on this offer
-

Cons:

1. High price (extra material handling and/or rectification)
 2. Can give calibres issues if not rectified
 3. Variation can be too dramatic and unpleasant
-



Conclusions

Hopefully you feel like your time was well spent, ideally you'll have a desire to go over this memo once again (or even more than once), in fact I kind of dumped quite a lot of "general information", which is unreasonable and improbable to claim to store and remember, unless continuously refreshed (especially in the beginning).

And remember, your and my job is not finished by just reading, writing or remembering a few pages, in fact "knowledge is only potential power, applied knowledge is real power", that's why I would love to challenge you to share, discuss and why not, criticize this info with your colleagues, friends, etc. and possibly improve it, spread it so other people can benefit from your service, and

appreciate your contribution to their professional lives and who knows, one day help you back in some other way..."what goes around, comes around"...or if you wish "give that what you wish to receive!"

Have a great day and thank you for reading!

Sergio Barro

E-mail: sergio.barro@theporcelainjungle.com

Educational web: www.theporcelainjungle.com

P.S.: if you have any questions or doubts or you just wish to let me have your comments/improvements, pls. do so at the a.m. numbers, I'll be happy to read them and come back to you a.s.a.p..

Ciao!
