

Decorating PLAZCRYL-PLAZCAST

PLAZCRYL-PLAZCAST can be decorated by Screen painting, Spray-painting, Digital printing or tampon printing, covered with Vinyl adhesive film or by vacuum metallization.

When choosing the decorating method a few factors should be regarded:

1. The quality of coloring and the number of colors needed.
2. The shape of the PLAZCRYL-PLAZCAST sheet to be decorated.
3. The required level of durability.
4. Will the PLAZCRYL-PLAZCAST be thermoformed after decoration?
5. The volume of production.

Preparing PLAZCRYL-PLAZCAST

When decorating PLAZCRYL-PLAZCAST, it is important to keep its surface clean. The smallest particles, surface stains and even static charges will cause uneven spread or adherence failure of the paint.

Remove the protective PE film as close as possible to the beginning of the decorating process.

Keep the surface from being stained and if necessary clean PLAZCRYL-PLAZCAST with water and soap and let the sheet dry completely before processing.

Use an ionizing air gun to remove dust and neutralize static charges.

Screen-printing

This method is very cost effective for high volume production and results in high quality coloring.

Screen-printing can be applied only on flat PLAZCRYL-PLAZCAST but if properly performed, thermoforming of the painted PLAZCRYL-PLAZCAST is possible.

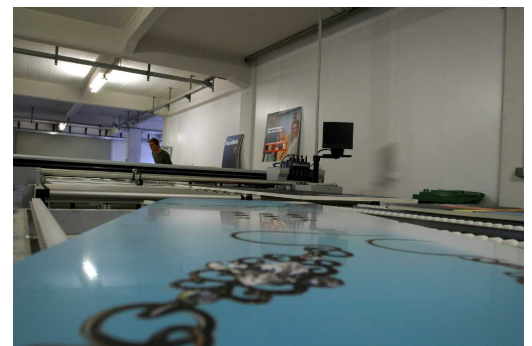
The screen is set to PLAZCRYL-PLAZCAST and then the paint is applied uniformly, passing through the open mesh on the screen transferring the pattern onto PLAZCRYL-PLAZCAST.

When screen painting two factors should be considered.

1. The paint viscosity.
2. The mesh openings.

If the paint is too diluted or the mesh is too big the paint can sag and not keep the shape of the desired print. If the paint is too thick or the mesh is too small the paint will not flow correctly through the mesh resulting in an imperfect print.

Only the right combination, of these two factors will result in quality painting.



Spray-printing

Unlike all the other methods mentioned here, the shape of PLAZCRYL-PLAZCAST does not limit Spray-Painting and formed PLAZCRYL-PLAZCAST can be sprayed.

When Spray-Painting a few factors should be considered:

1. The paint viscosity – together with the air pressure, this factor will define the paint flow. If the flow is too fast the paint will sag and if too slow a dry spray will result in a matte surface.
2. The air pressure – use the lowest air pressure.
3. Distance of paint gun from PLAZCRYL-PLAZCAST – wrongly placing the gun will cause the same problems mentioned above.
4. Moisture – the air delivered in the spray gun must be free of moisture.
5. Static electricity – ionized air delivered in the spray gun will result in a more uniform paint spread.

It is advisable to use the original PE film as a protective layer. Whenever it is necessary to remove the PE film, masking tapes or water-based masking materials can be used.

Digital-printing

This newest technology has the ability to paint individual pieces with unique designs.

The ink is ejected from a bubbler jet header, like in standard ink jet printers. The main difference is the ink applied by them. With standard ink jet printers inks are water based and they dry almost immediately on the paper media. These inks cannot be applied on plastic surfaces. The ink media on a digital printer is solvent based and it is cured by UV lamps.



Ghosting problem when printing

In order to assist in the prevention and avoidance of any issues/problems in the future, we found some of our customers have experienced a “Ghosting” phenomenon on sheets which were masked by printed protective film. “Ghost” looks like a watermark on paper but in the sheet.

1. The problem only appears after direct digital or screen printing on the sheet.
2. Not all sheets, which are digitally printed, show the phenomenon of “Ghosting”. Our experience shows a random pattern of events.
3. During a recent case study, sheets were given to two digital printing companies. When Company A carried out their normal process, there was no “Ghosting”. Sheets from the same batch, when printed by Company B, showed the phenomenon of “Ghosting”.

We do not know the determining factor/s that caused the phenomenon, but there are several different factors that we assume, influence the results:

1. Type of digital printing machine.
2. Type of ink used for digital printing.
3. Surface tension of the plastic sheet, as high tension has a negative impact.

In order to eliminate and/or minimize the risk of “Ghosting” we propose the following procedure:

- Use of an *unprinted surface protection film* on the sheet
- If a PLAZIT LOGO for those sheets is required, it should be done on the *reverse side of the sheets*, printing must be done on the side that is protected with the clear protective film, only.
- Dissipate electrostatic charges from the sheet before start printing

Adhesive film

Decorating PLAZCRYL-PLAZCAST, using this method, offers unlimited options. Different patterns, colors and surface finishing can be obtained.

The film must be carefully chosen for the desired application.

The film must be compatible with PLAZCRYL-PLAZCAST.

For specific instructions, on how to apply the film to PLAZCRYL-PLAZCAST, consult the film manufacturer.

Thermoforming PLAZCRYL-PLAZCAST with adhesive decoration film is difficult but can still be accomplished.

The decorative film manufacturer should be consulted about the conditions for thermoforming.

Paint removal

Paint removal is best done according to the instruction of the paint manufacturer.

Apply the recommended cleaner using a clean soft cloth and light pressure.

When using other cleaners, care should be taken to ensure that the ingredients are not harmful to PLAZCRYL-PLAZCAST (See Chemical resistance table), and in any case testing the cleaner on PLAZCRYL-PLAZCAST scrap is highly recommended.

All solvents, including the ones recommended by the paint producer, can cause crazing, and therefore it is necessary to anneal PLAZCRYL-PLAZCAST if it wasn't annealed before.

Sanding - Polishing

Sanding will smooth the edges of a saw cut sheet and this can be applied to any superficial defect.

Wet carborundum paper is used, either by hand or on a disc or belt sanding machine.

The recommended belt speed is 8 m/s.

Great heat is generated by the mechanical work. Water spray should be applied during sanding, to minimize overheating of the material.

The process should be done in steps, from coarse to fine abrasive grid

- ❖ Coarse-grain abrasive paper (e.g. 60 -80).
- ❖ Medium-grain abrasive paper (e.g. 220 – 300).
- ❖ Fine-grain abrasive paper (e.g. 500 - 800).
- ❖ Super Fine-grain abrasive paper (e.g. 1,500 – 10,000).

Final polishing with commercial pastes for shining car repairs will make the acrylic surface brilliant.

Flame polishing is done by the aid of a

Flame-polishing of PLAZCRYL does not require additional grinding work cycles. The edges to be polished must be sawdust free and oil free.

When lame polishing thicker than 10 mm sheets there is a risk of local overheating and inducing stress to the sheet. These stressed areas will be prone to chemical attacks and further crack formation. Proper annealing of the unit will be essential.

For flame polishing an oxyacetylene torche flame is used.

Flame temperature is between 2,700 °C and 3,000 °C.

The flame must be adjusted to contain excess oxygen (an oxidizing flame), the oxygen on the melted acrylic surface is what makes the brilliant effect.

The flame should touch the acrylic surface at 3 to 5 cm form the flame exit point (white zone of the flame).

There are commercial Hydrogen generators that are combined with a flame torch. These small units can be used in small and delicates areas.

Diamond Polishing

Commercial diamond tools with a diamond tip can be used with excellent results by standard mechanical procedures.