

Technical Information

DF18

Performance Pigments and Colors

Lead Free
Single Firing

CerDecOr – Bright-/Matt-Combination for Porcelain and Bone China

Combination of Precious Metal Preparation and Coating Flux for Decals

An interesting interplay of matt and bright decorations can be produced in a single firing step by screen-printing **CerDecOr** precious metal preparations (PMP) in combination with specially developed lead-free coating fluxes. This cost-efficient type of decoration provides a large variety of attractive decoration patterns.

The **CerDecOr** Bright-/Matt-Combination is particularly suitable for the decoration of giftware and dinnerware. The precious metal patterns covered with coating flux show excellent mechanical and dishwasher resistance.

Precious metal preparation, coating fluxes and media have been adapted to a perfect fit. The system includes two intermixable coating fluxes, both lead-free, and allows easy customizing.



Fig.: Decoration example with **CerDecOr** Bright-/Matt-Combination

We recommend the following **CerDecOr** PM preparations:

Porcelain: Bright Gold GG 5560/10
Bright White Gold GP 5566
Bright Lemon Gold GZ5550 10

Bone China: Bright Gold GG 5581/10

Processing

The **CerDecOr** Bright-/Matt-Combination is based on a perfect match of precious metal preparations, coating fluxes and media. Only the use of the original Ferro products provides accurate firing results. It is further important to carefully follow the instructions given in this brochure.

CerDecOr PM preparations for indirect screen-printing are generally supplied ready for use. During the printing process, pastes naturally lose a certain amount of solvent. In order to maintain the initial printing properties we recommend to constantly add fresh paste during printing. Pastes showing increased viscosity due to long-term storage or extensive printing may be re-conditioned by mixing with fresh material or small amounts of adequate thinning oil.

The coating flux powder should be dried at appr. 130 °C prior to pasting.

Printing of **CerDecOr** Bright-/Matt-Combination

Work should always take place in well-ventilated workshops. Room temperatures between 20-25 °C, and relative humidity of 60-70 % are considered optimum printing conditions.

1. Step: Printing the Precious Metal Preparation, polyester 120 threads /cm.

Prior to the next processing step it is important to have the prints dried very carefully.

2. Step: Printing the coating flux **10 200** (high melting) or **10 202** (low melting), or a mixture accordingly, polyester 90-120 threads/cm.

Pasting with media **80 820** or **80 3001**, ratio 10 : 7-10.

The paste should be carefully homogenized with a triple roller mill prior to printing.

Prior to the next processing step it is important to have the prints dried very carefully.

3. Step: Covercoat, e. g. **80 2043**, polyester 24 threads /cm.

Application of Decals

Before decoration, make sure that the substrate is clean and fully dry. Usually it is sufficient to rub the article with a water- or alcohol-dampened cloth or chamois leather and allow it to dry. In order to prevent moisture on the surface of the objects to be decorated caused by condensation (for example during transfer from a cool stockroom into a warm decoration room), we recommend allowing time for the ware to reach the temperature of the decoration room, and also time for evaporation of any condensation.

For best firing results, transfers should be carefully applied using a rubber squeegee or soft cloth. It is important to avoid over-stretching, as otherwise hairline cracks may occur. The addition of 1 % to 3 % softener **80 650** to the soaking water improves processing properties and prevents the appearance of fine hairline cracks. Care should also be taken that no water or gum residues remain on or underneath the decal, as this may result in a less than brilliant surface.

The freshly applied decals should be allowed to dry before firing, preferably over night, to avoid holes in the fired film.

Firing

Continuous kiln: firing temperature 800 - 900 °C, firing cycle approx. 75 - 90 minutes.

Please bear in mind that the firing result highly depends on the decorators individual firing conditions. Therefore the optimum firing cycle (heating-up, soaking at maximum temperature and cooling) should be determined by means of pre-tests.

Layer Thickness

For porcelain and bone china a maximum total layer thickness (PMP + coating flux) of 24 µm, determined prior to firing, should not be exceeded.

Color Compatibility

The recommended **CerDecOr** PM preparations show high compatibility with Ferro's lead free **Samba 100** decorating colours series.

Dishwasher Resistance

The dishwasher resistance of **CerDecOr** Bright-/Matt-Combination System is depending on the individual processing, therefore preliminary tests are indispensable.

Storage

The coating flux powders should be stored in a dry place. The containers should always be airtight. In order to exclude any adsorption of moisture it is recommended to heat the coating flux powder up to approx. 130 °C prior to pasting.

CerDecOr precious metal preparations should be stored in a cool and dry place (preferably in the refrigerator, at approximately 7 °C). Please note that PM preparations for indirect screen-printing have a shelf life of 6 months.

Decals with **CerDecOr** Bright-/Matt-Combination System should be applied and fired shortly after the printing process. In case of exceeded storage, decals may become brittle and cracks or defects may occur.

Safety Data Sheets

Data sheets providing health and safety information are available for all components of the **CerDecOr** Bright-/Matt-Combination.

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