



Bohemian and Murano Style Raised Enamel Decoration for Glass

1 General Information

The production of this high-quality decoration in its original form requires the right choice of materials, the correct mixing and combination, the right order of application as well as sufficient drying and the appropriate firing method.

To receive the best possible results we recommend that customers carry out tests under their own conditions.

2 Processing

For the production of the Bohemian and Murano style raised enamel decoration for glass the following procedure is necessary

- application of the base bright gold decoration
- firing
- application of the silk matt white
- firing (optional)
- application of the relief
- preparation and transfer of raised enamel decoration (traditionally: flower motifs)
- further decorations if necessary
- firing
- gold decoration of the relief
- firing



2.1 Application of the base bright gold decoration

- First of all, the base bright gold is applied by brush to the glass. Coloured glass is most commonly used. We recommend the use of the liquid bright gold GG 1046-12% (yellow gold), GG 1034-12% (lemon yellow) or GG 1036-12% (lemon yellow).

As an alternative, the bright gold decoration can be applied by decal or, if the form of the glass allows, by direct screen printing. For the production of decals, we recommend our bright gold paste GGP 1230/3-12% and for direct screen printing GGP 2027-12%. For the printing of the bright gold pastes, a 130-34 polyester screen can be used. For printing the covercoat, a 32-120 polyester screen has proved to be suitable

2.2 Firing of the base bright gold decoration at 540-600°C (1004-1112°F)

2.3 Application of the silk matt

- The parts of the glass surface which are not to be decorated with silk matt, are first covered with the peelable covercoat L 92. It is applied by brush and should be left to dry for approx. 30-60 minutes before applying the silk matt.

The statements concerning our products correspond to our current knowledge and experience. It is the obligation of the purchaser to examine the usefulness of the products in its intended use in each individual case. In order to prevent production losses the user has to test the preparations in connection with every other material being involved in the production process and has to be satisfied that the intended result can be consistently produced.

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- Silk matt F 190699 (brighter version) or F 210699 (matter version) are pasted with our fat oil NR. 13. We recommend a mixing ratio of 100 parts by weight silk matt to 25 parts by weight fat oil. The viscous colour paste is then thinned with turpentine oil until it is brushable.
- The brushable colour paste is then applied to the uncovered parts of the glass with a brush. Alternatively the silk matt can also be sprayed.
- After the colour paste has dried the peelable covercoat can be removed.

2.4 Firing of the silk matt at 530-580°C (986-1076°F) (optional)

- After the application of the silk matt, we recommend firing the substrate again. In this way the risk of damaging the silk matt areas during the application of the relief can be avoided.
- Generally, the second firing can be carried out after the application of the relief and further decoration colours. In this case, it is important that the decoration is well-dried before firing. The decoration should be fired slowly. In this way defects, such as cracks and flaking, can be avoided.

2.5 Application of the relief

- The flux F 050799 is particularly suitable for the relief. White enamel H 32007 can be used for painting the leaf and flower motifs. Both the flux and the white enamel should be mixed with fat oil NR.13. Here again we recommend a mixing ratio of 100 parts by weight flux or white enamel to 25 parts by weight fat oil NR.13. The paste is then thinned with turpentine oil until the required application consistency is achieved.
- The relief or the leaf and flower motifs are then applied with a brush onto the silk matt.
- After the relief and motifs have dried sufficiently (dry to touch), the raised enamel elements (eg. flowers) can be modelled and transferred to the glass.

2.6 Preparation and application of the raised enamel elements

- The raised enamels F 050799 or H 30303 are suitable for modelling the raised enamel elements, such as flower motifs.
- The raised enamel is added to a mixture made up of 2 parts Medium NR. 100 and 1 part Medium NR. 238. Medium NR. 238 is a plasticizer and prevents the modelled relief from becoming brittle. Warning: Too much Medium NR. 238 increases the drying time and can cause defects during firing. The optimum mixing ratio should be determined under the actual working conditions and methods used.

When mixing the raised enamel paste, the oil content should be kept as low as possible. This will minimize the shrinking of the relief element and ensures a good firing result.

- To begin with, the raised enamel paste is formed into a ball. The ball is applied to the glass with a modelling stick and then it is formed into the required shape with the modelling stick. Traditional Murano decorations have flower motifs modelled with raised enamel.

Moistening the modelling stick with turpentine oil eases the modelling. This prevents the raised enamel from sticking to the modelling stick.

Modelling sticks in different shapes and sizes are obtainable.

- The raised enamel elements take about 6 to 8 hours to dry at room temperature (approx. 20°C/68°F). The drying time also depends on the height of the relief element.

2.7 Further decoration

- After drying, the relief element can be painted with colours from the H 32 series. These colours are also pasted with fat oil NR. 13 and then thinned with turpentine oil until the required application consistency is achieved.

2.8 Firing at 530-550°C (986-1022°F)

It is important that the decoration is well-dried and that it is fired slowly. In this way defects, such as cracks and flaking, can be avoided.

2.9 Gold decoration of the relief

- A brush is used to apply the gold to the relief. To ensure that the gold colours match, it is recommended to use the same bright gold for the relief as was already used for the base gold.
- If the base gold was applied using a decal or by direct printing, then a brush gold with a comparable shade can be used. GGP 1230/3 (decals) and GGP 2027-12% can be combined with the bright golds GG 1034-12% or GG 1036-12%

2.10 Firing

To fire the gold decoration of the relief, the temperature should be about 30 to 40°C (86 to 104°F) lower than the firing temperature for the relief and raised enamel elements. This ensures that the gold surface does not crack.