HeraCeram® Special.

Building up ceramic margins

The shoulder ceramic range includes 7 HM (high fusing margin) and LM (low fusing margin) shoulder ceramics.

**HM/LM 1 – 6** are coordinated with the respective shades as shown in the shade chart. **HM/LM 7** is also referred to as bleach. It is a whitish opaque shoulder ceramic with increased fluorescence. It is used for masking dark areas (discoloured tooth structure) and modifying the brightness and transparency of HM or LM material.

**HM margin ceramics (high fusing)** are used in the classic manner and fired at a temperature of 870°C. **LM margin ceramics (low fusing)** are not used until the veneering is complete, i.e., after glaze firing. Due to their low firing temperature of only 790°C LM margin materials can also be used for correction e.g., the contours, pontics or contact areas.

**Framework design**

Metal free crown margins require a shoulder or, at least, deep chamfer preparations.

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**Fig. 72** The crown margin is reduced by approx. 1 mm to create space for the ceramic shoulder. The margin of the metal framework should be reduced by approx. 1 – 1.5 mm, conditioned as usual and masked with **opaque**.

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**Fig. 73** When applying the **opaque**, ensure that the metal margin is fully masked where the ceramic shoulder is to be built up.
Firstly, HeraCeram separating agent is applied to the die stone surface in the shoulder region. Any sealant applied to the die stone previously will impede the separating properties!

Any excess liquid is then absorbed to condense the ceramic slightly. Drying the margin ceramic carefully with a hair dryer increases its firmness making it safer to handle.
**HeraCeram® Special.**

Fig. 77 Once the ceramic surface has been contoured and smoothed, the crown can be released from the model again and fired.

**Correction build up**
The firing cycle is shown in the section for firing programmes.

Fig. 78 After firing, the marginal fit is checked and the changes caused by sintering compensation. The model is coated with separating agent again and the HM margin material is mixed as for the first build up. To ensure that margin material adapts properly to the fired ceramic shoulder, the ceramic shoulder should be trimmed slightly to roughen it.

Fig. 79 Once the HM margin ceramic has been applied, it is replaced on the model by tapping it gently. The excess is removed. Once dried, the restoration is released from the model again and fired.

[Start video](www.kulzer.com/video_heraceram_margin_correction)

Fig. 80 The ceramic margin fits perfectly after correction.

Fig. 81 The ceramic is then built up as usual.

Framework design
LM margin materials can be used for adding a ceramic margin after building up the restoration, i.e. after the glaze firing. They are processed the same as HM margin materials except that the firing temperature is 790°C.

LM margin ceramics are not only for building up and correcting margins, but can also be used for all other corrections, e.g. contouring or building up contact areas.

Fig. 82 Metal ceramic crown with inadequate marginal fit.
Fig. 83 Correcting the marginal fit with LM margin ceramic...

Correction build up
The firing cycle is shown in the section for firing programmes.

Fig. 84 …in the pontic and cervical regions.

Fig. 85 Finished metal ceramic crowns with ceramic margins.
Final Treatment

HeraCeram is easy to mechanically polish. For final polishing, our Signum HP Paste is ideal.

To achieve a smooth and shiny alloy surface, the polishing process should correspond to the hardness of the alloy in question. The direction of the polishing tool should be constantly changed. For high-lustre polishing with rotating linen, untreated cotton and wool buffs, only a small amount of polish should be used.

### Polishing the Ceramic

The object should be cleaned before every change of the polish. Cleaning before changing the polishing tool is not required for the same polish. Smooth alloys are pre-polished with a rubber polisher until the polished surface is free of streaks and grooves.

### Polishing the Metal Surface

Polishing is then done with a hard brush in the handpiece at low speed (5000 RPM) with a little Hera GPP 99 gold polishing paste and slight contact pressure. High-lustre polishing is carried out with a soft goats-hair brush in conjunction with the Hera GPP 99 gold polishing paste at low speed (5000 RPM) in a handpiece and with low contact pressure. The final residue of the applied paste is then removed with wool buffs.

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**Pickling the Crown Margins of Finished Workpieces**

If oxide residue remains on the crown margins of ceramic veneers, this may cause gum irritation. Pickling of finished restorations to completely remove oxide residue is therefore generally recommended to increase safety for patients. For this, pickling is done in Hera AM 99 for about 10 minutes at around 70°C. (The same bath can be used to remove oxides after oxide firing.)

Acid residue must then be removed from the restoration by washing and careful evaporation, and it should also be cleaned.