

HeraCeram® Saphir

Everyday layering.

Framework preparation

To ensure high bond strength, the framework must be sandblasted with 125 µm alumina oxide prior to veneering. High gold content, palladium free alloys must only be sandblasted at a pressure of 2–3 bar and at an obtuse angle. This prevents alumina oxide particles penetrating the surface of the framework. All other alloys can be sandblasted at a pressure of 3–4 bar.

The micro retention created by sandblasting enhances the metal ceramic bond and consequently the quality of the prosthetic restoration. Conditioning the surface is the first step toward veneering with ceramics.



Fig. 4 Trimmed framework.

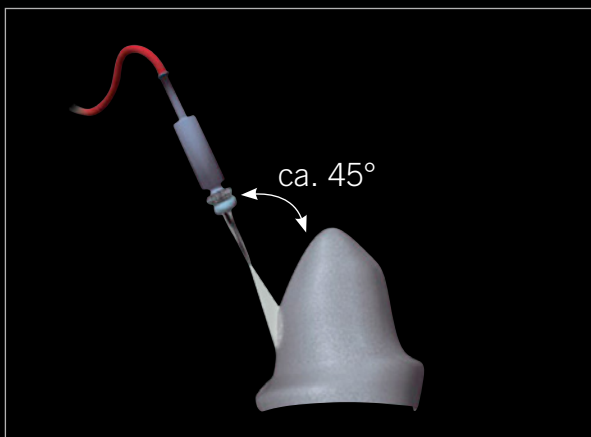


Fig. 5 Sandblasting at the correct angle.

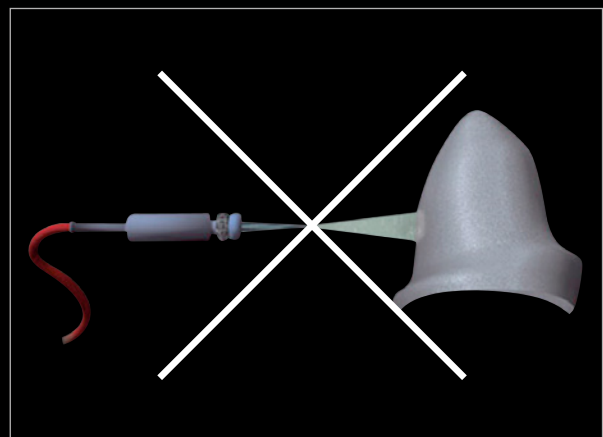


Fig. 6 Sandblasting at the incorrect angle.

Cleaning the surface of the framework prior to oxidation

The framework surface is best cleaned with a steam cleaner. After cleaning, the frameworks must no longer be touched with fingers but only with clean tweezers or haemostats.

The oxide firing settings (temperature, times, vacuum or atmosphere) are shown on the alloy packaging. Oxidation firing is a good indicator for assessing the cleanliness of the alloy. The oxide layer must be uniform and free of mottling. If the surface is mottled, the framework must be sandblasted again with alumina oxide, cleaned and the oxidation firing repeated.

When firing high gold content palladium free alloys it is highly advisable to provide the framework with firm, adequate support on the firing tray.

With Pt and Pd based alloys, the oxide layer extends deeper into the alloy than with high gold content alloys and the oxide is relatively dark. In cases where inadequate space is available and only a thin layer of ceramic can be applied thus causing difficulties with the shade, the oxide layer can be sandblasted off again with alumina oxide. The opaque is then applied directly onto the cleaned framework.

High gold content metal ceramic alloys containing zinc must be pickled after the oxide firing to remove the oxide (e.g. with Hera AM 99, 10 min).

Once they have been steam cleaned and dried, the frameworks are ready for veneering with ceramics.

HeraCeram® Saphir video playlist



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VIDEOS: Watch videos on the various stages of layering by entering the url or visit our YouTube Channel.

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Firing the ceramic

The temperatures and settings for firing HeraCeram Saphir are shown in the firing charts in the firing programmes section.

Firing cycles for high gold content, palladium free alloys: It is essential to provide the framework with firm, adequate support on the firing tray.

Firing ceramic onto soldered frameworks: The ceramic bearing surfaces should not be coated with large areas of solder.

Cooling after ceramic firing

When veneering with HeraCeram Saphir, it is no longer essential to cool the restoration slowly to allow the CTE of the ceramic to adapt to that of the alloy.



Fig. 7 Sandblasted framework.



Fig. 8 Oxide fired framework.

NP-Primer

Only required when veneering non-precious alloys.

The NP-Primer conditions non-precious metal alloy surfaces by preventing uncontrolled excessive oxidation and thus ensures that the framework surface is wetted perfectly with the opaquer.

The NP-Primer is applied very thinly (high brush pressure!) to the veneer surface with the paste opaquer brush and fired under vacuum for 1 minute at 950°C.



Fig. 9 NP-Primer applied very thinly (high brush pressure!) with paste opaquer brush.



Fig. 10 Fire at 950°C under vacuum for 1 minute.

When using the NP-Primer, non-precious metal specific expansion cooling may no longer be required.

PLEASE NOTE: With some non-precious alloys water soluble oxides may form during firing and cause yellowish discoloration in the ceramics. To prevent this discoloration, non-precious frameworks should be rinsed with water after every firing.

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Paste Opaque

The HeraCeram Saphir Paste Opaque is applied in thin coats. Paste Opaque is also fired at 880°C, whereby the pre drying phase must be adapted to the drying behaviour of the paste liquid (see the firing charts in section firing programmes).

If the Paste Opaque has become dry and stiff due to excessive storage, HeraCeram Saphir PO liquid can be added carefully to restore the ideal consistency.

After firing, the opaque should have a glossy surface.



Fig. 11 A uniform coat of Paste Opaque.



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For custom designs of the opaque layer, 3 intensive opaques are available in paste form:

- **Bleach**, a whitish opaque for reproducing extremely light shades or lightening the opaque shades.
- **Gold**, for creating a “warmer” basic tone by increasing the chroma from within the veneer.
- **Gingiva**, pink opaque for use in those regions where gingival ceramics is applied.

The full shade combination chart for HeraCeram Saphir ceramics is shown on page 43.

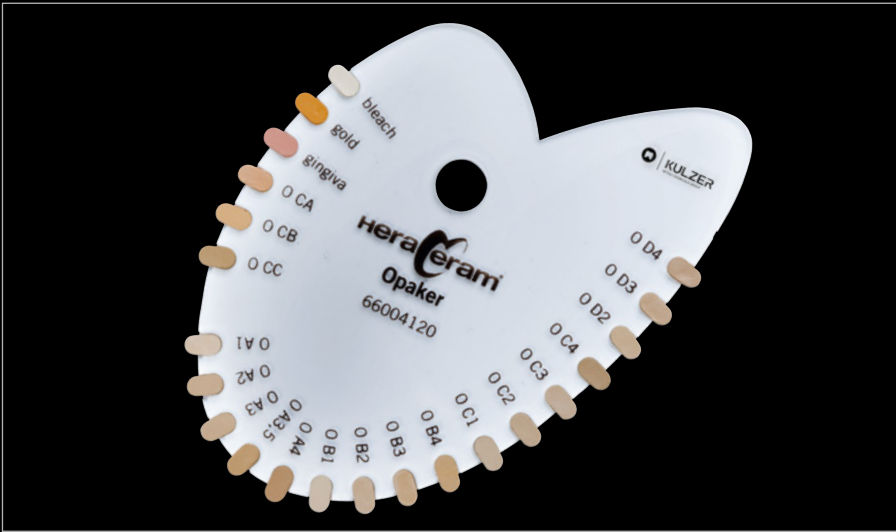


Fig. 12 The opaque shade guide.



Fig. 13 The masking power of the opaque can be seen after applying and firing the coat.

PLEASE NOTE: Cooling after firing the ceramic
The firing platform is lowered immediately after the cycle is finished. The firing tray with the restorations can be removed immediately and cooled in air.

PLEASE NOTE: If no NP-Primer is used on non-precious alloy, we recommend firing the first layer of opaque at 950°C. The ceramic firing charts are in the firing programmes section of these application guide or under kulzer.com/heraceram.