Aesthetic posterior restoration with IPS e.max Press

Horst Puderle
Andreas Dr. Gerhard Müller
Germany

Today’s dental manufacturers produce a substantial range of materials and, consequently, offer virtually limitless possibilities to use individual and case-specific working techniques. All-ceramic systems enable users to create restorations that closely resemble their natural counterparts and impress patients with their high aesthetic properties. In this report, Horst Puderle, MDT, describes the procedure of fabricating a posterior restoration with IPS e.max Press.

It has been claimed that the dental market is short-lived. However, this is not true for all areas. For instance, when Ivoclar Vivadent introduced IPS Empress in 1989, nobody suspected that this glass ceramic, made of silicon dioxide, aluminium oxide and potassium oxide with leucite as the crystal phase, would become so strongly associated with such a successful dental product as IPS Empress alongside such a successful leucite-based glass ceramic, IPS e.max Press. It shows that a dental product may be in successful use. This example demonstrates the stipulated minimum degree of strength. They are marked. A sealer is then applied to harden the surface and protect the stone die. Thereafter, the die is sealed with a coating of spacer, to ensure that the frameworks can be pressed with such a high degree of accuracy that they provide an excellent fit without requiring extensive adjustment by grinding. The spacer is applied in two coatings up to a maximum of 1 mm from the preparation margins. The thickness of the spacer should be 9 to 11 µm per coating and should be coordinated with the expansion of the investment material. After the dies have been prepared, a wax-up is fabricated using organic wax, which burns out without leaving residue and fits into the range of materials used by this system. Pressed restorations made of IPS e.max Press can be either stained or layered with IPS e.max Ceram. As the staining technique was used in the present case, a fully anatomical and functional wax pattern was created. Care should be taken to ensure that the wax pattern is free of contamination and demonstrates the stipulated minimum thickness so that an impeccable press result can be attained (Fig. 2). Exact contouring in the area of the preparation margins is particularly vital. The preparation margins should not be over-contoured, as this would entail time-consuming and risky fitting procedures after pressing. Hint: The subsequent application and firing of the stains and glaze materials results in a slight increase in vertical dimension. Hence, only light occlusal contacts should be created when contouring the restoration.

Investment as you like it: conventional or rapid?

It is advisable to closely follow the manufacturer’s directions when spraying the restorations. Deviations from directions may result in failure (Fig. 3). The sprues are attached at the tip of the Alox Plunger in the course of the cooling phase at a distance of 10 mm to the silicone ring should be observed. It is a matter of personal preference whether a conventional or speed investment material is used. The highly translucent IPS e.max Press HT ingot is best used in conjunction with the staining technique (Fig. 4). Neither the ingot nor the Alox Plunger should be preheated before inserting them. Basically, before the preheating cycle of the investment ring has been completed, the cold IPS e.max Alum Plunger is coated with separator to prevent it from sticking to the press ingot (Fig. 5). The cold ingot and the part of the cold IPS e.max Alum Plunger that has been coated with separator are inserted into the hot investment ring and the press programme is started. Preferably, an investment ring is broken into two at the predetermined breaking point (Fig. 6). If necessary, a plaster knife may be used to complete this step.

As a general rule, the pressed obturators are always divested using polishing beads only; rough divestment is carried out at 4 bar pressure and fine divestment at 2 bar. The pressed objects demonstrate an exceptionally homogeneous surface immediately after having been divested. The restorations are checked for accuracy of fit in the usual proven manner using a luting spray to render possible premature contacts visible. Attention: Pressed IPS e.max restorations should only be minimally adjusted. Furthermore, tungsten carbide burs are unsuitable for use with glass-ceramic materials. The sprues are cut with fine diamond discs under cooling with water spray. Proximal contacts and premature contacts on the occlusal surfaces are removed with fine diamond discs.

Fig. 1. After the working models have been completed, the clearly visible margins are defined. – Fig. 2. It is essential to avoid contamination of the wax and to observe the required minimum thickness when containing the restorations, to ensure an impeccable press result. – Fig. 3. The sprues are attached at the thickest part of the restoration. The wax wire should be 1 to 1.5 mm long and the total height should not exceed 16 mm. – Fig. 4. The Alox Plunger should be preheated before inserting it in the press procedure. – Fig. 5. The Alox Plunger is dipped into IPS e.max Press separator to prevent the plunger and ingot from sticking together during pressing. – Fig. 6. The EP 600 ceramic furnace from Ivoclar Vivadent provides excellent pressing. This furnace is easy to operate and features an easy-to-read display. – Fig. 7. The investment ring is separated using a large separating disc. – Fig. 8. – Fig. 9. – Fig. 10. – Fig. 11. – Fig. 12.
Introducing A-dec 300

A-dec 300™. Another excellent choice from the leader of dental equipment solutions in North America. Stylish and compact. A-dec 300 is a complete system that fits both small spaces and conservative budgets. With a robust design, great access and minimal maintenance. A-dec 300 is also backed by A-dec’s legendary service and support. Exactly the choice you demand.

a healthy NEW choice for dentistry

Find out why the NEW A-dec 300 is a good choice for your practice.
Contact A-dec at +1.503.538-7478 or visit www.a-dec300.com
surface are best adjusted using the ceramic polishers No. 9690/9691 from KOMET Brasseler according to Ivoclar Vivadent’s recommendations on the use of polishing instruments for glass-ceramic materials. The more homogeneous the surface is before glaze firing is performed, the better the result.

The press ceramic displays its dynamic optical characteristics when fitted on a model. A pressed sample carrier impressively shows the opalescent properties and dynamic shade behaviour of the material in transmitted light (Figs. 9 & 10). In addition, the material demonstrates excellent fluorescence (Figs. 11 & 12).

Accurately characterised restorations

The inlays are characterised with shades or stains. Several staining procedures and firing cycles can be conducted until the desired shade intensity and degree of lustre is achieved. However, the staining materials should always be applied in thin layers only.

After completion of glaze firing, the restorations are polished mechanically. Felt polishers and diamond-powder polishing pastes are particularly suitable for this purpose. Upon completion, the restoration is inspected on an untreated model (Fig. 15). If necessary, the contact points are adjusted. The true-to-nature effect of the material results in excellent restorations (Fig. 14).

The teeth onto which these fine pieces of craftsmanship are placed are isolated with a rubber dam (Fig. 15) to make sure that the patient does not ingest or choke on the restorations.

Conclusion

New innovative routes can only be followed if a team pursues the same objectives in terms of quality and aesthetics. Only if the dentist and dental technician work hand in glove at all stages of the restoration process, ensuring a flawless preparation design, accurate impression-taking and appropriate final finishing, is it possible to accomplish aesthetic restorations that meet the exacting requirements of discerning patients (Fig. 16).

We are impressed by the new IPS e.max Press HT ceramic from Ivoclar Vivadent. This ceramic system has all the components required by the dental ceramist to work efficiently. IPS e.max Press provides a fast and reliable route to creating highly aesthetic ceramic restorations that blend seamlessly into their natural surroundings.

Dr Horst Polleter has his own dental labory in Reichenschwand in Germany.

Dr Gerhard Müller currently runs a dental practice in Nuremberg in Germany.

Greater New York Dental Meeting

The Largest Dental Convention/Exhibition/Congress in the United States

NO Pre-Registration Fee!

MEETING DATES: NOVEMBER 27TH - DECEMBER 2ND

EXHIBIT DATES: NOVEMBER 29TH - DECEMBER 2ND

For More Information:
Greater New York Dental Meeting™
570 Seventh Avenue - Suite 800
New York, NY 10018 USA
Tel: +1 (212) 398-6922
Fax: +1 (212) 398-6934
E-mail: info@gnydm.com
Website: www.gnydm.com

Please send me more information about...
- Attending the Greater New York Dental Meeting
- Participating as a guest host and receiving free CE
- I speak [enter language] and am willing to assist international guests

Name
Address
City, State, Zip/Country Code
Telephone E-mail

Fax or mail this to:
Greater New York Dental Meeting or visit our website: www.gnydm.com for more information.