Report of use of a new fast-setting temporary crown and bridge material, complete with repair system

(tempofit® complete system, fast-setting with smartrepair, a light-curing repair material from Detax)

by Dr. Roland Schmidt, Lünen

Materials and Methods

There is a variety of systems for the fabrication of temporary crowns and bridges. These include powder-liquid systems. These are used widely but have two important disadvantages: they shrink and they produce heat during polymerisation. Light-curing substances which continue to be available on the market have not become popular.

The group of bis-acrylics has been in existence for some time. The products of this group of substances are distinguished by the fact that they do not cause pulpal and gingival irritation because of their low polymerisation temperature. These materials are also characterised by their neutral taste and biocompatibility.

Introduction

tempofit® is one of the bis- acrylics; this is a complete system for short- and long-term temporary treatment from the Detax company, first presented at IDS in 1999.

We have had good experience with using this material system in our practice. The material is currently available in colours A 2 and A 3.5. It can be polished to a high sheen and can be characterised individually with light-curing composites, so that these temporary crowns and bridges also meet higher standards. The proportion is two to one using the Automix2 dispenser and the corresponding mixing cannulas with blue connectors. These cannulas fit the wide gap between the protrusion openings on the cartridge to prevent cross contamination of the material. Due to direct application there is no unnecessary waste of material, which is otherwise frequent. The patient finds it pleasant that the repositioned model can be removed again from the mouth after just 2 minutes and that the material is tasteless.

Initial situation

It happens frequently that temporary crowns have no tight fit, for instance because of air bubbles at the margin of preparation. This usually requires the fabrication of a second crown with doubled use of time and material. For the first time a repair set is available for tempofit® from the Detax company of Ettlingen under the name smartrepair®. This allows mistakes in the temporary crowns to be corrected, or they can be shaped and supplemented if the model does not offer an optimum basis for aesthetically acceptable interim crowns.

Example: fabrication of a temporary bridge with cervical margin supplementation

The following example documents the construction of a temporary bridge and correction of an air bubble.

The situation: Replacement of a bridge from 24 to 26 with missing five.
An alginate impression was taken before removing the old bridge. The interdental ridges and the excess impression material from underneath the bridge were excised. The impression should be kept moist until the temporary bridge is made. The old bridge was then removed, prepared and areas of excavation underneath were filled. The impression was dried directly before filling with tempofit®. The Automix2 mixing gun belonging to the system ensures automatic mixing of the material during filling when the tempofit® cannulas are used. The first pea-sized quantity extruded is discarded and the impression is filled with the mixture up to the cervical margin.(Fig.1)
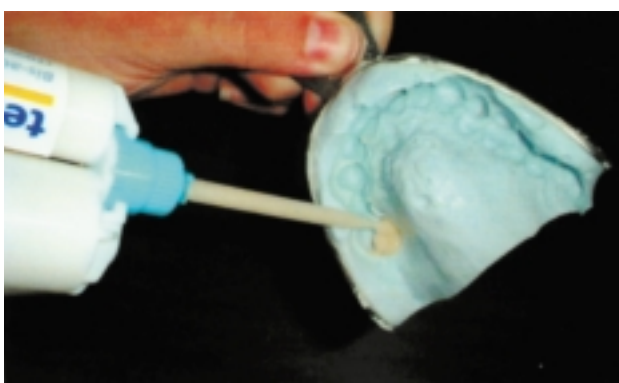
The impression is then replaced on
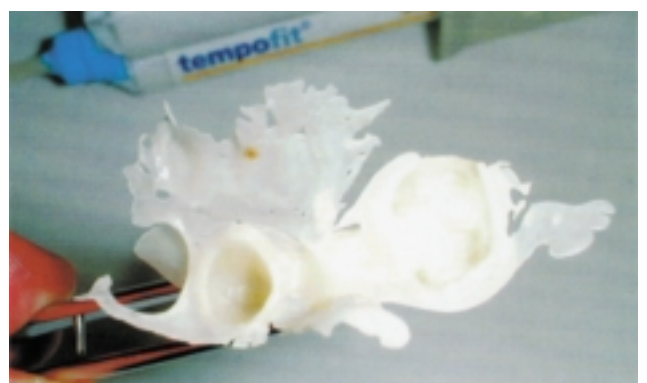

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

the prepared stumps for 1½ minutes. After this time tempofit® has reached a hard elastic consistency and can be trimmed with a fine scissors. (Fig. 2)

The temporary bridge is then inserted again until the final hardness is reached (only about 5 minutes) and the patient is asked to close his teeth. One should ensure that areas underneath are filled as otherwise the crowns cannot be removed. The temporary bridge is then taken out and the inhibition layer on the surface produced by air oxygen is removed with isopropyl alcohol. It is processed with rotating instruments and polished on the kid leather buffing wheel. Fig. 3 shows the tempofit® bridge being tried. It can be seen that a small area is missing from the disto-cervical neck of tooth 23.

Margin supplementation with smartrepair®

Cervical margin supplementation is undertaken with the light-curing repair composite smartrepair®. The set consists of smartrepair®

composite, smartbond (one-step) and smartbrush. Smartrepair® is available in the corresponding colours to tempofit® in application syringes with exchangeable application needles. To prepare the repair, the temporary crown is cleaned and dried. The area to be corrected is then roughened with the small rose bur and the prepared area is cleaned thoroughly of dust. smartbond (one-step bonding, light-curing) is then applied sparingly with a micro paintbrush (smartbrush) to the previously roughened site and blown gently with air. After about 1 minute, the temporary bridge is replaced again and a small quantity of smartrepair® is applied directly to the marginal edge of the crown.(Fig. 4)

Light-curing takes place in situ in 20 seconds, and is then completed outside the mouth after 30 seconds. Fig. 5 shows the situation after polymerisation.
The repaired and supplemented marginal cervical region is now prepared and polished as before.

The temporary fitting was performed

with tempolink®, a temporary eugenol-free cement supplied by the same company in dispenser syringes. Fig. 6 shows the satisfactory final result.

Summary

Use of tempofit® and smartrepair® is efficient and time-saving. In particular, the short time in the mouth of only 2 minutes, which is appreciated by the patient, the low polymerisation temperature and neutral taste should be stressed.

Small defects can be remedied by the use of the repair material, without requiring much time or material. This avoids the additional costs caused by a new fabrication of the temporary crown or bridge.

Address for correspondence:

Dr. Roland Schmidt
Münsterstraße 5
44534 Lünen
mail@dr-r-schmidt.de