Cementing simply, dependably, and efficiently

Maxcem™ from Kerr is a dual-curing, self-conditioning universal cement and is sold as an auto-mixing system for the adhesive attachment of indirectly manufactured ceramic, metal, and composite restorations. Maxcem™ offers a number of outstanding advantages because the following working procedures are no longer necessary: Conditioning, etching, priming, and/or bonding of the hard tooth structure and the restoration. Moreover, the use of a rubber dam may not be necessary, and the exact dosing of the required quantity of cement from the auto-mixing syringe is achievable.

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We have been using the self-adhesive cement Maxcem™ in our dental office for six months. The cement is characterised by its simple, fast, and dependable use. Studies have been conducted which show that a minimal residual moisture of the tooth does not adversely affect the adhesive values, allowing the attachment of all-ceramic crowns, partial crowns, inlays, and posts without any problems. This is also the case for metal restorations (crowns made of metal ceramic, post-core build-ups, full metal crowns) because the adhesive strength is twice that of glass ionomer cements.

The handling of Maxcem™ is excellent. Its auto-mixing syringe provides reproducible good quality mixing without the inclusion of bubbles. A decisive advantage in comparison with the capsule system is the precise dosing of the cement. Capsule systems can be problematic when a larger number of crowns or combinations must be attached because there is either too little or too much cement. Activation and mixing of several capsules and an additional assistant are no longer necessary, saving time and reducing stress. The viscosity of the material is very low at the beginning, which allows for an exact fit.

(Fig. 1)

Relative drying of the work field

(Fig. 2)

Excesses in the gel phase

(Fig. 3)

Light polymerization

(Fig. 4)

Inserted all-ceramic crowns

The working procedures for using Maxcem™ are described as follows:

The provisional restoration must first be removed from the preparation and the preparation carefully cleaned (Fig. 1).

We avoid using any cements containing eugenol for the provisional restoration. Eugenol functions as a softener and can adversely affect the polymerisation processes of the cement. The preparation and the restoration are dried with air. The cement is applied, the restoration is inserted, and the excess is carefully removed. After about one minute, the excess has taken on a gel-like consistency and can be easily removed. This is an additional advantage when cementing extensive restorations that must sometimes be inserted into both jaws. The light from the dental reflector lamp is sufficient to initiate the light-dependent curing of the cement slowly and free of tension (Fig. 2). That is why the excess is first removed from the areas which have been well cured by the light, then from the oral and approximal areas of the restoration. The consistency of the cement becomes increasingly firm (the so-called gel phase). If the person performing the treatment wants to delay the occurrence of the gel phase, the light source should be swung slightly to one side. Once the excess has been completely removed and the approximal areas are free of cement, the final light curing can be carried out using a normal polymerization lamp. Every area is exposed to the light for 60 sec. (Fig. 3).

If a metal ceramic restoration is being attached, the patient is asked not to put any pressure on the construction for the next 60 min. This time is considered adequate to insure a complete chemical polymerization.

Maxcem™ is available in Clear, White, White-Opaque, Yellow, and Brown. This makes it possible to attach all-ceramic restorations without sacrificing their aesthetic properties. The manufacturer reports that the colour stability is permanent and that the material has a transparency similar to dentin. The self-etching effect of Maxcem™ provides good adhesion to the dentin as we have used it to attach more than 50 prosthetic restorations. We have received positive feedback regarding post-operative sensitivity, fit, and stability from our patients. After being cured, the cement is insoluble and acid-resistant and displays cariostatic effects (Fig. 4).

Maxcem™ is available as a standard kit (5 double syringes 5 g; 2 double syringes Clear, 1 double syringe in each colour Yellow, White, White-Opaque; 12 OptiClean cleaning instruments and 50 mixing tips), mini kit (1 double syringe Clear 5 g, 3 OptiClean cleaning instruments, and 10 mixing tips), and refill packages. One syringe is enough for about eight applications.