ENA CEM Z

Ena Cem Z is a self-curing luting composite. It is suited to lute zircon-dioxide constructions on restorations made from zirconium dioxide, precious metals, non-precious metals and ceramics, by means of adhesion.

Ena Cem Z Primer is used as a bonding agent between zirconium dioxide, metals, full ceramic restorations and facing materials.

Processing times
The processing and setting times depend upon the ambient temperature. The following times are valid from the moment Ena Cem Z emerges from the automix tip:

	ambient temperature ca. 21°C (ca. 69°F)	intraoral temperature 37°C (98.6°F)
processing time	3-4 min	ca. 1 min
setting time, incl. processing time	ca. 6 min	2-3 min

Mixing ratio
With the automix tip, Ena Cem Z is always mixed in the perfect ratio of 1 : 1.

Composition
Ena Cem Z
- silicon dioxide, diurethane dimethacrylate, glass powder, urethane acrylate, benzoyl peroxide
- TOTAL CONTENT OF THE FILLERS: 62% by weight; particle size of highly dispersed silicon dioxide is 0.005 – 0.05 µm, glass fillers have a particale size of 5.0 µm, silicon dioxide has a particale size of 3.0 µm.

Ena Cem Z Primer
- Ethanol, phosphonic acid derivative

Indications
Ena Cem Z was developed for the following indications:
1. permanently luting indirect restorations made from metal (precious metal, non-precious metal, titanium), metal oxide ceramics (e.g. zirconium dioxide, aluminium oxide) or glass ceramics on implant abutments made from zirconium dioxide.
2. luting zirconium dioxide constructions on implant abutments made from zirconium dioxide or metal (e.g. titanium), by adhesion
3. luting adhesive titanium bases to individual abutments made from zirconium dioxide

Ena Cem Z Primer serves as a bonding agent
1. for all above mentioned indications
2. between acrylics/composites and zirconium dioxide

Contraindications
Do not use Ena Cem Z in the following cases:
- if the patient has proven allergies against one of the product's components
- when luting restorations to natural teeth
- if not at least one of the parts that are to be connected is made of zirconium dioxide
- if it is not possible to safely clean and dry the area or if the prescribed method of use cannot be applied
- for restorations which are luted on natural tooth stumps as well as on implant posts

Instructions for use
- Let the paste reach room temperature before applying it. Lower temperatures can make pressing out and mixing difficult.
- Quickly use up Ena Cem Z after pressing it out from the automix tip and set in the restoration without dispatch.

A. Luting of indirect restorations made from metal (precious metal, non-precious metal, titanium), metal oxide ceramics (e.g. zirconium dioxide, aluminium oxide) or glass ceramics to implant abutments

A1. Removal of the temporary restoration
Remove the temporary restoration, and if necessary, the temporary abutment. Clean elements to be luted thoroughly with alcohol (e.g. isopropanol). Afterwards, dry with oil-free air. Avoid moisture and contamination.

A2. Setting in and controlling the permanent abutment
- Exclusively use an original centre screw to fix the restoration permanently inside the patient's mouth. Follow the manufacturer's instructions.
- We recommend the use of a retraction cord to control the restoration better during the fitting and for the subsequent removal of excess material.

A3. Fitting the restoration and drying the area of application

- Check the fit and the occlusion of the restoration.
- Check the occlusion very carefully in case of brittle ceramic restorations to avoid fracturing while the object has not yet been luted.
- If necessary, use a fine diamond tool at medium revolution and little pressure to carry out small corrections. Repolish any surfaces that have been ground.
- It is imperative that the working area where a composite is luted, is dried well (preferably with dental rolls and patches). We recommend keeping the working area completely dry, e.g. by use of a rubber dam.

A4. Treatment of the abutment surface

- Close the screw canal of the abutment e.g. with a temporary filling material. That way, the luting composite is kept from entering.
- Clean and dry the abutment (see A1.)
- Apply Ena Cem Z Primer evenly with a brush and allow to evaporate for 1 min. If necessary, apply a second layer.

A5. Treatment of the restoration surface

In principle, follow the instructions of the framework material's manufacturer.
Otherwise, prepare the restoration as follows:

- Restorations made of metal, zirconium dioxide or aluminium oxide ceramics
    - Clean and dry the restoration (see A1.)
    - Sandblast the inside surfaces of the restoration with aluminium oxide (50 µm) at a maximum of 2 bar
    - Dry the restoration with an oil-free airflow.

  Please note: For an ideal bond between the surfaces, refrain from cleaning with phosphoric acid.
- Restorations made from lithium disilicate glass ceramics (e.g. IPS e.max Press, IPS e.max CAD by Ivoclar Vivadent)
    - Etch with 5% hydrofluoric acid for about 20 sec or in accordance with the material's instructions.
    - Rinse thoroughly with water and dry with an oil-free airflow.
- Evenly apply Ena Cem Z Primer with a brush and allow to evaporate for about 1 min. If necessary, apply a second layer.

A6. Application of Ena Cem Z

- Place a disposable mixing tip onto the dual-compartment cartridge. Discard the first bit of mixed material discharged from the tip.
- Press Ena Cem Z from the automix tip and apply the desired amount directly onto the restoration. Spread evenly.
- As the material will cure inside the used mixing tip, leave the tip on the cartridge as a closure until the next use.

A7. Setting in the restoration and removal of any excess material

- Place the restoration in its destination with slight pressure. Fix it and hold it in place.
- Remove any excess of luting composite immediately with a disposable brush, cotton pellets, dental floss or an implant scaler. Take special care to remove excess material in difficult to reach areas (approximal, gingiva border) before the material cures.
- To avoid the formation of an oxygen inhibition layer, cover the margins of the restoration with a glycerin gel/airblocker immediately after removing any excess material. This gel can be rinsed off with water after the luting material has been cured completely.

A8. Finishing the restoration

- Remove retraction cords.
- Check the occlusion and the movements/function. Correct if necessary.
- Polish all margins of the restoration with polishing tools or discs.

B. <u>Luting of individual zirconium dioxide abutments with adhesive titanium bases</u>

B1. Surface treatment of the adhesive titanium base

- Reduce the flare of the titanium base to the implant's diameter at the adherent area (passage zirconium dioxide/titanium) in line with subgingival and anatomical aspects. Take into account the minimal wall thickness of the zirconium dioxide part.
- Protect the hexagonal connection of the titanium base by screwing it onto a lab implant for the time of the luting procedure. **Important information:** Only use a lab screw for luting! The scan screw is not suited to be used when luting. If the cement enters the microgap, the screw cannot be removed any longer.
- Block out the screw thread in the titanium base with wax.
- Clean the titanium bases thoroughly with alcohol (e.g. isopropanol) and dry with an oil-free airflow. Avoid moisture and contamination.
- Carefully sandblast the adhesive titanium base with 50 µm aluminium oxide at a maximum of 2.5 bar.
- Apply Ena Cem Z Primer evenly with a brush and allow to evaporate for 1 min. If necessary, apply a second layer.

B2. Surface treatment of the zirconium dioxide abutment

- Clean the abutment (or any titanium framework) thoroughly with alcohol (e.g. isopropanol) and dry with an oil-free airflow. Avoid moisture and contamination.
- Carefully sandblast the inside of the abutment with 50 µm aluminium oxide at a maximum of 1.0 bar.
- Apply Ena Cem Z Primer evenly with a brush and allow to evaporate for 1 min. If necessary, apply a second layer.

B3. Luting the abutment and removing excess material

- Place a disposable mixing tip onto the dual-compartment cartridge. Discard the first bit of mixed material discharged from the tip.

- Press Ena Cem Z from the automix tip and apply the desired amount directly onto the abutment. Spread evenly.
- As the material will cure inside the used mixing tip, leave the tip on the cartridge as a closure until the next use.
- Carefully and thoroughly remove any excess adhesive inside the screw channel with help of a microscope.
- If necessary, use a suitable reamer to smoothen the inside of the screw channel in the titanium insert.

B4. Finishing the luted abutment
- After luting, the conical zirconium dioxide abutments are finished in the milling machine to receive a semi gloss. Following this procedure, the abutments are finished to a high lustre manually.

C. Ena Cem Z Primer used as a bonding agent for an acrylic-zirconium oxide bond

C1. Surface treatment of the zirconium dioxide restoration
- Thoroughly clean the surface which is to receive a facing, with alcohol (e.g. isopropanol). Afterwards, dry with an oil-free airflow.
- Absolutely avoid moisture and contamination.

C2. Application of Ena Cem Z Primer
- Evenly apply Ena Cem Z Primer with a brush and allow to evaporate for about 1 min. If necessary, apply a second layer.
- Quickly continue after applying the primer.

C3. Composite facing
- Apply a facing of a conventional, light-curing composite to the prepared framework. Follow the instructions of the composite's manufacturer.

Contraindications
If a patient has known hypersensitivities towards a component of this product, we recommend not to use it or to do so only under strict medical supervision. The dentist should consider known interactions and cross-reactions of the product with other materials already in the patient's mouth before using the product.
Unpolymerized acrylics may lead to allergic reactions of the skin. Therefore, the user should take suitable precautions. Discontinue use if irritation occurs. We advise against the use of the product, if the user or patient has a known allergy against one of the substances listed in the product's composition.

Crossreactions with other products
Phenolic substances (as e.g. eugenol) inhibit polymerization. For this reason, do not use liners containing such substances (e.g. zinc oxide-eugenol cements).
Oxidative disinfectants (e.g. hydrogen peroxide) may cross-react with the curing system and thus influence polymerization. Therefore, do not treat the automix cartridge with an oxidative disinfectant. Instead, disinfect by e.g. wiping with rubbing alcohol.

Side effects
Undesirable side effects of this medical device are to be expected only in extremely rare cases if the product is handled and used correctly. However, immune reactions (e.g. allergies) or local discomfort cannot be completely ruled out. If you become aware of undesirable side effects, please notify us, even in case of doubt.

Warning
May cause an allergic skin reaction. Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage
- Ena Cem Z must be refrigerated. We recommend a storage temperature of 3°-9°C (ca. 37°-48°F). Keep the used automix tip on the cartridge for storage.
- Ena Cem Z Primer must be stored at 10°-25°C (50°-77°F). After taking out the desired amount of primer, close the bottle immediately to avoid an evaporation of the volatile components.

Shelf-life
- The maximum shelf-life is printed on the label of each primary package.
- Do not use after expiration date.

Content
- Ena Cem Z Primer: 5 ml
- Ena Cem Z: 8 g

Guarantee
This product has been developed to be used in dentistry. Always adhere to the product's instructions. The manufacturer will not be held liable for any damages caused by using this product for other than dental use or by improper use. What's more, it is the user's responsibility to check whether the product is suited to the purposes for which it is intended. Especially so, if these purposes are not listed in the present instructions.

Troubleshooting Ena Cem Z

Working time too short	– High ambient temperatures (e. g. summer heat or central heating) decrease the working time
Working time too long	– If the material is used directly after taking it from the refridgerator, curing will be delayed
Material does not cure sufficiently	– Substances containing eugenol or oil of wintergreen prevent curing – Material components are insufficiently mixed; only use original mixing tip
Material is cured	– After use, the cap was replaced instead of leaving the mixing tip on the cartridge (contamination of component A+B)
Construction does not fit	– Construction was moved before the material had cured – Material is already too firm: Please join fewer parts at a time.
Material is very difficult to extract from the cartridge	– Refridgerator temperatures may make extraction and mixing more difficult.

Troubleshooting Ena Cem Z Primer

Material does not create a homogenous film	– Apply a second coat of material

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