

Processing instructions V 16.0

Zirconium engobe

Note: Please read the product information sheet first, to ensure that these are the right processing instructions for your product. This document describes the application procedure for **zirconium engobe** surface sealant / protective coating materials.

The instructions contained in this document must be complied with during processing and installation of the respective product. Modification of or deviations from the processing instructions can lead to major problems during installation, and possibly to total failure of the installed refractory material.

These instructions provide general guidelines for storage, processing, and installation of the specific refractory material. If, due to specific site conditions, it appears necessary to deviate from the procedures described here, please consult Refratechnik Steel GmbH before starting work.

Storage

- In general: Store under cool, dry, and frost-free conditions.
- The shelf life stated in the product information sheet is valid from the production date, and only if storage is in accordance with our recommendations. The production date is stated on the packaging label.
- Under certain circumstances, material that has been properly stored may still be usable even after expiry of the stated shelf life. In such a case, conduct a setting test with a sample before using the material. In case of doubt, the stored material can be checked by Refratechnik Steel GmbH.
- Incorrect storage can greatly reduce shelf life, and can impair product quality.
- The original pallet wrapping foil should be left intact for as long as possible to protect the product. However, the foil is not a substitute for storage under cover.

- Also standing water, e.g. due to inadequate drainage of the storage area, can damage the material.

- Stacking of the goods supplied by us (in sacks, Big Bags, etc.) is done under the sole responsibility of the shipping company or customer. Refratechnik Steel GmbH accepts no liability for possible consequential damage (damaged packaging, personal injury, etc.).

Health and safety

- Always wear suitable safety goggles, dust mask, protective clothing, and working gloves.
- Always wash thoroughly after working with the material.
- Observe the information in the safety data sheet.

General information

- This product is an engobe based on raw materials containing zirconium, and provides a protective coating for ceramic components against external influences.
- **Zirconium engobe** is delivered dry in sacks, and must be mixed with water on site before use.
- Always mix complete packaging units (1 sack). The use of partial quantities can lead to demixing and changed material properties.
- Only use clean drinking water, as otherwise the setting behaviour may be affected.
- **Zirconium engobe** is processed at room temperature (5...25 °C).
- Low temperatures can retard or even stop the setting process. Therefore, the temperature of material and mixing water must be at least 5 °C. It might be necessary to heat the installation site.

- On the other hand, the setting process may be significantly accelerated at temperatures above 25 °C.
- Before using the material on a large surface for the first time, we recommend carrying out an individual test on a representative component, and subject it to the normal operating conditions to determine whether **zirconium engobe** is suitable for the intended purpose.
- During heat-up, it is essential that flames do not impinge on the refractory lining only in small areas. Local overheating can result in severe damage of the refractory material. Therefore, it must be ensured that the entire lining surface is heated uniformly and without significant temperature differences.

Mixing

- Mixer, tools, conveying equipment, etc. must be clean and free from any form of contamination.
- One packaging unit of dry material is mixed in a suitable container with the corresponding amount of drinking water (see product information sheet). A drill-

ing machine fitted with an agitator is recommended for mixing.

- The required amount of drinking water is filled into a suitable mixing container. Slowly pour the dry material into the container while the agitator is running (pouring time: 1...2 minutes). Then continue agitating for 3 minutes. Next, allow the mixture to rest for about 5 minutes, then continue mixing for 1 more minute. After preparing the **zirconium engobe** mixture in this way, it is ready for processing.
- To prevent contamination of the mixed **zirconium engobe**, we recommend sealing the mixing container with a tight cover.
- Under normal storage conditions, and if kept in a tightly sealed container, the prepared mixture remains processable for up to 2 days. We recommend that the mixture is agitated briefly (2 minutes) before processing.

Processing

- **Zirconium engobe** is applied directly to the ceramic component with the help of sprayers, brushes, rollers, etc., or imme-

diately after removing the formwork from the refractory surface that is to be coated with **zirconium engobe**.

- The thickness of the applied layer should be as thin as possible, and not exceed 2.0 mm. The mixture should be applied as evenly as possible, and in a single coat.

Setting and curing

- **Zirconium engobe** is cured after about 1 hour at room temperature, after which a protective layer is already formed on the monolithic lining or ceramic component.

Drying and heating up

- Drying can start 1 hour after the protective layer has been applied.
- There is no specific drying or heating up procedure for **zirconium engobe**. Regarding the drying and heating up procedures of the respective base material, the corresponding data sheets must be observed.