

Thermoforming technique

The instructions in this brochure are the suggestions of the Development Team of Erkodent.

The fields of use as well as the fabrication procedures in Thermoforming Technique are not limited to the instructions that are shown and may vary.

Please do not hesitate to contact us if you have any suggestions.

Please find videos to the fabrication of several applications at: www.erkodent.com > Service/Download > Videos



Basic principles of thermoforming:

- The **models** should consist of **hard plaster** (class 3).
- For thermoforming the **hard plaster** can contain residual moisture but **must not be wet**.
- For a good adaptation the **hard plaster** must be **permeable to air**, especially hard plasters for the orthodontic field do not always ensure this. Like when using plastic models or varnished models that are impermeable to air, this leads to incomplete adaptation because in most cases air cannot escape completely between the model and the foil.
- 3d print models are placed centrally on the model plate for the adaptation (pressure and vacuum forming units). Please ensure that the model base entirely fits all around to the model plate. If necessary, close not fitting areas with Erkogum. 3d print models with socle can also be adapted in granules. Further auxiliaries for the use of 3d print models are Occ3-4p and Occ3-aM.
- The removal of hard materials very often leads to a **break of models**. The use of super hard plaster does not solve this problem, it is better to thermoform on a duplicated model.
- It is useful to **embed the models** for thermoforming as far into the **high grade steel granules** that only the area that has to be thermoformed plus 3 mm is visible.
- The **granules** allow a **quick adaptation** of the thermoforming materials and a very simple limitation of the model height.
- When working on the **model disc** ensure that the **model base** is **trimmed flat**.
- **Model preparation:** Areas of the model (exterior vestibulum, oral floor) which obstruct the thermoforming process have to be removed. Remove sharp plaster edges.



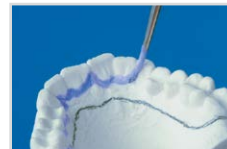
Fill narrow gaps between the teeth with Erkogum (transparent 110 844 / lilac 110 847).



Remove positive plaster bubbles.



Fill negative plaster bubbles and small defects with blocking out wax (transparent 725 080 / lilac 725 055).



If the splint covers the gingival margin, relieve it with Erkoskin (625 050).



When there are large undercuts, mark the prosthetic equator to limit the height.

- The adaptation of thermoforming materials always means a **stretching** respectively a thinning of the original material thickness. A rough orientation is: **1 cm model height corresponds to 20-25 % loss of thickness**. For this reason it is expedient to embed the models into the granules.
- All **Erkodent thermoforming materials** are tested on their biocompatibility and are **physiologically harmless** in their intended use. They are CE marked based on the EU regulation 2017/745 concerning medical products, the directive 93/42/EEC concerning medical products and the EU regulation 2016/425 concerning personal protective equipment (Playsafe triple sports mouthguard). Up to now (2023) there is no knowledge of confirmed allergic reactions on the materials, but allergic reactions cannot be excluded.
- Pay attention to the regulations for operational safety.

October 2023 - Current version of the thermoforming manual: www.erkodent.com

