

**LITHOZ**<sup>®</sup>

We are ceramic 3D printing.

# 3D-Printed Ceramic Translucent Brackets for Orthodontics



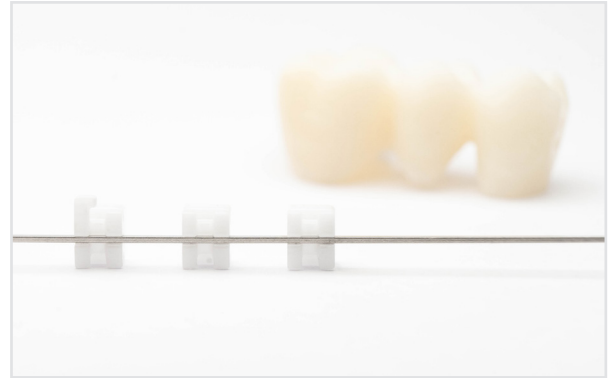
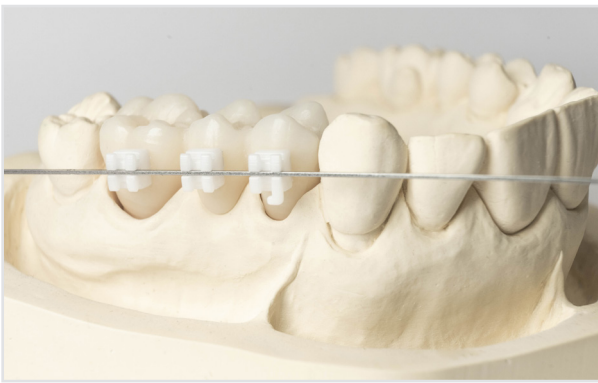
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of high-performance ceramics.

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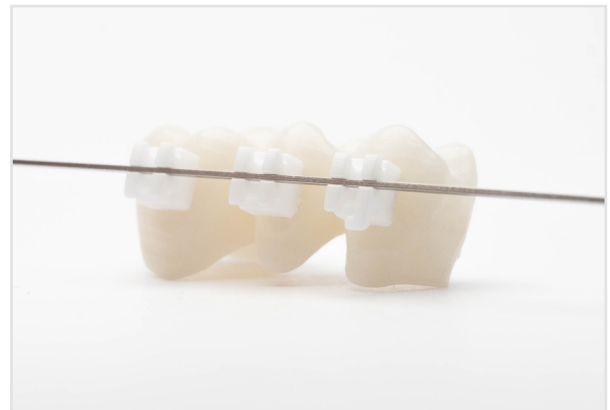
## Making Brackets Today: Standardized Fit, Expensive Tools

Today, brackets are produced through expensive and rigid injection molds or milling processes. These methods create enormous **fixed costs for tools** and strongly **limit design variety**, resulting in **generic solutions** that lack a perfect individual fit for patients. Additionally, milling processes have **high scrap rates**, further adding to the inefficiency of both milling and injection molding. Frequent **mold changes lead to costly downtimes**, while the associated tool costs reduce profit margins significantly.



## High-Precision Ceramic Brackets at Low Cost

With ultra-precise Lithoz LCM ceramic 3D printing technology, **translucent ceramic brackets** can now be produced at impressively low costs. These 3D-printed ceramic brackets are perfectly biocompatible, **highly durable** and live up to the highest aesthetical standards. They seamlessly integrate **complex adhesive surfaces to ensure a perfect fit**, which makes treatment shorter and less painful. It's a true win-win situation: **limitless variations** can be printed in large volumes **at no additional cost**, with tools as the biggest fixed cost drivers being completely eliminated.



## The Perfect Fit – For Patients and Orthodontists

Digital control of the ceramic 3D printing process ensures repeatable precision across serial production, guaranteeing **superior accuracy in critical dimensions** like wire slot geometry. This allows for the production of various bracket types, including **self-ligating brackets**, and supports the use of different materials, enhancing flexibility. The **open system design** ensures compatibility with multiple suppliers, offering freedom from single-manufacturer dependence. Lean production techniques and a digital warehouse further enhance efficiency, ensuring the brackets meet high orthodontic standards and significantly shorten treatment times for patients.

### Key Benefits

- **< \$ 1** cost / bracket
- **< 0.1 g** material / bracket
- **1 printer** – 1,000,000 parts / year
- Slot width accuracy better than **+/- 12 µm**
- Slot reproducibility **< 8 µm** standard deviation
- **Zero fixed cost** for tools



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