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[\[PDF \(457K\)\]](#) [\[References\]](#)**Effect of Sintering on the Marginal and Internal Fit of CAD/CAM-fabricated Zirconia Frameworks**[Jun KUNII](#)<sup>1)</sup>, [Yasuhiro HOTTA](#)<sup>1)</sup>, [Yukimichi TAMAKI](#)<sup>1)</sup>, [Atushi OZAWA](#)<sup>1)</sup>, [Yukitaka KOBAYASHI](#)<sup>1)</sup>, [Akihiro FUJISHIMA](#)<sup>1)</sup>, [Takashi MIYAZAKI](#)<sup>1)</sup> and [Toshihisa FUJIWARA](#)<sup>1)</sup>

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**Abstract:**

The aim of this study was to investigate the effect of post-machining sintering on marginal and internal fit of CAD/CAM-fabricated zirconia frameworks. Single crown copings (A: abutment), three-unit bridge frameworks (APA, P: pontic), four-unit bridge frameworks (APPA), and five-unit bridge frameworks ( $A_1P_1A_2P_2A_3$ ) were fabricated with raw-stage zirconia blanks using a commercial CAD/CAM system (KATANA®, Noritake Dental Supply Co. Ltd., Aichi, Japan). Crown copings and frameworks were cemented to their respective master abutment models, and thickness of the cement layer was measured at specific measuring points. Marginal and internal fit of both APA and APPA were within clinical acceptance. However, the marginal gap and thickness of the cement layer on the axial surface of the pontic side of APA and APPA were slightly higher than those of the non-pontic side. As for the marginal gap of  $A_1P_1A_2P_2A_3$  framework, it was superior to those of APA and APPA because the center abutment supported the framework to prevent distortion.

**Key words:**[Zirconia ceramics](#), [CAD/CAM system](#), [Framework](#)



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