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[\[PDF \(519K\)\]](#) [\[References\]](#)**Effect of preparation angles on the precision of zirconia crown copings fabricated by CAD/CAM system**[Florian BEUER](#)<sup>1)</sup>, [Daniel EDELHOFF](#)<sup>1)</sup>, [Wolfgang GERNET](#)<sup>1)</sup> and [Michael NAUMANN](#)<sup>2)</sup>

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**Abstract:**

The aim of this *in vitro* study was to evaluate the effects of different preparation angles on the precision of fit of zirconia crown frameworks. Dies were fabricated with three different preparation angles: 4, 8, and 12 degrees total taper. Ten copings were fabricated for each angle by a laboratory and a milling-center CAD/CAM system. After cementation, cross-sections were obtained and cement gaps were measured.

Preparation angle (ANOVA,  $p < 0.01$ ) and measurement location (ANOVA,  $p < 0.01$ ) exhibited statistically significant influence on the precision of fit. On the other hand, no statistically significant influences were detected between copings prepared using the laboratory and milling-center CAD/CAM systems (ANOVA,  $p = 0.92$ ). All groups showed marginal openings ranging between 36.6 and 45.5  $\mu\text{m}$ .

In light of the results obtained in this study, a preparation angle of 12 degrees is hence recommended with the confidence that the marginal gap will be consistently less than 50  $\mu\text{m}$ .

**Key words:**[Preparation angle](#), [Zirconia](#), [Precision](#)[\[PDF \(519K\)\]](#) [\[References\]](#)

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