

Author's Accepted Manuscript

Fracture strength of lithium disilicate crowns compared to polymer infiltrated ceramic network and zirconia reinforced lithium silicate crowns

Kim Sieper, Sebastian Wille, Matthias Kern



PII: S1751-6161(17)30263-1
DOI: <http://dx.doi.org/10.1016/j.jmbbm.2017.06.025>
Reference: JMBBM2385

To appear in: *Journal of the Mechanical Behavior of Biomedical Materials*

Received date: 3 May 2017
Revised date: 19 June 2017
Accepted date: 20 June 2017

Cite this article as: Kim Sieper, Sebastian Wille and Matthias Kern, Fracture strength of lithium disilicate crowns compared to polymer infiltrated ceramic network and zirconia reinforced lithium silicate crowns, *Journal of the Mechanical Behavior of Biomedical Materials* <http://dx.doi.org/10.1016/j.jmbbm.2017.06.025>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Fracture strength of lithium disilicate crowns compared to polymer infiltrated ceramic network and zirconia reinforced lithium silicate crowns

Kim Sieper*, Sebastian Wille, Matthias Kern

Department of Prosthodontics, Propaedeutics and Dental Materials, School of Dentistry, Christian-Albrechts University at Kiel, Germany

*Corresponding author: Friesische Straße 24 a 25980 Westerland Mobil: 0176 66 8 99 510. kimsieper@gmx.de

1. Introduction

In times of digital dentistry the possibility of a quick chairside production process with computer aided design and computer aided manufacturing (CAD/CAM) leads to an increasing demand for monolithic restoration materials (Mehl et al., 2013; Miyazaki et al., 2009; Wittneben et al., 2009). Veneered zirconia has been successfully used for all-ceramic restorations, but delamination of the veneering material from the framework or minor chip-offs often caused failures (Guess et al., 2008; Guess et al., 2011; Kelly et al., 1995; Sailer et al., 2006; Swain, 2009; Tinschert et al., 2005; Zhao et al., 2012). Another reason for ceramic restoration failure are imperfections caused during the manufacturing process. The CAD/CAM technology leads to a more homogenous structure of the milled restorations, when they are cut from standardized fabricated blocks. Using monolithic restorations therefore seems promising to prevent these failures (Kern et al., 2012b). So far highly esthetic monolithic silicate ceramic has been successfully used in inlays, onlays and veneers. However in larger restorations like

Download English Version:

<https://daneshyari.com/en/article/5020426>

Download Persian Version:

<https://daneshyari.com/article/5020426>

[Daneshyari.com](https://daneshyari.com)