Materials and Methods

In order to replicate tooth wear damage, four restoration dental materials were considered. Reciprocating sliding tests were performed in a ball on plate geometry where plates of restoration materials were loaded against 10 mm alumina balls, under 30 N normal load, 1 Hz frequency and 2 mm stroke length. The duration of each test was 1 h corresponding to 29 m of total sliding distance. In order to simulate the oral conditions, all tests were performed in presence of Fusayama artificial saliva, at 37°C ± 2°C.

Material	Brand Name	Manufacturer
Polymer	DD TempMED HI	Dental Direkt GmbH,
Composite	BRILLIANT CRIOS , cerec HT A1 14	Coltene, CH
Feldspathic Porcelain	VITABLOCS RealLife 1M1C	Vita Zahnfabrik, Bad Säckingen, BRD
MicroZr™ Veneer	DD Bio ZW iso color (ZrO2 example)	Dental Direkt GmbH

Conclusions

Results show that zirconia (MicroZr™Veneers) is **30 times** more resistant to wear than feldspathic porcelain and polymer, and **75 times** more resistant than composite.

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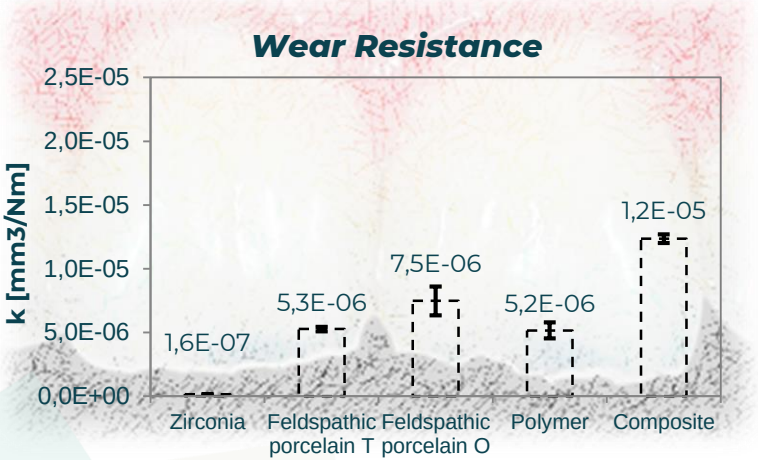
MicroZr™ Veneers

Wear Resistance

Abstract

Human teeth are exposed to a considerable amount of damage wear on a daily basis due to chemical and mechanical actions. This study determined the wear resistance of most common dental restorative materials in the market (polymers, composites and ceramics), including MicroZr™Veneers with the aim of comparing their behaviour, tested under the same conditions.



A. Carvalho, P. Pinto, F.S. Silva, O. Carvalho, J.R. Gomes, *Tribological characterization of dental restorative materials*, BioTribology, 23,, 2020, 100140

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