

Usted obtiene más con

BruxZir[®]

Solid Zirconia Crowns & Bridges

Más de **14 millones** de restauraciones entregadas a través de la red de laboratorios autorizados de **BruxZir**[®]



Fuerza

Fuerza insuperable



Belleza

Estética Natural



Confianza

Cero Compromiso

BruxZir[®]
ANTERIOR
— SOLID ZIRCONIA —

BruxZir[®]
FULL-STRENGTH
— SOLID ZIRCONIA —



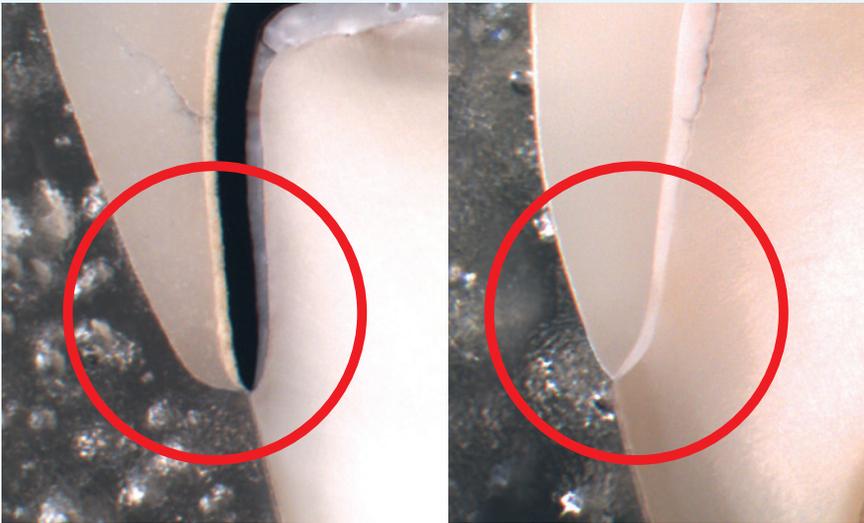
La marca recetada número uno de zirconio sólido está disponible en los laboratorios dentales de todo el mundo.

¿Por qué no poner BruxZir a prueba hoy?

Mejores márgenes, menos desgaste, más resistencia...
a mejor precio que los productos PFM

PFM

BruxZir



Esta imagen representa la preparación PFM habitual que recibimos, con una corona PFM y BruxZir colocadas. Debido a que la corona BruxZir es monolítica y puede fresarse hasta lograr una terminación en bisel, no hay un volumen en el material o excedente en el margen. Los dentistas nos comentan que su investigador no puede detectar dónde termina la pieza dentaria y dónde comienza la corona BruxZir.

Para obtener más información, visite bruxzir.com.



Antes: Este paciente recientemente tuvo un procedimiento de endodoncia a través de una corona PFM en el molar inferior y caries recurrente en la cara distal del canino. El paciente nunca se sintió muy a gusto con el tono gris de la corona PFM, y no le gustaba tener un orificio en la parte de arriba de la corona, aunque esta se había restaurado con composito.



Después: De acuerdo con las estadísticas del laboratorio, las coronas en los primeros molares se fracturan más que cualquier otra corona; por esto, yo elijo una corona BruxZir Shaded, por su combinación de resistencia y estética. Prácticamente la mayoría de los más de 322 laboratorios autorizados de BruxZir utilizan el material BruxZir Shaded exclusivamente.



Cara bucal después: Mientras estas coronas BruxZir Shaded no se pueden confundir con el esmalte cuando se las compara con la dentición natural circundante, hacen un buen trabajo en mezclarse con estos dientes. No son notorias como una restauración PFM. Considero que el zirconio sólido es la mejor combinación de resistencia y estética para las restauraciones molares.



Glidewell Laboratories
www.glidewell dental.com

97%
rating at
recall

Description:

A total of 2112 **BruxZir Solid Zirconia Crowns and Bridges**, a full-contour monolithic zirconia, have been placed and monitored over the past five and a half years. The restorations included single crowns and three-, four-, five- and six-unit bridges (Figure 1). Among the bridges, 69% were three units, 17% were four units, 8% were five units, and 6% were six units. The restorations were cemented with adhesive and self-adhesive resin cements.

Clinical Evaluation Protocol:

Over a six-month period, 1265 **BruxZir Solid Zirconia Crowns and Bridges** restorations were recalled out of 2112 total restorations placed. Among the recalled restorations, 49% had been in function for up to three years, 28% up to five years and 23% for over five years (Figure 2). The majority (81%) of restorations were fabricated by **Glidewell Laboratories**, while the remainder (19%) were fabricated by **Apex Dental Milling**.

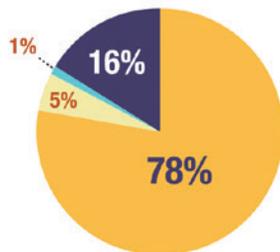


BruxZir Bridge 13-15

Results at 3 years:

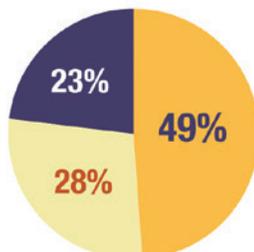
BruxZir Solid Zirconia Crowns and Bridges restorations were evaluated in the following categories: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance of the zirconia restoration and opposing dentition, and retention. The restorations were evaluated on a 1-5 rating scale: 1=poor, 2=fair, 3=good, 4=very good, 5=excellent.

Fig 1. Distribution of **BruxZir Solid Zirconia Crowns and Bridges** restorations at recall.



- Single Crowns
- Implant Crowns
- Bridges (3, 4, 5, 6 units)
- Implant bridges

Fig. 2: Age of **BruxZir Solid Zirconia Crowns and Bridges** restorations at recall.



- 0-3 years
- 3-5 years
- 5+ years

Consultants' Comments

- "Excellent fit and esthetics - exceptional for posterior crowns."
- "One of the nicest implant crowns I have seen - opaque enough to mask the metal abutment."
- "BruxZir is a great choice for worry-free crowns and a good value."
- "BruxZir is my go to restoration for posterior teeth - looks good and guaranteed to last."
- "I have been using BruxZir for six years and have not been disappointed. Neither have my patients."

Esthetics

The esthetics of **BruxZir Solid Zirconia Crowns and Bridges** restorations was rated excellent (Figure 3) based on the consistency of the shades and in comparison to other monolithic zirconia restorations. Zirconia restorations are generally opaque and lack translucency and opalescence. **BruxZir Anterior** is definitely more translucent and still has high flexural strength. The esthetics of zirconia restorations is not comparable to esthetic ceramic restorations resulting from incremental buildup but it is improving. **BruxZir Solid Zirconia Crowns and Bridges** restorations are perfect for patients desiring more uniform, whiter teeth (B1 shade). The new **BruxZir 16** recently introduced by **Glidewell Laboratories** has improved esthetics.

Resistance to Fracture/Chipping

Chipping and fracture of **BruxZir Solid Zirconia Crowns and Bridges** restorations has been practically non-existent (Figure 3). Only three fractures have been observed. A 2nd molar crown fractured; it was likely the result of insufficient occlusal clearance and reduction. Two implants crowns on lower second molars also fractured and were replaced. Their fracture was probably the result of very low clearance and insufficient space due to implant placement. Having less than 1 mm clearance is not recommended for molars, especially second molars. None of the three- or four-unit bridges fractured. Two five-unit bridges fractured and were replaced with PFM bridges. In both cases, the clearance was minimal and the patients were heavy bruxers. Two six-unit anterior bridges were splinted teeth where not more than one or two adjacent teeth were missing.

Resistance to Marginal Discoloration

Only six (0.5%) of the **BruxZir Solid Zirconia Crowns and Bridges** restorations exhibited slight marginal discoloration at three to five years or more (Figure 3). The opacity of the crowns helps camouflage most staining or microleakage. Staining is more a function of the bonding agent and the cement used rather than the zirconia. If teeth are very discolored, it is advisable to use a more opaque resin for cementation.

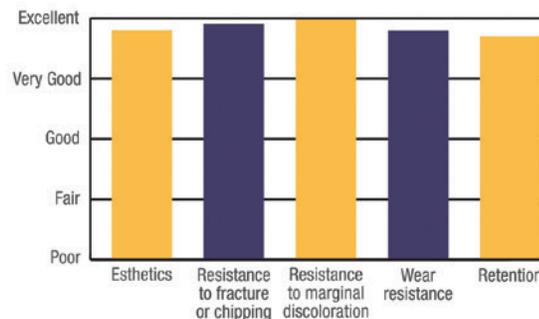
Wear Resistance

Almost no wear was observed on **BruxZir Solid Zirconia Crowns and Bridges** restorations and minimal wear was observed on opposing natural dentition at three to five years (Figure 3). More wear was noted on gold crowns opposing **BruxZir Solid Zirconia Crowns and Bridges** restorations.

Retention

Sixty-three (3%) out of the 2112 **BruxZir Solid Zirconia Crowns and Bridges** placed debonded and required re-cementation over the five-year period (Figure 3). This debonding rate is slightly higher when compared to debonding of non-zirconia crowns (2%) that *THE DENTAL ADVISOR* has documented over time. It is advisable to prime zirconia crowns prior to cementation to improve retention.

Fig. 3: Results of **BruxZir Solid Zirconia Crowns and Bridges** restorations at five years.



Conclusions

Over the five-year evaluation period, **BruxZir Solid Zirconia Crowns and Bridges** has proven to be an excellent restoration with respect to esthetics and dependability. It is highly recommended for posterior crowns and three- and four-unit bridges as well as implant-supported crowns and bridges. In select cases, it can be used confidently for anterior restorations. It received a 97% clinical rating.



Gordon J. Christensen

Clinicians Report

Reprint



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BruxZir and e.maxCAD: Superior Clinical Performance at 3+ Years

Gordon's Clinical Bottom Line: The TRAC research section of CR has been conducting a controlled clinical study of monolithic restorations for 3-1/2 years. These restorations are serving far better than anticipated. *This report contains an update on the well-documented positive TRAC Research results.*



Scanning electron microscope (SEM), clinical, and laboratory examinations are showing *equally excellent service for BruxZir and e.maxCAD* milled full-contour crowns on molars at 41 months of service in a practice-based controlled clinical study. *This service record exceeds that of over 100 other tooth-colored materials studied by TRAC over the past 39 years using the same methods.* The superior performance of these two products has commanded our close attention. Literally millions of these two products have now been placed by U.S. dentists over the past five years—tipping dominance away from the time-honored PFM. Yet clinical research has lagged far behind clinical use, leaving important questions unanswered.

This report provides follow-up on the one-year data published in the June 2012 *Clinicians Report* to update clinicians as answers begin to develop to the following critical clinical questions.



Critical Clinical Questions and Answers Beginning to Develop after 3+ Years of Service

1. Does BruxZir zirconia severely wear opposing dentition?

NO, see chart below. Concern that zirconia would severely wear opposing dentition dictated our locating and measuring all facets on test crowns and all types of opposing dentition. Three-year data below show **BruxZir zirconia crowns caused 23% less wear of opposing dentition than the pressed ceramic-over-zirconia Control (PressCeram by Swiss NF over zirconia by Metoxit) and about the same wear as e.maxCAD lithium disilicate processed with an experimental 12.5-minute post-mill procedure. BruxZir received more wear than it caused.**

Table 1: Percent area worn by the Test Crowns and the Opposing Dentition

Brands names of materials studied	% area worn by Test Crowns on Opposing Dentition			% area worn by Opposing Dentition on Test Crowns		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
BruxZir	5.5 *	10.3 *	12.8 *	8.2 *	14.5 *	29.6 *
e.maxCAD (27 min. post-mill processing)	6.7	10.8	17.9	4.6	7.3	11.1
e.maxCAD (12.5 min. post-mill processing)	4.7	7.9	11.3	6.1	9.4	13.4
Pressed ceramic-over-zirconia (Control)	10.9	14.2	16.6	8.2	11.1	16.4

* Data apply only to BruxZir zirconia. Other zirconia formulations may perform differently.

2. Does BruxZir zirconia lack of flexibility adversely affect the occlusal system?

Some people predicted tooth mobility, mastication muscle strain, and joint dysfunction. None of the predicted problems have been noted to date in this study. If you have experienced any of these problems with BruxZir, please contact by email rella@tracresearch.org.

3. Do full-zirconia dental restorations undergo phase change in the 100% humidity of the oral cavity?

To date, phase change problems such as surface cratering and microcracks have not been noted by SEM, nor have particles released into soft tissues with resulting inflammatory changes been seen in this study. However, more time is needed to eliminate this question. In 2001, some zirconia hip joint implants showed these changes occurring within months to beyond five years of clinical use. BruxZir was released commercially in summer 2009, so these are critical years regarding this question. Other more recently released dental zirconias will require similar long-term monitoring.

4. If e.max lithium disilicate is performing so well, why consider use of BruxZir full-zirconia?

There are no data to indicate BruxZir and e.maxCAD could not serve equally well in all *single-unit* situations. Empirically, both dentists and lab technicians have preferred to take advantage of e.max lithium disilicate's beauty for anterior teeth and BruxZir's high strength for the following:

- When minimal tooth preparation can be used.
This study shows BruxZir meeting its claims by serving well with less than 1.0 mm occlusal reduction and near-feather edge margins on molars, even in patients with bruxing/clenching habits. e.maxCAD was not tested with minimal reduction preparations because these claims were not made for this product.
- In areas that force shallow preps due to limited space.
- For labs, anytime the preps are too shallow to allow predictable positive clinical results with other materials.

BruxZir and e.maxCAD: Superior Clinical Performance at 3+ Years (continued from page 1)

4. If e.max lithium disilicate is performing so well, why consider use of BruxZir full-zirconia? (continued)

Table 2: BruxZir and e.maxCAD are the antithesis of one another in many characteristics.

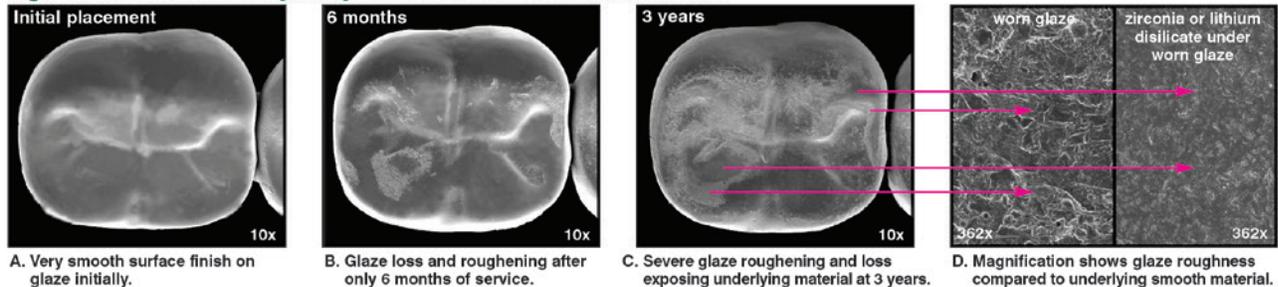
Differences	
BruxZir	e.maxCAD
• Very high flexural strength (1000+ MPa)	V • Lower flexural strength (about 350 MPa)
• Adequate and improving esthetics	E • Excellent esthetics
• Minimal prep permissible	R • Deeper prep preferable
• Moderately worn by opposing dentition	S • Moderately wears opposing dentition
• Very long post-mill processing (8.5 hours)	U • Shorter post-mill processing (12.5 to 27 min)
• Mills smoothly at margins	S • Milling causes many small chips at margins
• Cannot acid etch, can sandblast gently	• Acid etches well, must not sandblast

Similarities
BOTH BruxZir and e.maxCAD
• Time consuming to remove, and removal risks prep gouging
• Glaze degrades at occlusal contacts, but the unglazed materials function well in occlusion
• Currently, more time consuming for labs to polish than to glaze

5. Should BruxZir and e.maxCAD be final polished or glazed?

After only six months, it was evident the glazes would not last long. By three years, 54% of the glaze applied on occlusal surfaces in this study was no longer present (31% removed by dentists for occlusal adjustment and 23% removed by use). Glaze is used because it is faster than polishing, leaves surfaces very smooth, and preserves characterization stains. However, the clinical degradation and resulting gross surface roughness negates all these points. Options are to improve the glazes or develop easy polishing techniques and internal characterization of blocks.

Figure 1: SEM documentation of glaze degradation over time for either BruxZir or e.maxCAD



Critical Clinical Questions and Answers Beginning to Develop after 3+ Years of Service (continued)

6. What are the best instruments for occlusal adjustment?

February 2013 *Clinicians Report* gave detailed analyses of 16 products, naming Luster (Meisinger) and OptraFine (Ivoclar Vivadent) as CR Choices.

7. Is TRAC's experimental 12.5-min. post-mill processing procedure for e.max the same, better, or worse than the original 27-min. procedure?

The two procedures were statistically the same in 18 variables monitored, but crowns treated using the experimental 12.5 minute method showed numerically less wear of opposing dentition.

8. Does endo entry access compromise BruxZir and e.maxCAD restorations?

YES. October 2012 *Clinicians Report* gave detailed information on best instruments and techniques, and concluded with the necessity to use new diamonds, light pressure, and copious water coolant with 1mm or more of occlusal material thickness.

9. What are the best products and techniques for removal of BruxZir and e.maxCAD crowns?

New fine-grit, round-ended taper diamonds used with water coolant, light touch, and frequent examination to avoid gouging underlying dentin works best. Additionally, Polaris Crown Cutting Wheel (Pollard Dental Products) is preferred by some clinicians, but requires attention during use to avoid unintended cutting.

10. What is the best cementation technique for BruxZir and e.maxCAD?

See below and page 4. Steps and best products are different for zirconia vs. lithium disilicate.

11. Can zirconia have the translucency and colors available now with lithium disilicate?

Translucency and colors of zirconia are improving, but currently lithium disilicate is superior in these characteristics. However, BruxZir esthetics can be adequate (see Figure 2, 30 full-crown BruxZir case at right).

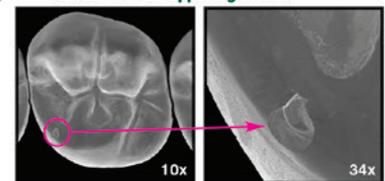
12. What is the expected service life and failure mode of BruxZir and e.maxCAD?

No one knows. The first and only chip in this study occurred on BruxZir at one year and has not progressed (see Figure 3 at right). More time is needed to answer this question. Current exceptional service justifies hope for exceptional longevity.

Figure 2: Full-mouth restoration with BruxZir in a heavy bruxing male



Figure 3: Small, non-progressing chip in a BruxZir crown opposing BruxZir

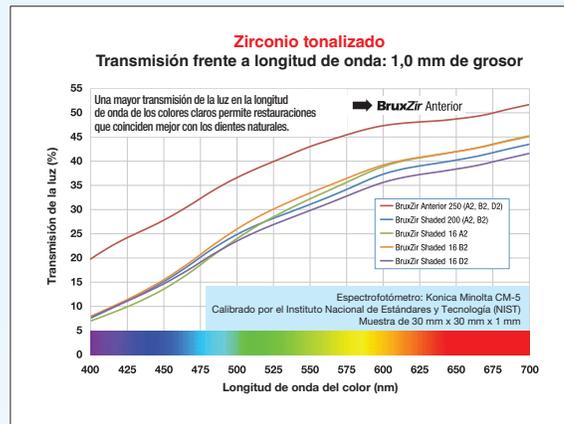
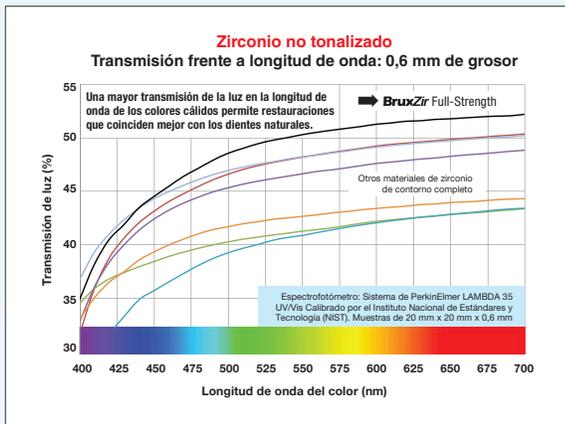


TRAC Conclusions:

BruxZir and e.maxCAD full-contour crowns on molars have demonstrated clinical service superior to all other tooth-colored materials studied clinically by TRAC over 39 years. To date, their service record resembles that of cast metal. Clinical service over three plus years has begun to answer many critical clinical questions, but important questions remain on possibility of phase change of zirconia in 100% humidity of the oral cavity, glaze use, service life, and failure mode. Status reports will be forthcoming as answers to these and other pertinent questions emerge through this study.

Validación científica de BruxZir

La translucidez de BruxZir es insuperada en el espectro de colores cálidos para una estética más natural



La composición del polvo de zirconio BruxZir Full-Strength da como resultado restauraciones con una transmisión óptica mejorada, homogeneidad de color, dureza intensificada y un ajuste más preciso en restauraciones de varias unidades.

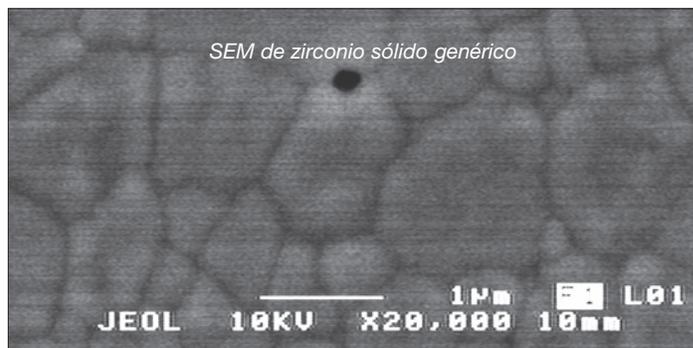
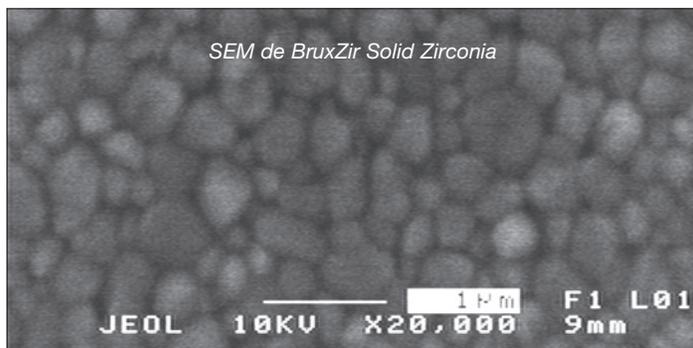
Las restauraciones de BruxZir Anterior mantienen una alta translucidez en casi el doble del grosor del BruxZir Full Strength, proporcionando a los odontólogos un material restaurativo con una mezcla ideal de belleza y funcionalidad.

Las restauraciones BruxZir obtienen resultados más reales



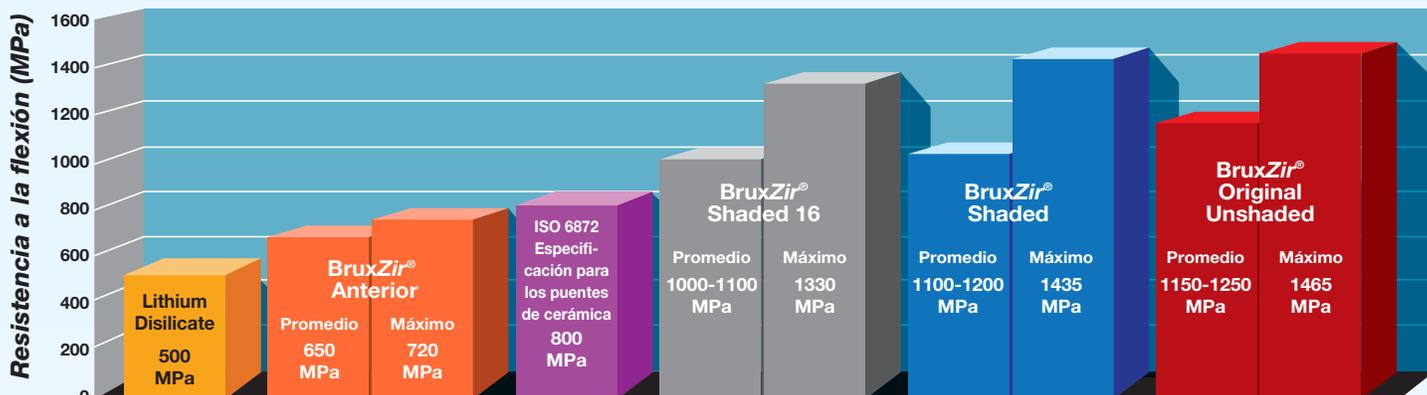
Observe las diferencias en estas fotomicrografías de marcas de zirconio sólido. Las fotomicrografías de alta resolución capturan muestras transversales de BruxZir Solid Zirconia y de dos competidores genéricos. Las manchas blancas visibles en las muestras de la competencia revelan aglomerados que permanecen después del proceso de sinterización, lo que reduce la translucidez y la resistencia a la flexión. BruxZir Solid Zirconia tiene un tamaño de grano más pequeño y es casi libre de aglomerados. El procesamiento coloidal exclusivo y patentado del zirconio permite que las restauraciones BruxZir Solid Zirconia tengan mayor resistencia a la flexión y proporciona un aspecto más natural.

Imágenes del microscopio electrónico de barrido (SEM)



Imágenes del SEM de BruxZir Solid Zirconia sinterizado con procesamiento coloidal frente al zirconio sinterizado prensado isostáticamente.

Comparación de la resistencia a la flexión

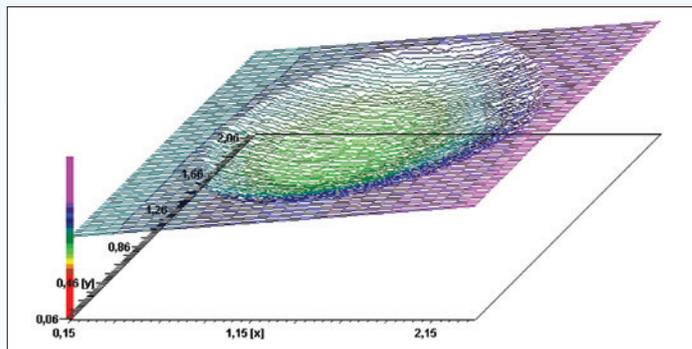


Las restauraciones de coronas y puentes de BruxZir Solid Zirconia fácilmente superan la especificación de resistencia a la flexión de la norma ISO 6872 de 800 MPa para los puentes de cerámica en el sector posterior.

BruxZir frente a Ceramco®3: estudio de desgaste comparativo

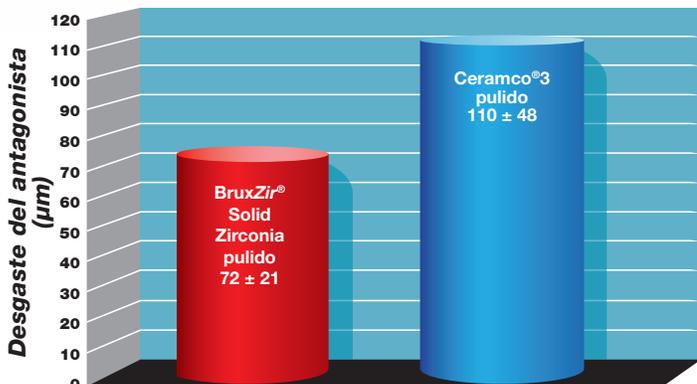


BruxZir Full-Strength y Ceramco®3 se evaluaron con un simulador de masticación WILLYTEC en un estudio de desgaste comparativo dirigido por el Dr. Jürgen Geis-Gerstorfer, profesor del University Hospital Tübingen, en Alemania.



Después de 1,2 millones de ciclos de desgaste con una carga de 5 kg, la comparación de BruxZir Full-Strength con Ceramco3 fue favorable, con un desgaste apenas detectable. Arriba se muestra un ejemplo de la topografía de Ceramco3 después de la prueba de desgaste.

Resultados del estudio de desgaste comparativo

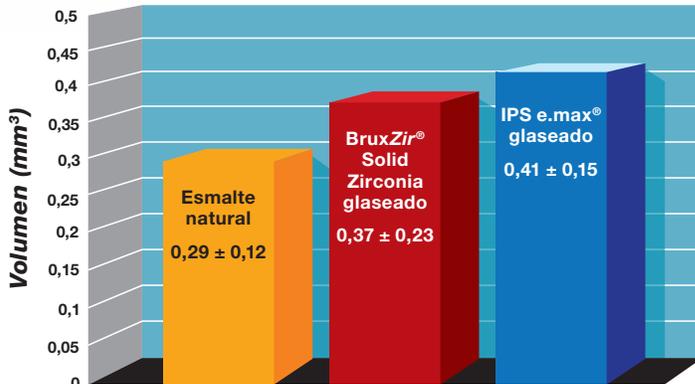


El desgaste antagonístico (bolas de esteatita) muestra un resultado de solo 72 ± 21 micrones para BruxZir Full-Strength, que es considerablemente inferior a Ceramco3, con 110 ± 48 micrones.

Para ver el estudio completo, visite bruxzir.com.

Ceramco es una marca registrada de DENTSPLY Ceramco.

BruxZir Full-Strength vs. IPS e.max®: prueba de desgaste del esmalte



Según un estudio reciente de medición de la pérdida volumétrica de esmalte, se halló que BruxZir Full-Strength glaseado se desgasta de forma compatible con el esmalte natural y virtualmente idéntica al IPS e.max glaseado.

Para ver el estudio completo, visite bruxzir.com.

IPS e.max es una marca registrada de Ivoclar Vivadent.

Fotografías de casos antes y después con BruxZir Anterior

CASO 1



Las coronas en el diente n.º 6, 7 y 8 son BruxZir Anterior y las coronas en el diente n.º 9, 10 y 11 son IPS e.max. Debido a la mayor translucidez de BruxZir Anterior, estas coronas de zirconio sólido se asemejan mucho más a la estética comprobada de IPS e.max.



Estas coronas IPS e.max se fabricaron con lingotes IPS e.max MT (translucidez media). Debido a que estas coronas son menos traslúcidas que los lingotes IPS e.max HT (translucidez alta), las preparaciones manchadas con tetraciclina no se detectan en absoluto.



Ambas series de restauraciones tienen un aspecto más real que las coronas PFM existentes de la paciente. Ella ha tenido estas coronas Captek™ desde hace 15 años, y mientras le han funcionado bien, no estaba a gusto con los márgenes visibles y se alegró al escuchar que ahora existen diversas opciones más estéticas.

CASO 2



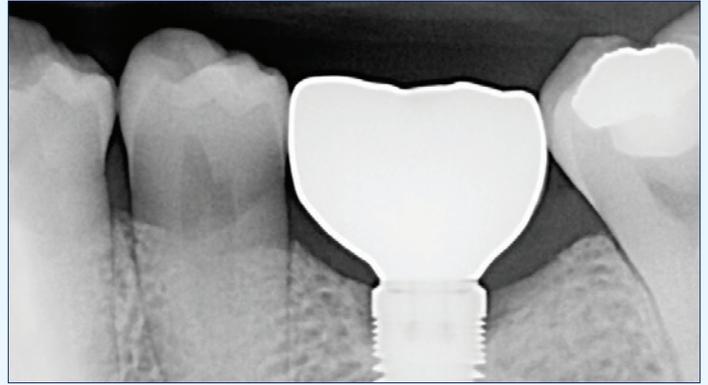
Un paciente presenta una queja porque desea reemplazar el composito deteriorado en uno de los incisivos maxilares. Después de notar un desgaste mínimo y la ausencia de hábitos parafuncionales, se excavó la caries, se realizó una preparación y se colocó una corona BruxZir Anterior.



Se asentó una corona BruxZir Anterior individual en el diente n.º 9. La posibilidad de lograr una tonalidad equivalente en el área estética ha sido una tarea difícil para los dentistas, pero BruxZir Anterior, con el zirconio monolítico, ha hecho un gran avance para que esto sea posible. Podríamos estar más cerca de lo que muchos creen de ese día en el que las coronas de zirconio monolítico sean el tratamiento elegido para las restauraciones en el área estética.



CASO 3



La colocación de esta corona BruxZir de implante fijo con tornillo implicó extraer el pilar de cicatrización personalizado y, luego, asentar la corona de una pieza. El tornillo del pilar se ajustó a 35 Ncm, y se tomó una radiografía periapical para verificar el asentamiento final.



Una vez que se verificaron el contacto interproximal y el oclusal, la apertura de acceso al tornillo oclusal se selló con una pieza de cinta teflón y composito, lo que logró un resultado satisfactorio para el implante BruxZir.

CASO 4



Como se puede ver en esta fotografía sin retracción del "antes", el paciente tenía dos coronas preexistentes PFM de alto valor sobre lo que parecían ser cofias metálicas en el diente n.º 8 y 9. El estado de la encía sugería una posible alergia al metal de la base, lo que contribuyó a mi decisión de colocar coronas BruxZir Full-Strength Zirconio Sólido.



BruxZir® Solid Zirconia
*es la marca recetada número **uno** de
zirconio sólido, con más de 14 millones
de restauraciones recetadas.*



Antes



Después



Antes



Después