



SonicFill[™]
Sonic-Activated, Bulk Fill Composite

Portfolio of
Scientific Research

The background features a light gray, wavy, ribbon-like shape that curves across the middle of the page. Below this shape, there is a horizontal band of small, light gray dots arranged in a grid pattern. The overall aesthetic is clean and modern.

Your practice is *our* inspiration.™

SonicFill™ Sonic Activated, Bulk Fill Composite

What can we do to simplify and improve your daily practice? At Kerr, our commitment to answering this question leads us to continually develop and introduce new advances in dentistry. It is with great pride that we are in a position of being first-to-market with a truly innovative technology.

SonicFill™ is a unique time-saving system we believe will change the way you do posterior composite restorations. Comprised of a specially designed handpiece and a new composite material, you now have a faster, more efficient method to bulk fill posterior cavities in a manner that simplifies the process without compromising quality.

Backed by Kerr's exclusive knowledge of material science that is powered by an innovative use of sonic energy, the ability to simply place a single increment of material, contour, cure and polish is achievable. And with SonicFill's extraordinary strength, low shrinkage and high depth of cure, you won't sacrifice quality for speed.

The solid research behind these new technologies represents our commitment to you and your patients. This portfolio of research proves the clinical excellence behind SonicFill.™

We invite you to experience Kerr's latest innovation, SonicFill,™ one of the most exciting advances in restorative technology. Go to www.kerrdental.com/sonicfill to view this document online.

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Clinical Evaluation of Restorations using a New Composite Material and Oscillating Handpiece and Comparing it with Traditional Composite Material and Placement Technique – 6 months recall

Authors:

Dr. Parag Kachalia, Dr. Marc Geissberger, Dr. Shika Gupta, University of Pacific, San Francisco, CA

Aim of the Study:

The goal is to evaluate restorations placed using a new bulk fill composite material and placement device in Class I and II restorations.

Materials:

1. SonicFill / OptiBond Solo Plus
2. Premise / OptiBond Solo Plus (control)

Method:

Class I and II restorations were prepared and restored using SonicFill composite in one bulk increment. The Modified United States Public Health Service (USPHS) criteria were used to evaluate the restorations.

Results:

Forty eight restorations were evaluated after 6 months per the USPHS criteria. There was no significant change in color match, secondary caries, anatomical form, contacts, post operative sensitivity, and luster as compared to the baseline data. Six of the 48 restorations showed a slight marginal crevice as detected by an explorer. Of these restorations, one had a noticeable increase in surface roughness at the 6 month evaluation. The other 47 restorations were as smooth as the surrounding enamel. One restoration had sufficient marginal discoloration that the investigator elected to replace it.

The overall average placement time using the SonicFill system was 39 seconds (using speed setting 3), whereas the control group, using Premise, required an average placement time of 3 min 34 seconds. This represents an 82% improvement in efficiency using SonicFill vs. a traditional composite.

Summary:

Of the 48 restorations employing the SonicFill bulk fill composite system, 98% were determined to have a good success rate for future years and 77% were flawless after six months. In the control group, 100% of the restorations were deemed to have a good success rate for future years and 75% were flawless after six months. Thus, the long term expectation for SonicFill bulk filled restorations is not significantly different than the clinically proven control material, Premise.

Marginal Quality and Associated Cusp Displacement of SonicFill™ Restorations

Authors:

Prof. Dr. Roland Frankenberger, Philipps University Marburg, Germany

Aim of the Study:

This study evaluated marginal integrity of bonded posterior resin composite fillings to enamel and dentin, before and after thermo-mechanical loading (TML).

Products evaluated:

1. SonicFill + OptiBond FL
2. SonicFill + Revolution + OptiBond FL
3. SureFil SDR + XP Bond + CeramX
4. QuixFil + XFlow + XP Bond
5. Tetric EvoCeram + Tetric EvoFlow + Syntac
6. Filtek LS + LS System Adhesive

Method and Materials:

64 MOD cavities with one proximal box below the CEJ were prepared in extracted human third molars. Direct resin composite restorations were bonded with system immanent adhesives and placed according to the manufacturer's instructions. Two different SonicFill groups were placed with and without Revolution as a flowable liner in 5mm increments. Before and after thermomechanical loading (100,000 x 50N, 2,500 thermocycles between 5 and 55°C), marginal gaps were analyzed using SEM of epoxy resin replicas (200x magnification). Cusp displacement of the specimens was measured before and after placement of the restorations.

Results:

Composite Restorative	Adhesive	Gap-Free Margins (%) (SD)				Cusp Displacement (µm)
		Enamel Initial	Enamel after TML	Dentin initial	Dentin after TML	
SonicFill ≤ 5mm	OptiBond FL	100	84.4 (12.2)	98.2 (2.4)	60.5 (10.6)	15 (5)
SonicFill + Revolution ≤ 5mm		100	86.9 (10.7)	100	62.5 (10.1)	14 (4)
QuixFil + XFlow	XP Bond	100	89.3 (8.2)	100	62.8 (9.0)	10 (4)
SureFil SDR + CeramX		100	87.4 (7.0)	100	64.9 (8.7)	11 (5)
Filtek LS	LS System Adhesive	93.8 (3.7)	68.5 (12.1)	100	75.8 (10.2)	8 (3)
Tetric EvoCeram + Tetric EvoFlow	Syntac	100	91.5 (3.2)	100	67.6 (12.9)	10 (3)

Summary:

Low contraction stress upon curing of properly bonded composite resins clinically manifests itself in high marginal integrity and low cusp displacement. When placed in a single bulk increment up to 5mm, SonicFill showed equal marginal integrity in both dentin and enamel compared to other currently marketed bulk fill materials or conventional composites placed incrementally. In addition, SonicFill exhibited comparable cusp displacement. Taken together, these results demonstrate adequately low shrinkage stress and consequently support placement of SonicFill in bulk.

Monomer Conversion of various thicknesses of SonicFill™ and competitive bulk-fill products

Authors: Dr. Fred Rueggeberg, The Medical Health Sciences University, Augusta, GA

Aim of the Study:

To determine the degree of polymerization at various depths immediately after photo-curing and compare to commercially available products recommended for bulk filling.

Materials:

1. SonicFill (Bulk material)
2. Filtek Supreme Ultra (conventional, non-bulk, control)
3. Surefil SDR (Bulk material)
4. QuiXX (Bulk material)

Method:

A Class I restoration was simulated by utilizing Teflon molds that are 5mm in diameter and 2, 4, or 6mm in height. The composite material was packed into the mold and then cured with a Demi curing light for 10 seconds from the top surface, and then 10 seconds from opposite tube sides. The cured materials were evaluated for monomer-to-polymer conversion using a Fourier transform infrared spectrophotometer (FTIR) with an attenuated total reflectance (ATR) detector. The conversion of the top surface was determined by placing a thin film (less than 100 microns) of uncured composite on the ATR detector and light-curing in a similar manner. Five samples were measured for each material and the IR scan was immediately after curing.

Monomer Conversion at various depths (% bottom/top)

Material	2mm	4mm	6mm
SonicFill	100	99	91
Filtek Supreme Ultra	93	56	40
SureFil SDR Flow	104	102	95
Quixx	104	101	102

Summary:

One of the objectives of this study was to determine if SonicFill can be placed and cured in one bulk increment. It is generally accepted that materials with an 80% bottom/top hardness ratio will create long-lasting restorations. Although there is no similar convention established for degree of conversion data, it is reasonable to expect that bulk fill composites with a degree of conversion above 80% may indicate satisfactory clinical performance. All bulk fill composites in this study have a degree of cure well above 80% of their top, irradiated surface value when evaluated at a depth of 6mm. Thus, it is reasonable to assume that restorations employing SonicFill as a bulk fill material have the potential to produce clinically successful restorations.

Viscosity change of SonicFill™ when subjected to sonic vibration

Authors:

Cao Luu, Ulf Drechsler, Kerr Dental Materials Center, Orange, CA 92867

Aim of the Study:

This study evaluated the impact of sonic vibration on the viscosity of SonicFill under low and high shear stress, mimicking sonic activation with the SonicFill handpiece.

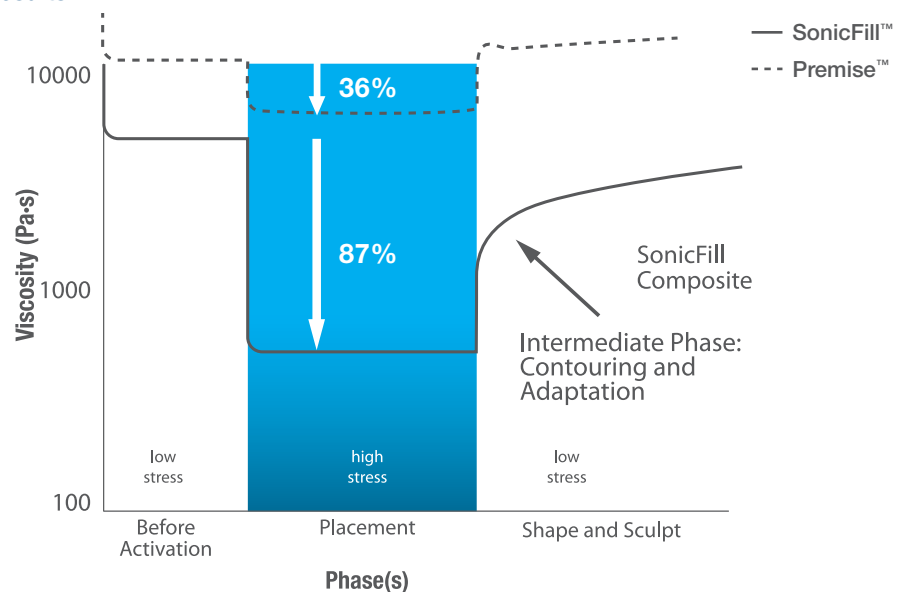
Products evaluated:

1. SonicFill
2. Premise

Method and Materials:

Rheological properties were determined using a stress-controlled dynamic oscillatory Rheometer (DSR-200, Rheometrics Scientific, Piscataway, NJ) in parallel plate configuration with plate diameter of 10 mm and a gap with of 1.0 mm at a constant frequency of 1.0 Hz. Since viscosity cannot be measured at zero stress, a minimally low shear stress of 10 Pa was applied to simulate the non-activated state prior to sonic exposure. The samples were subsequently subjected to high shear stress of 800 Pa mimicking sonic activation. This was followed by reverting to low shear stress at 10 Pa to simulate recovery after sonication. The complex viscosity in Pa-s was recorded continuously.

Results:



Exposure to high shear stress, similar to the stresses exerted by sonic activation during placement reduces the viscosity of SonicFill by 87%, whereas Premise, as an example for a traditional composite, displays a reduction in viscosity of only 36%. Furthermore, removal of the high stress in the case of Premise leads to an almost instantaneous reversion to the initial viscosity. SonicFill, on the other hand, displayed a more gradual viscosity buildup after cessation of the high stress as the material reverts gradually to its original state.

Summary:

Sonic activation provided by the SonicFill handpiece applies shear stress to the composite, which in turn reduces its viscosity. While all composite materials display some reduction in viscosity upon exposure to shear stress, the unique formulation of SonicFill allows for a substantial viscosity drop – almost three times greater than traditional composites such as Premise.

In addition, SonicFill displays a more gradual viscosity buildup compared to traditional composites once the shear stress is removed, briefly retaining its flowable characteristics to enable excellent adaptation, followed by a gradual viscosity increase yielding an easily sculptable, non-slumping material.

Microleakage in Class II preparations restored with the SonicFill™ system

Authors:

Carlos A. Muñoz-Viveros, DDS, MSD; Marc Campillo-Funollet, PhD, Dental Biomaterials Research Laboratory, State University of New York at Buffalo

Aim of the Study:

This study evaluated the sealing ability of SonicFill composite in a Class II restoration.

Products evaluated:

1. SonicFill / OptiBond AIO
2. SureFil SDR / Xeno IV / CeramX
3. Filtek Supreme Ultra / Adper Easy Bond

Method and Materials:

Class II preps with dimensions 4mm bucco-lingually, 5mm mesio-distally, and 4mm depth were prepared. The proximal box was placed 0.5mm below the CEJ. Ten samples were prepared with each restorative system and placed and cured per the manufacturer's directions for use. The samples were thermocycled 1000x between 5-55 °C with a 30 second dwell time. They were then treated with 0.5% basic fuchsin dye for 24h at RT. The specimens were sectioned and inspected for marginal adaptation, voids, and microleakage.

Results:

Microleakage was evaluated separately for the occlusal and cervical surfaces. Although SonicFill had the best overall microleakage score at both the occlusal and cervical margins, it was statistically equivalent to the other materials examined in this study. The marginal sealing was evaluated by SEM. There was no significant difference among the materials with regard to marginal imperfections, marginal openings, or marginal cracks. The number of voids in each material were evaluated by light microscopy. With regard to voids, SonicFill was statistically equivalent to SureFil and superior to Filtek Supreme. SonicFill was the only material tested that was completely void free.

Summary:

SonicFill composite placed in one bulk increment has the equivalent margin adaptation of Filtek Supreme Ultra filled in 2mm increments and SureFil SDR which requires an additional overlay material (Ceram X). Due to the benefit of the Sonic activation, no voids are present in the SonicFill composite. Thus, bulk fracture is less likely to occur reducing the need for reworks. Thus, the clinical longevity of a SonicFill restoration placed in one bulk increment will be the same or better than a restoration utilizing incremental placement of Filtek Supreme Ultra.

SonicFill™ Microleakage

Authors:

Dr. Ruben Begino, DDS, Santa Ana, CA; Christine Tran, Ulf Drechsler, Kerr Dental Materials Center, Orange, CA

Aim of the Study:

This study evaluated microleakage in Class II restorations using SonicFill in combination with various self-etch bonding agents.

Products evaluated:

1. SonicFill + OptiBond AIO
2. SonicFill + OptiBond XTR
3. SonicFill + Clearfil SE Bond
4. SonicFill + Xeno IV
5. SonicFill + Adper Easy Bond

Method and Materials:

Extracted sound human molars were used and Class II preparations with dimensions 4 mm bucco-lingually, 5 mm mesio-distally, 4 mm depth, and the cervical margin approximately 0.5 mm below the CEJ were cut. Five specimens were used for each bonding agent tested. The adhesive was placed and light cured (Demi) following the manufacturer's recommendations. Teeth were restored by placing SonicFill in bulk increments up to 5 mm followed by shaping the occlusal surface and light curing for 20 sec using a Demi curing light. After removal of the matrix band, the restorations were cured for an additional 10 sec from both the lingual and buccal aspects. The restored specimens were conditioned in water at 37°C for 1 week and then subjected to thermal cycling (1,000 cycles, 5°C/55°C). The roots and outer surface of the specimens were sealed except the 2 mm around the margins. The specimens were then subjected to further thermocycling in 0.5% Methylene Blue aq. solution (100 cycles, 5°C/55°C, 30 s dwell time), followed by sectioning in the mesial-distal direction and examination under optical magnification. The extent of microleakage on both the occlusal (a) and cervical (b) margin was evaluated as shown in Figure 1.

Results:

Material	Microleakage Score (stdev)	
	Occlusal	Cervical
SonicFill + OptiBond AIO	0.7 (0.8)	0.3 (0.6)
SonicFill + OptiBond XTR	0.1 (0.3)	0.7 (0.9)
SonicFill + Clearfil SE Bond	0.2 (0.4)	0 (0)
SonicFill + Xeno IV	2.3 (1.8)	0.2 (0.6)
SonicFill + Adper Easy Bond	2.3 (1.6)	0.7 (0.9)

Summary:

When bonded with 6th and 7th generation self-etch adhesives, SonicFill placed in bulk displays good to excellent microleakage scores on the cervical margin. On the occlusal margin, all 6th generation adhesives tested showed good to excellent results. Within in the 7th generation category, OptiBond AIO showed superior performance over other bonding agents.

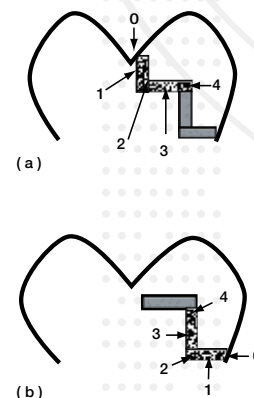


Figure 1. Microleakage scoring on the occlusal (a) and cervical (b) margins.

SonicFill™ Depth of Cure

Authors:

Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL

Aim of the Study:

This study evaluated the depth of cure of SonicFill composite.

Materials:

- | | |
|------------------------|-------------|
| 1. SonicFill | 5. Esthet-X |
| 2. Filtek Supreme Plus | 6. QuiXX |
| 3. Tetric EvoCeram | 7. Venus |
| 4. Surefil SDR | |

Method:

The depth of cure was determined using bottom/top hardness ratio. Ten samples were prepared. The bottom/top hardness measurement employed a 10mm wide x 5mm deep mold. Three measurements were taken on both the top and bottom surfaces using a Rockwell Hardness tester (15T). Samples were polymerized using either a Demi Plus or Optilux 501 curing light and exposure was per the manufacturer's instructions for use. The samples were tested immediately and after 24 h incubation in deionized water at 37 C.

Results:

SonicFill Depth of Cure (Bottom / Top hardness ratio) at 5mm

Curing Light, Power Output	Sample Conditioning	Rockwell Hardness Top Surface (RH ± sd)	Rockwell Hardness Bottom Surface (RH±sd)	Bottom/Top 5mm (%± sd)
Optilux 501 600-650 mW/cm ²	No incubation	81.9 ± 0.6	80.4 ± 1.0	98.1 ± 1.2
Demi 1000 mW/cm ²		82.8 ± 0.9	81.9 ± 1.1	98.3 ± 0.9
Optilux 501 600-650 mW/cm ²	Aged in DI water at 37°C for 24 hours	81.6 ± 0.8	78.9 ± 0.7	96.6 ± 0.7
Demi 1000 mW/cm ²		82.6 ± 0.8	81.3 ± 0.9	98.4 ± 0.7

The hardness measurements revealed bottom/top hardness ratios of a 5mm increment of SonicFill composite greater than 96% in all four groups.

Summary:

SonicFill easily exceeded the 80% bottom to top hardness requirement at 5mm, thus delivering an excellent depth of cure.

Depth of Cure of Several Composite Restorative Materials

Authors:

R. Yapp, M.S., J.M. Powers, Ph.D., THE DENTAL ADVISOR Biomaterials Research Center Dental Consultants, Inc., Ann Arbor, Michigan

Aim of the Study:

To determine the depth of cure by measuring the relative Barcol hardness between the top and bottom surfaces of a molded disk of composite.

Materials:

1. SonicFill A3
2. Quixx Universal
3. Filtek Supreme Ultra A3 Body

Method:

Discs (n=5) of composite 10 mm in diameter and 2 to 5 mm deep (the depth was determined based on the manufacturer's directions for use) were prepared in Teflon molds. The composites were cured with a Demi curing light (Kerr Corporation). The curing time was 20 seconds for the three composites tested. After the light-cured specimens had been stored in 37°C water for 24 hours, three Barcol hardness measurements (Barcol Hardness Tester, GYZJ 935) were taken in the center of the top and bottom sides of each specimen. The hardness of the bottom surface was compared to the top surface (surface adjacent to the curing light) to determine the hardness ratio of the two surfaces: $\% = h_{bot}/h_{top} \times 100\%$. Means and standard deviations were determined.

Results:

Material	Avg sample thickness, mm	Hardness Ratio
SonicFill	5.0	98 (1)
Quixx	4.0	100 (0)
Filtek Supreme Ultra	2.1	100 (0)

Summary:

The generally accepted bottom/top hardness ratio to ensure an adequate depth of cure is 80%. The SonicFill A3 restorative composite at 5mm depth yielded a ratio of 98%, substantially above the target value of 80%. Thus, SonicFill restorative composite can be placed in a single increment up to 5mm depth.

Evaluation of the effectiveness of different adhesive systems in combination with SonicFill™ (Kerr) in Class I cavities

Authors:

Dr. U. Blunck, Dept. Operative Dentistry, Charité-Universitätsmedizin Berlin, Germany

Aim of the Study:

Evaluation of the effectiveness of different adhesive systems in combination with SonicFill in Class I cavities.

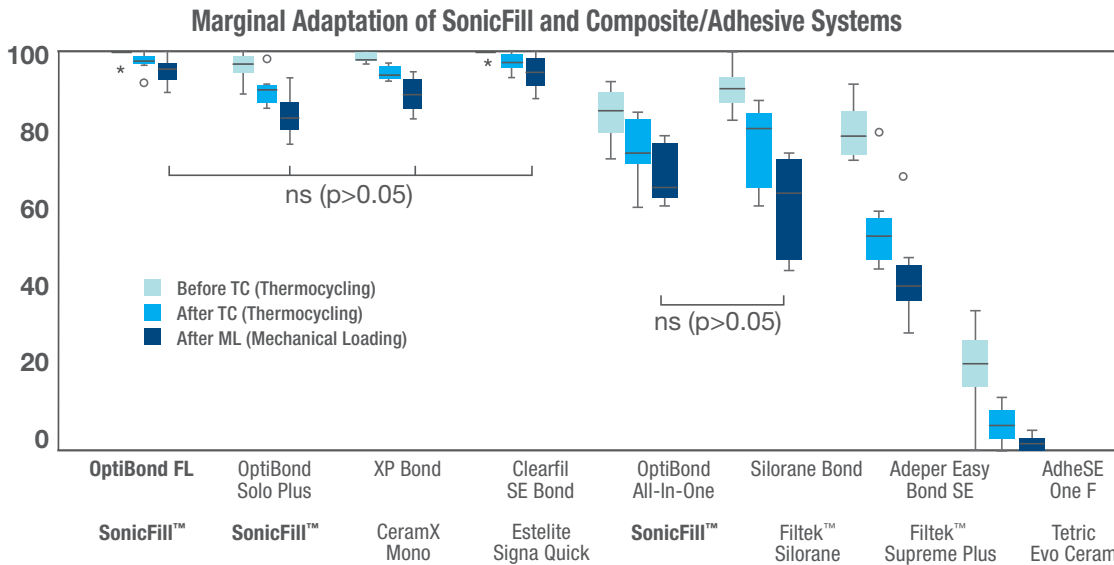
Materials:

- | | |
|------------------------------------|--|
| 1. OptiBond™ FL / SonicFill | 5. AdheSE One F / Tetric Evo Ceram |
| 2. OptiBond Solo Plus / SonicFill | 6. Adper Easybond Self-Etch Adhesive / Filtek Supreme Plus |
| 3. OptiBond All-in-one / SonicFill | 7. Clearfill SE Bond / Estelite Sigma Quick |
| 4. XP Bond / Ceram X Mono | 8. Silorane Bond / Filtek Silorane |

Method:

Class I cavities, approximately 3 mm deep, 6 mm wide in mesio-distal direction, and 4 mm wide in buccal-oral direction, were prepared using a diamond bur. The enamel margins were beveled with a finishing diamond bur. The cavities were filled by using the adhesive / composite resin combinations listed above. The application of all adhesives followed the manufacturer's instruction for use. The SonicFill composite was applied using a bulk filling technique (one increment) and light-cured for 40 s. After polishing, the teeth were stored for 21 days in water, then thermocycled for 2000x between +5 °C and +55 °C and mechanically loaded in a Willytec Chewing Simulator for 150,000 cycles with 50 N. Before and after the thermocycling procedure and after the mechanical loading, impressions were taken with a polyvinylsiloxane impression material and replicas were produced by casting the impressions with an epoxy resin. The margins of the restorations at the enamel/composite interface were examined and quantified with a scanning electron microscope (SEM) at a magnification of 200X using defined criteria to assess the margin qualities. The amounts of length for the different defined criteria were summarized in percent of the total margin length in enamel for each cavity.

Results:



Study conducted by Dr. U. Blunck, Dept. Operative Dentistry, Charité-Universitätsmedizin Berlin, Germany.
Data available upon request.

Amount of “continuous margin” in % of the entire margin length in enamel before and after thermocycling (TC) and after mechanical loading (ML) for the tested adhesive systems in Class I cavities.

Summary:

SonicFill composite placed in one bulk increment has excellent margin adaptation utilizing either a etch&rinse or self etch adhesive. SonicFill has superior marginal integrity than both Filtek Supreme Plus and Tetric Evo Ceram placed in 2 mm increments. Since both Filtek Supreme Plus and Tetric Evo Ceram have been in use for several years, it can be concluded that restorations bulk filled with SonicFill composite will have long term clinical success.

SonicFill™ Mechanical Properties

Authors:

Elaine Nguyen and Ulf Drechsler, Kerr Dental Materials Center, Orange, CA 92867

Aim of the Study:

This study evaluated the physical and mechanical properties of SonicFill and other bulk fill and traditional restorative composite materials.

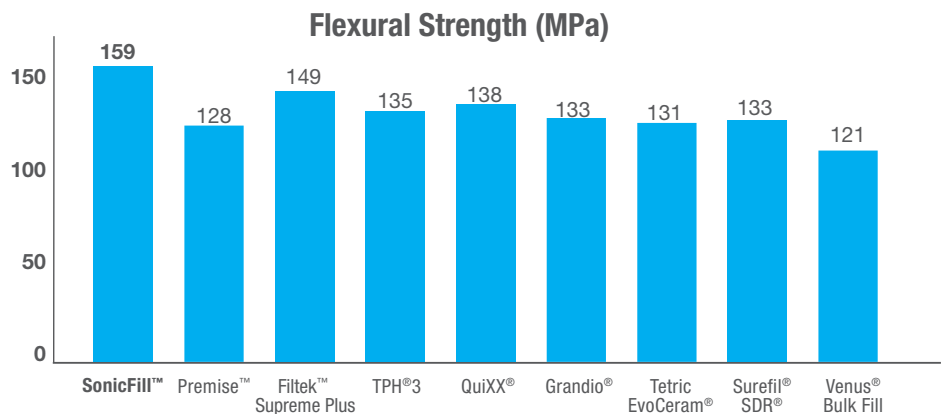
Products evaluated:

1. SonicFill
2. Premise
3. Filtek Supreme Plus
4. TPH3
5. QuiXX
6. Grandio
7. Tetric EvoCeram
8. Surefil SDR
9. Venus Bulk Fill

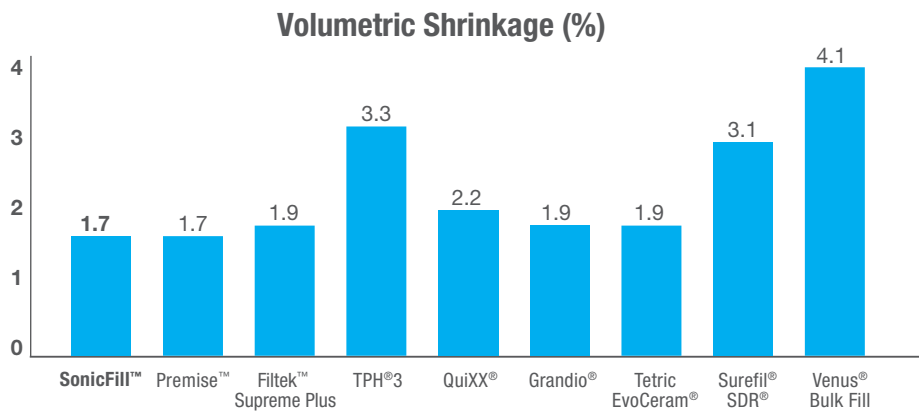
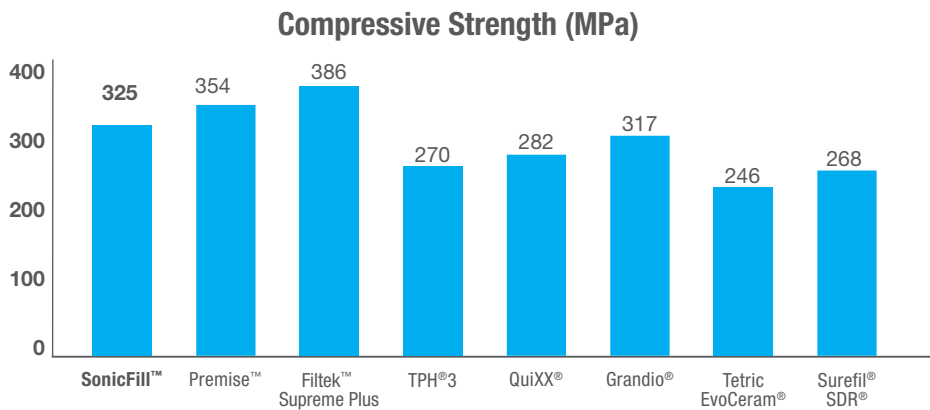
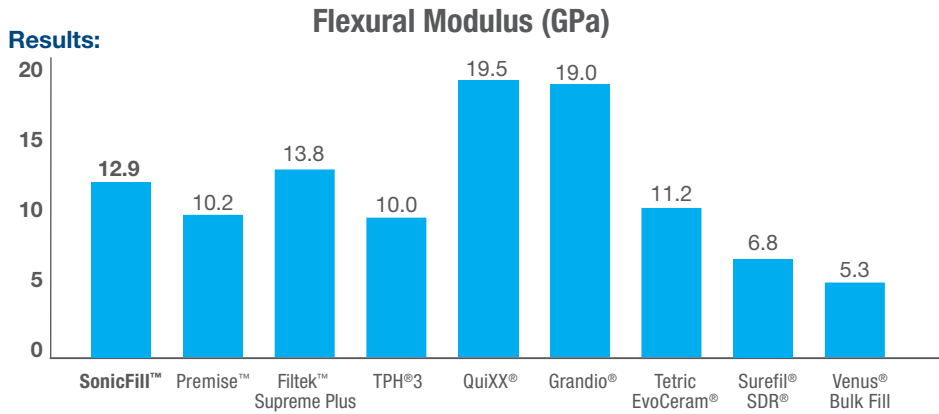
Method and Materials:

Flexural strength and flexural modulus were measured per ISO 4049. Compressive strength samples were prepared by placing the material in a 4 mm diameter x 3 mm height stainless steel mold, covering exposed surfaces with a transparent mylar strip to minimize oxygen inhibition and light curing for 60 sec from each side. Samples were conditioned in DI water at 37°C for 12 hours. Volumetric shrinkage was determined using the water buoyancy method. Cured samples were prepared by placing the material between two glass slides and light curing for 60 sec from each side.

Results:



Internal testing. Data available upon request.



Internal testing. Data available upon request.

Summary:

SonicFill showed the highest flexural strength of all materials tested. Both the flexural modulus and compressive strength of SonicFill are comparable or superior to most of the composite materials evaluated. These properties strongly support that SonicFill can withstand high posterior occlusal forces. Furthermore, SonicFill, along with Premise, displayed the lowest volumetric shrinkage of all materials examined making it well suited for bulk placement.

SonicFill™ Flexural Strength

Authors:

Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL

Aim of the Study:

This study evaluated the flexural strength of SonicFill composite.

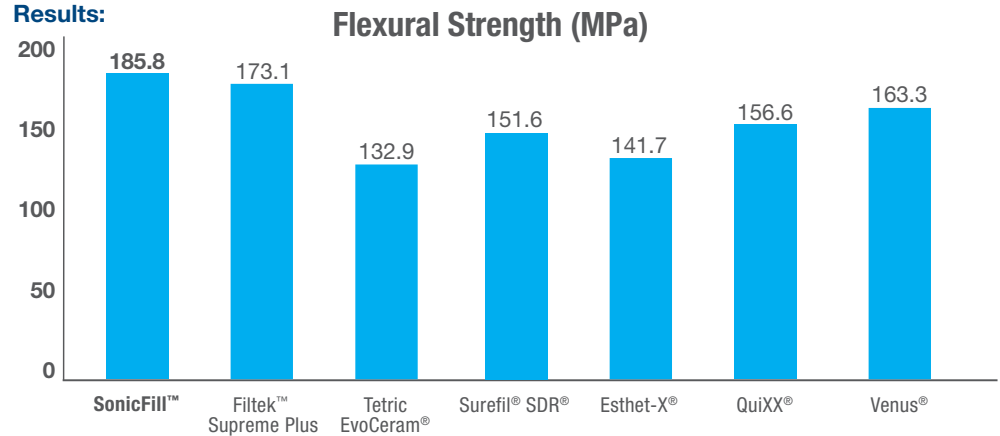
Materials:

1. SonicFill
2. Filtek Supreme Plus
3. Tetric EvoCeram
4. Surefil SDR
5. Esthet-X
6. QuiXX
7. Venus

Method:

All specimens were prepared by dispensing material into a 2 x 2 x 25mm mold. Twelve specimens were prepared for each group in accordance with ISO Standard 4049. Specimens were cured using a Demi Plus curing light and then aged for 24 hours in deionized water at 37°C prior to testing. A Mylar strip was placed on the surface of composite between the composite surface and the light tip to decrease the probability of oxygen inhibition.

Results:



Study conducted by Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL.
Data available upon request.

Summary:

SonicFill restorative composite showed the highest flexural strength of all materials tested. A high flexural strength suggests that the restoration will not deform and degrade even in a high-stress environment such as a posterior restoration.

SonicFill™ Volumetric Shrinkage

Authors:

Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL

Aim of the Study:

This study evaluated the volumetric shrinkage of SonicFill composite.

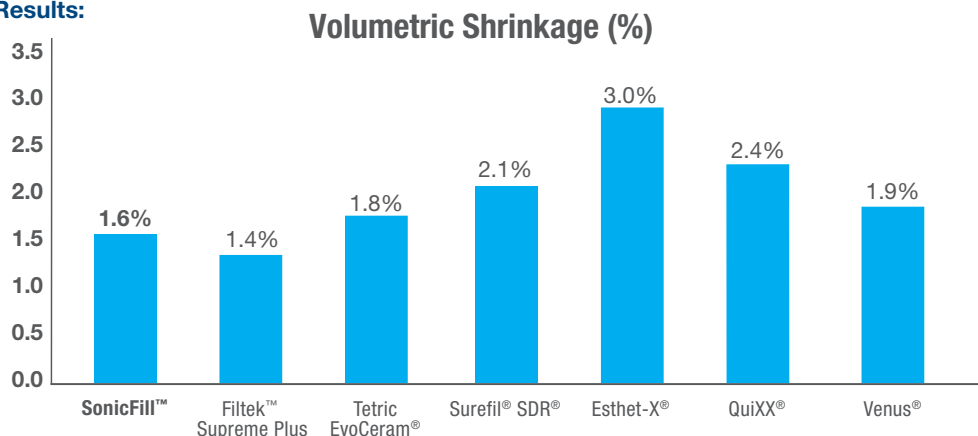
Materials:

- | | |
|------------------------|-------------|
| 1. SonicFill | 5. Esthet-X |
| 2. Filtek Supreme Plus | 6. QuiXX |
| 3. Tetric EvoCeram | 7. Venus |
| 4. Surefil SDR | |

Method:

Helium pycnometry was used to determine the volumetric polymerization shrinkage of each composite material as previously described (Cook et al., Dent Mater, 1999; 15:447–449). Ten specimens were prepared and measured for each material. The average value is reported below.

Results:



Study conducted by Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL. Data available upon request.

Summary:

The volumetric shrinkage of SonicFill is significantly less than most traditional composite materials. Most notably, two products recommended for bulk filling—SureFil SDR and Quixx—have a higher volumetric shrinkage than SonicFill. Low volumetric shrinkage reduces the likelihood of the composite pulling away from the tooth surface during the polymerization process, thus reducing the potential for microleakage and marginal staining.

SonicFill™ Compressive Strength

Authors:

Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL Submitted to AADR 2010

Aim of the Study:

This study evaluated the compressive strength of SonicFill composite.

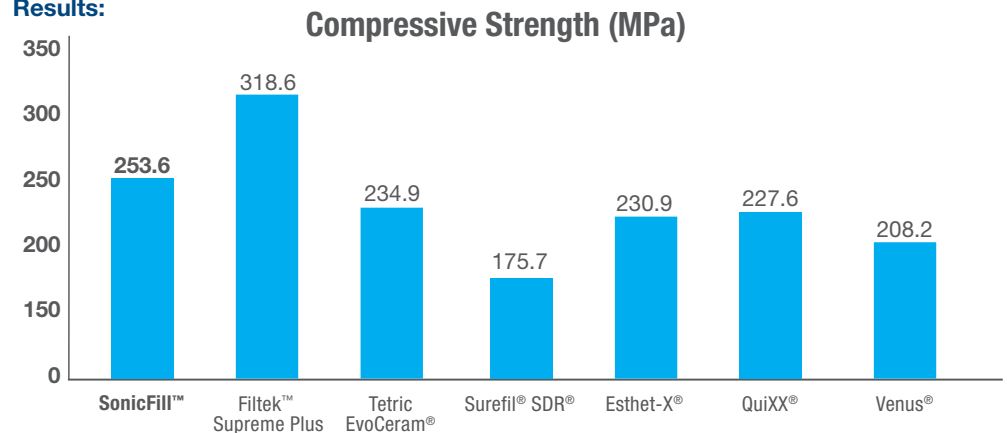
Materials:

- | | |
|------------------------|-------------|
| 1. SonicFill | 5. Esthet-X |
| 2. Filtek Supreme Plus | 6. QuiXX |
| 3. Tetric EvoCeram | 7. Venus |
| 4. Surefil SDR | |

Method:

All specimens were prepared by dispensing material into a stainless steel mold. Twelve specimens were prepared for each material. The samples were cured with a Demi Plus curing light for the time recommended by the manufacturer. A Mylar strip was placed on the surface of composite between the composite surface and the light tip to decrease the probability of oxygen inhibition. Test samples were aged for 24 hours in deionized water at 37°C prior to testing.

Results:



Study conducted by Dr. Jeffrey Y. Thompson, NOVA Southeastern University, Ft. Lauderdale, FL.
Data available upon request.

Summary:

The compressive strength of SonicFill composite is higher than most of the restorative materials evaluated in this study. Consequently, SonicFill will withstand typical posterior occlusal forces resulting in durable, long-lasting restorations.





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SonicFill[™]

Sonic-Activated, Bulk Fill Composite

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