

CLINICAL INSIGHT INTO
**PREDICTABLE
BULK FILLING**



THE DEMAND FOR BULK-FILLING OPTIONS

Which frequently performed procedures in your practice can have a significant impact on productivity? One common procedure is the placement of posterior composites. These usually involve Class I and Class II restorations—and according to the American Dental Association, together Class I and II account for 67% of direct restorations. Therefore, even small improvements in materials and techniques can add up to larger workflow advantages.

Resin composite placement requires precise and strategic technique. For these cases, it's advantageous not only to complete them more efficiently, but also predictably and with superior clinical outcomes that ensure long-term success.

Clinical challenges include:

- proper adaptation of material to the preparation
- bulk-fill versus incremental fill techniques
- polymerization shrinkage and shrinkage stress
- depth of cure
- handling of the material

The growing need to address these challenges created a demand for bulk-fill composites that are capable of being placed and cured in increments greater than 2 mm.

Consider the C-Factor

The configuration factor (C-factor) is an estimation of the stresses generated by a given cavity configuration using the ratio of bonded to unbonded surfaces. The higher the C-factor, the higher the stress generated. If careful technique is not used to reduce polymerization stress, negative outcomes can result, such as postoperative sensitivity, microleakage, secondary caries, and adhesive debonding.

Recent data have suggested that incremental fill techniques to minimize C-factor may not be successful in mitigating polymerization shrinkage stress—therefore new composite technologies and materials are now focusing on bulk-fill techniques.

THE CHALLENGE: POLYMERIZATION STRESS

In dentistry, “faster and simpler” is not always superior: A successful posterior composite restoration requires materials ideally suited to address specific needs. For example, despite the many advances in materials, shrinkage stress remains a fundamental challenge for flowable composites. It can compromise the success of the restoration and contribute to a poor marginal seal, microleakage, microfracture, postoperative sensitivity, and recurrent caries (a primary reason for Class II restoration failures).

In the past, composite resins often were not placed in increments larger than 2 mm because of polymerization shrinkage stress and poor light transmission into deeper preparations. Therefore, restoration of larger cavity forms was time consuming, as composite needed to be placed in small layers and cured before moving on to the next layer. However, new bulk-fill flowable composites have been developed for the effective use of 4-mm increments, while decreasing shrinkage stresses generated during polymerization.

New chemistry can mitigate the harmful effects of volumetric and polymerization shrinkage stress to attain greater marginal integrity. The **SureFil® SDR® flow+** bulk fill flowable breakthrough is in its SDR™ Technology, which optimizes the way that the polymer network is formed while curing, reducing the polymerization stress caused by polymers that become too taut. Through the use of the “Polymerization Modulator,” the resin forms a more relaxed network, resulting in significantly lower stress.

Ultimately, this is a resin that can not only handle or minimize stress factors, but also be cured in a larger increment.



CE LECTURE BY ALAN ATLAS, DDS

THE ESSENTIALS OF HANDLING

One remaining concern about the handling of bulk-fill composites is whether larger increments of material can truly be placed with no negative effects. Can clinicians be confident that adaptation to irregular cavity geometry and the resulting marginal seal will be uncompromised?

The average depth of a Class II cavity form is approximately 6 mm. No currently marketed bulk-fill material should be used in one increment if depth of the preparation is over 5 mm. With the exception of Class II preparations on lower premolars, at least two increments of composite

material are needed. Current light-cured bulk-fill composites cannot be used for a “one and done” placement approach in all Class II clinical situations.

Therefore, when working efficiently and effectively, clinicians should choose materials that can provide the best clinical advantage under these circumstances. In most cases, if at least two increments are necessary, a material that provides an excellent marginal seal against microleakage and protects against voids at the most vulnerable gingival interface is clearly the better option.



CONFIDENCE IN ADAPTABILITY AND STRENGTH

Look for these factors in a bulk-fill restorative:

Low shrinkage stress

Seamless adaptation across irregularities

Adapts to entire floor of proximal box

Self-leveling handling

- Excellent cavity adaptation
- Minimal need for manipulation of material

High radiopacity, visibility on x-rays

Low post-operative sensitivity

Simplified placement technique

SureFil SDR *flow+* is one of the most versatile and predictable restorative materials I use. Its handling characteristics are excellent. Since using **SureFil SDR *flow+*** material, I have seen a significant decrease in post-operative sensitivity. I would highly recommend this product.

James W. Wolitarsky, DDS

The Science: Compilation of Studies



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PRACTICE WITH CLINICAL SUPREMACY

CASE EXAMPLE

Patient: 45 year-old, healthy female.

Discovery: Restoration on #3 had developed defective margins.

CASE PLANNING

After examination during a routine hygiene visit, the patient was shown digital photographs of the defective alloy restoration on #3. After careful consideration, we elected to replace that alloy and the first bicuspid. Patient had no symptoms before replacement, but may have started to if restoration was not performed.

RESULTS

After following up with patient, she had no symptoms after the restorations were placed.



Case courtesy of Dr. Martin Goldstein, Wolcott, Connecticut

THE CLINICALLY PROVEN SOLUTION FOR YOUR PRACTICE

SureFil SDR flow+ material is the most thoroughly researched, clinically proven bulk fill composite, with 7 years of success—more than any other bulk fill composite. **SureFil SDR flow+** has strong rating agency and KOL support.

- Lowest stress bulk fill flowable
- Radiopaque: allows for visualization on x-rays, helping to prevent misdiagnoses
- Part of the only Class II Total Practice Solution™
- Cures in 10-seconds with LED lights with an output between 1000-2000 mW/cm² with the universal shade composite.
- Easy placement technique with self-leveling handling eliminates steps before curing and provides excellent cavity adaptation
- Chemically compatible with methacrylate based bonding agents and composites
- Available in Universal, A1, A2, and A3 shades



ABOUT THE COMPANY

Dentsply Sirona is the world's largest manufacturer of professional dental products and technologies, empowering dental professionals to provide better, safer and faster dental care. Our products and solutions include leading positions and platforms across consumables, equipment, technology, and specialty products. As The Dental Solutions Company™, Dentsply Sirona provides dental professionals a comprehensive end-to-end solutions offering. This offering includes some of the best-known and established brands in the industry. We are proud to be a preferred partner for dental practices, clinics, dental laboratories and authorized distributors worldwide.

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RESOURCES

DENTSPLY Caulk's SureFil SDR flow: A "Game Changer" That Reduces Procedure Steps. *Comp Contin Educ Dent.* 2014;35(6):430.

Conte NR Jr, Goodchild JH. Flowable composite resins: do they decrease microleakage and shrinkage stress? *Comp Contin Educ Dent.* 2013;34(Spec Iss 4):1-6.

Goodchild JH. Does a consistently reliable solution exist for the successful placement of class ii composite resin restorations? *Comp Contin Educ Dent.* 2013;34(Spec Iss 4): 8-13.

Goodchild JH. One and done? *Caulk Talk.* August 4, 2015.

Goodchild JH. Why use bulk-fill flowable composites? *Inside Dentistry.* 2013(8):92-95.

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EBOOKS

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THE LEADER. NO MATTER THE CLASS.

SureFil SDR *flow* material is the most thoroughly researched and clinically proven bulk fill composite. **NEW** SureFil SDR *flow+* has higher wear resistance and is available in Universal, A1, A2, and A3 shades making it suitable for Class III and V indications and more versatile than ever. Increased radiopacity allows for better visualization on x-rays, helping to prevent misdiagnoses. The best just got even better.

Visit www.SureFilSDRflow.com to request a free sample of the bulk fill flowable that's in a class of its own.

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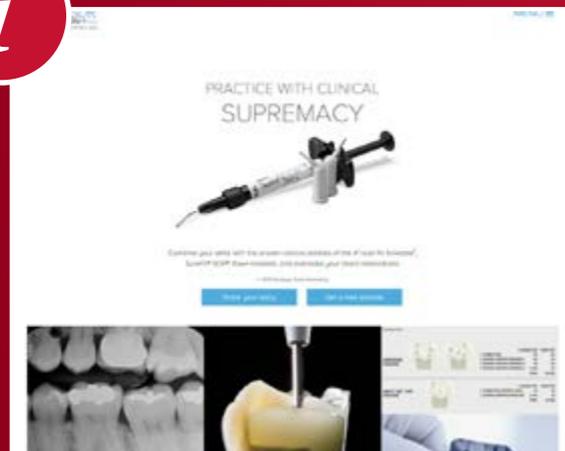
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SureFil SDR
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POSTERIOR BULK FILL FLOWABLE BASE



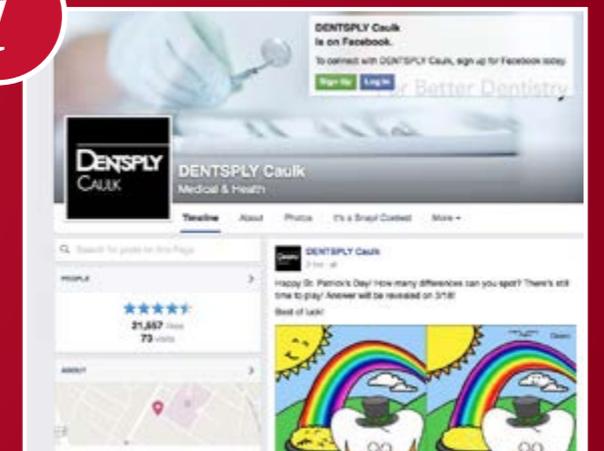
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