

SureFil® SDR™ *flow* Posterior Bulk Fill Flowable Base

New restorative material represents a new category of flowable composite.

Placement of direct composite resin restorations is one of the most frequently performed procedures in the dental office today. Throughout the progression of composite-based dentistry, clinicians have used varying techniques during material placement, such as performing incremental build-up of the packable composites and using flowable composites as bases and liners to help combat such issues as volumetric shrinkage and the associated stresses it creates. Stress generated within the composite resin during polymerization is considered by many to be more critical than the volumetric shrinkage inside the preparation.

Flowable composites are often used as

a base/liner because it is believed that the low-viscosity material will adapt well to the internal configuration of the preparation and also act as a shock absorber beneath the overlying composite. To ensure optimal function, a liner should have sufficient strength to resist the compressive forces generated during mastication and display a resistance to solubility. There are more than 50 flowable composites currently available in today's market, some displaying "flowable" traits and others billed as "stackable" flowables, and the line has become blurred as to which flowable to use and when.

As the first restorative material used in a multi-layering technique, flowable composites are often placed in small increments, up to 1 mm in depth. Completing the multi-layering of

posterior composites is often time-consuming and technique-sensitive for the clinician. SureFil® SDR™ *flow* material represents a new category of flowable composite (Figure 1). SureFil® SDR™ *flow* material cures to depths exceeding 4 mm and is indicated for bulk placement of a base. This unique formulation modifies the polymerizing and cross-linking process during curing to form an optimized polymer network structure with internal stresses reduced by up to 60% when compared to conventional flowable composite resins. The volumetric shrinkage of the material is 3.6% but, more importantly, the stress generated during curing is 1.4 MPa, whereas many current flowable composites are above 4 MPa. The material is 68% filled by weight and 44% by volume, ensuring adequate physical and mechanical properties. The material can be placed in up to 4-mm increments while requiring only a 20-second cure time. In addition, the material exhibits excellent adaptation to the preparation walls (Figure 2), reducing the potential for postoperative patient sensitivity caused by voids. The self-leveling characteristic (Figure 3) eliminates the need to manipulate the material before curing and creates a surface ideal for the addition of any methacrylate-based universal composite to complete the restoration and provide the desired strength, esthetics, and wear resistance for occlusal surfaces.

SureFil® SDR™ *flow* material is available in one universal shade suitable for the majority of restorations and is more radiopaque than many currently used flowable composites. With a value of 2.2 mm/Al, the material is more opaque than natural dentin (1.0) and enamel (2.0) and provides the clinician with an easily readable interface between natural tooth structure and restorative material, allowing for radiographic verification of restoration integrity.

With placement steps minimized,

the technique for posterior composite placement has been simplified (Figure 4). After cavity preparation, isolation, and proper treatment of tooth surfaces with an adhesive, the SureFil® SDR™ *flow* material can be directly applied into the preparation using the Compula® Tips delivery system. The narrow cannula allows for excellent visualization into the preparation during placement. Dispensing of the material should begin at the deepest portion of the cavity preparation and continue until an increment of 4 mm has been placed or the material reaches 2 mm short of the cavosurface margin. The material should then be cured for 20 seconds with a standard halogen based or LED light with a minimum output of 550 mW/cm². The restoration is completed by replacing the occlusal 2 mm with any methacrylate-based composite (eg, Esthet-X® HD composite, DENTSPLY Caulk) as per the manufacturer's directions. After the sculpting, contouring, and curing of the occlusal component, the restoration can be finished and polished in the preferred manner of the clinician.

By simplifying the steps required for posterior composite placement while minimizing polymerization stress and shrinkage, the uniquely formulated SureFil® SDR™ *flow* posterior bulk fill flowable base material clearly not only saves the clinician valuable time, but results in a well adapted, esthetically pleasing durable restoration.

FOR MORE INFORMATION, CONTACT:

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FIG. 1

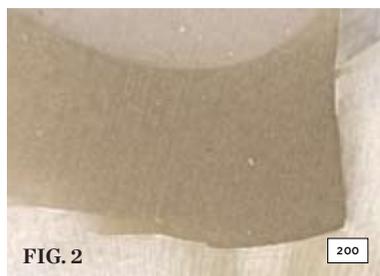


FIG. 2



FIG. 3



FIG. 4

CHARACTERISTICS (1.) SureFil® SDR™ *flow* material represents a new category of flowable composite. **(2.)** The material exhibits excellent adaptation to the preparation walls. **(3.)** The self-leveling characteristic eliminates the need to manipulate the material before curing and creates a surface ideal for the addition of any methacrylate-based universal composite. **(4.)** With placement steps minimized, the technique for posterior composite placement has been simplified.