

A real leader takes you further.

SDR® flow+  
Bulk Fill Flowable

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 Dentsply  
Sirona

# The unmatched SDR bulk fill technology

In 2009, SureFil® SDR® flow material with SDR® technology was the first product that allowed 4mm bulk placement in flowable consistency. More than 50 million applications and several long-term clinical studies later, it is the bulk fill technology of choice for faster and easier creation of reliable Class I and Class II restorations. SDR technology answers the two challenges of Class I and Class II: Adaptation and efficiency.

## Adaptation is the key to long term success

Studies indicate that marginal gaps can lead to the development of wall lesions and can result in secondary caries<sup>1</sup>, ultimately putting restoration longevity at risk.

- Voids and gaps between restoration and cavity walls directly influence secondary caries formation<sup>1</sup>
- Improper adaptation of composite during placement leads to the formation of voids<sup>2</sup>
- High shrinkage stress may lead to marginal gap formation<sup>2</sup>

### Flowability

SDR flow+ material's unique chemistry helps ensure the longevity and overall quality of a bulk fill restoration. 4mm bulk fill technology is an essential part of ensuring the longevity and overall quality of a bulk fill restoration. SDR flowable bulk fill technology fills and easily adapts to the cavity, flowing deeply into nooks and crannies to provide excellent cavity adaptation during placement.



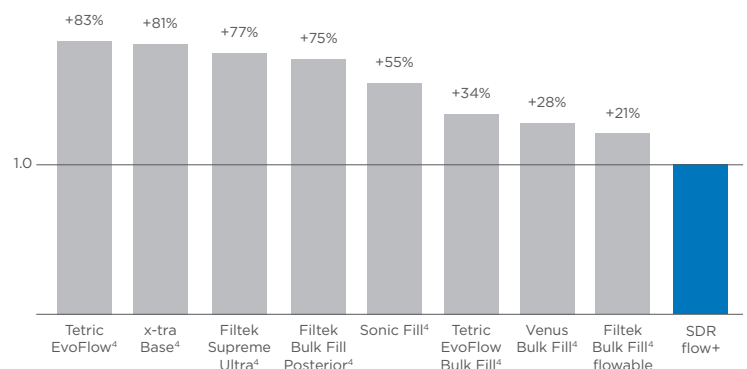
## New name. Same proven performance.

Dentsply Sirona created the bulk fill flowable category in 2009 with SureFil SDR flow material. The next generation, SureFil® SDR® flow+ material, extended its lead over the competition even further by enhancing its formula to allow use in an expanded range of indications while also offering more shades, greater wear resistance, and increased radiopacity. Now the leader in bulk fill flowables keeps its well-proven performance, but with a streamlined new name: SDR® flow+ material.

### Low shrinkage stress

During light-cured polymerization, resin monomers are in chaotic movement as they begin to form the polymer matrix. SDR technology enables the formation of a more relaxed network, minimizing the build-up of stress. This minimizes the risk of gap formation through stress during polymerization and ensures excellent adaptation even in 4mm bulk placement.

Shrinkage stress: Shown as a ratio of SDR flow+ material vs. competitors<sup>3</sup>

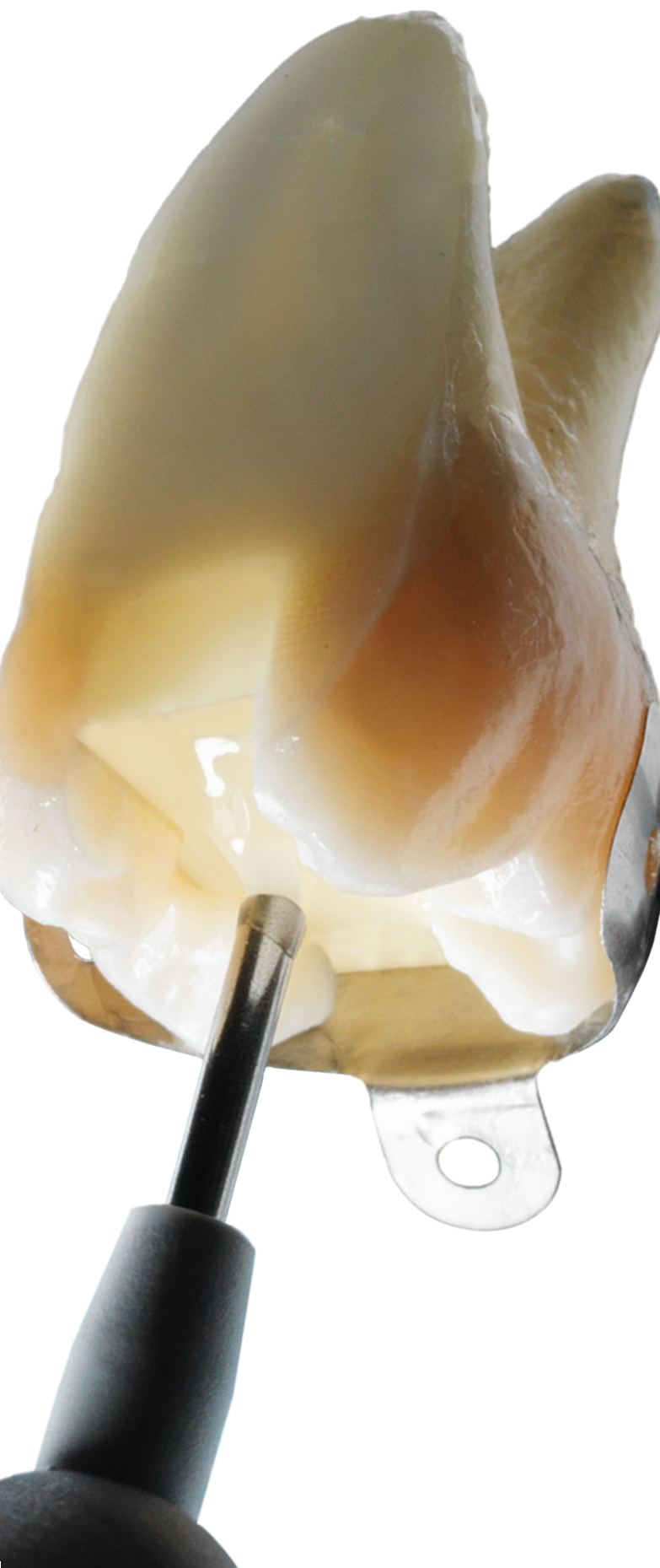


<sup>1</sup> Kuper NK, Opdam NJ, Ruben JL, de Soet JJ, Cenci MS, Bronkhorst EM, et al. Gap size and wall lesion development next to composite. J Dent Res 2014;93, 108S-13S

<sup>2</sup> Nedeljkovic et al. Is secondary caries with composites a material-based problem? Dent Mater 31 (2015), e247-e277

<sup>3</sup> Data on file

<sup>4</sup> Not a registered trademark of Dentsply Sirona



## Efficiency is the key to productivity

Direct restorations represent approximately a third of the annual revenue of a general dentist. Increasing the efficiency of the Class II treatment directly impacts day-to-day dental office revenue.<sup>5,6</sup> SDR® bulk fill technology allows the bulk fill material to be applied in 4mm increments without an additional liner. This automatically decreases procedural time and inventory.

- Self-levels for up to 40% time savings over classic layering technique
- Is used without an additional liner
- Self-levels and does not require additional manipulation to adapt



SDR® flow+ material procedure

- Bonding
- ① SDR flow+ material
- ② Capping Layer: Universal composite

Conventional procedure

- Bonding
- ① Flowable Liner
- ② Increment 1: Universal composite
- ③ Increment 2: Universal composite
- ④ Increment 3: Universal composite

<sup>5</sup> 2010 Survey of Dental Practice – Income from the Private Practice of Dentistry. <http://www.ada.org/1444.aspx>

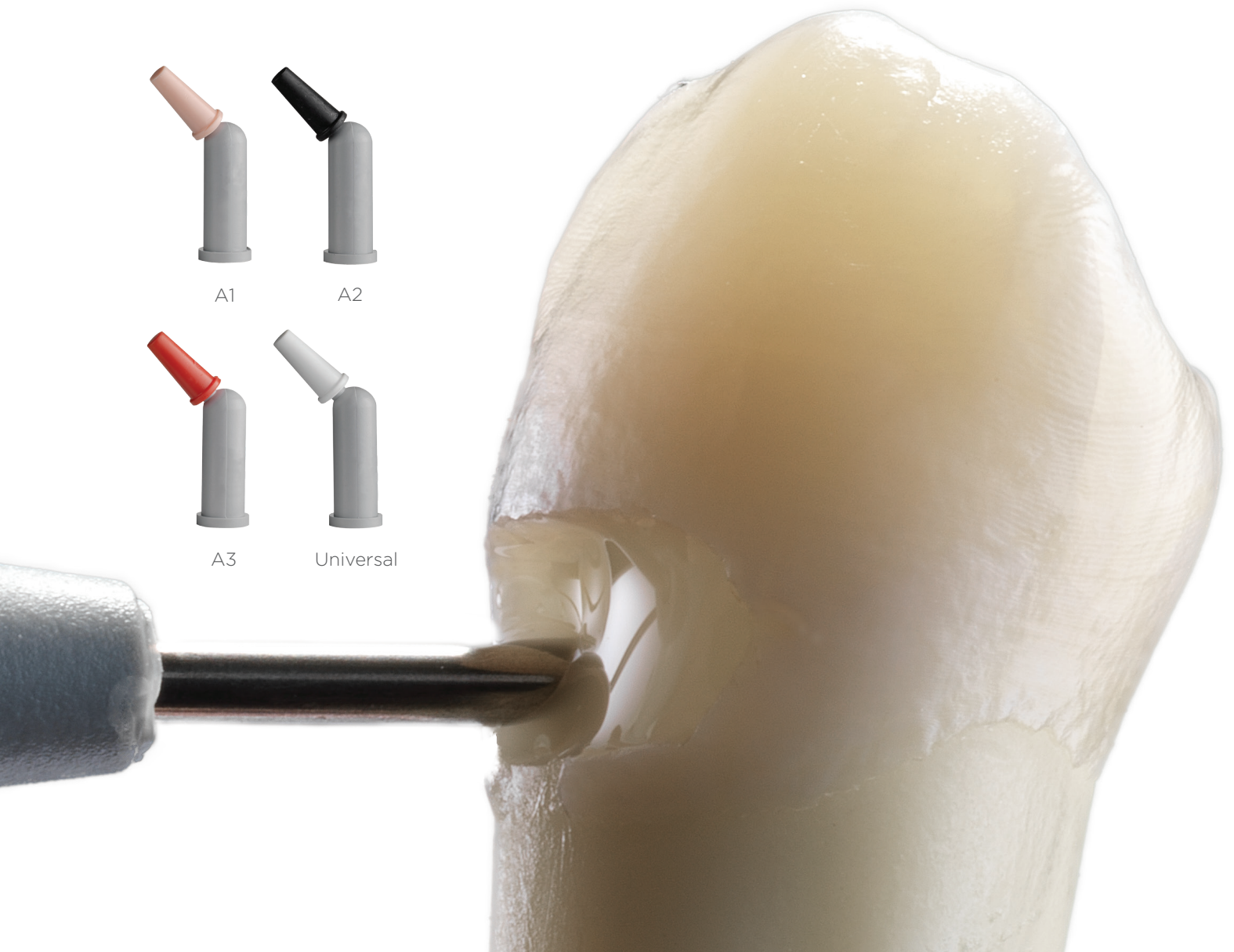
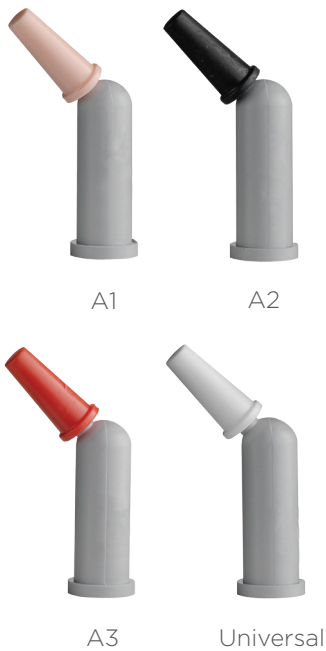
<sup>6</sup> American Dental Association Procedure Recap Report (2006)

# How do you make the best even better? Make it more useful.

SDR® flow+ material provides even more versatility, thanks to its wide range of indications and three A-shades in addition to Universal.

## + More Shades

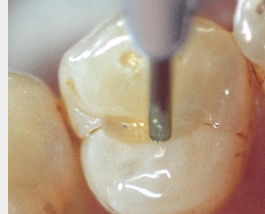
Four shades, including universal, A1, A2, and A3 increases the versatility even further in a wide range of cases including visible Class II restorations, primary posterior dentition, and the Class III and Class V restorations.



## Additional opportunities to use SDR<sup>®</sup> flow+ material

### + More Indications

Due to its unique chemistry and improved wear resistance, SDR flow+ material is approved to be used in Class III and Class V restorations where a capping agent wouldn't be used. This expands our capabilities to include more restoration classes than many other flowable materials.



Dentsply Sirona internal picture

#### +Pit & Fissure Sealing

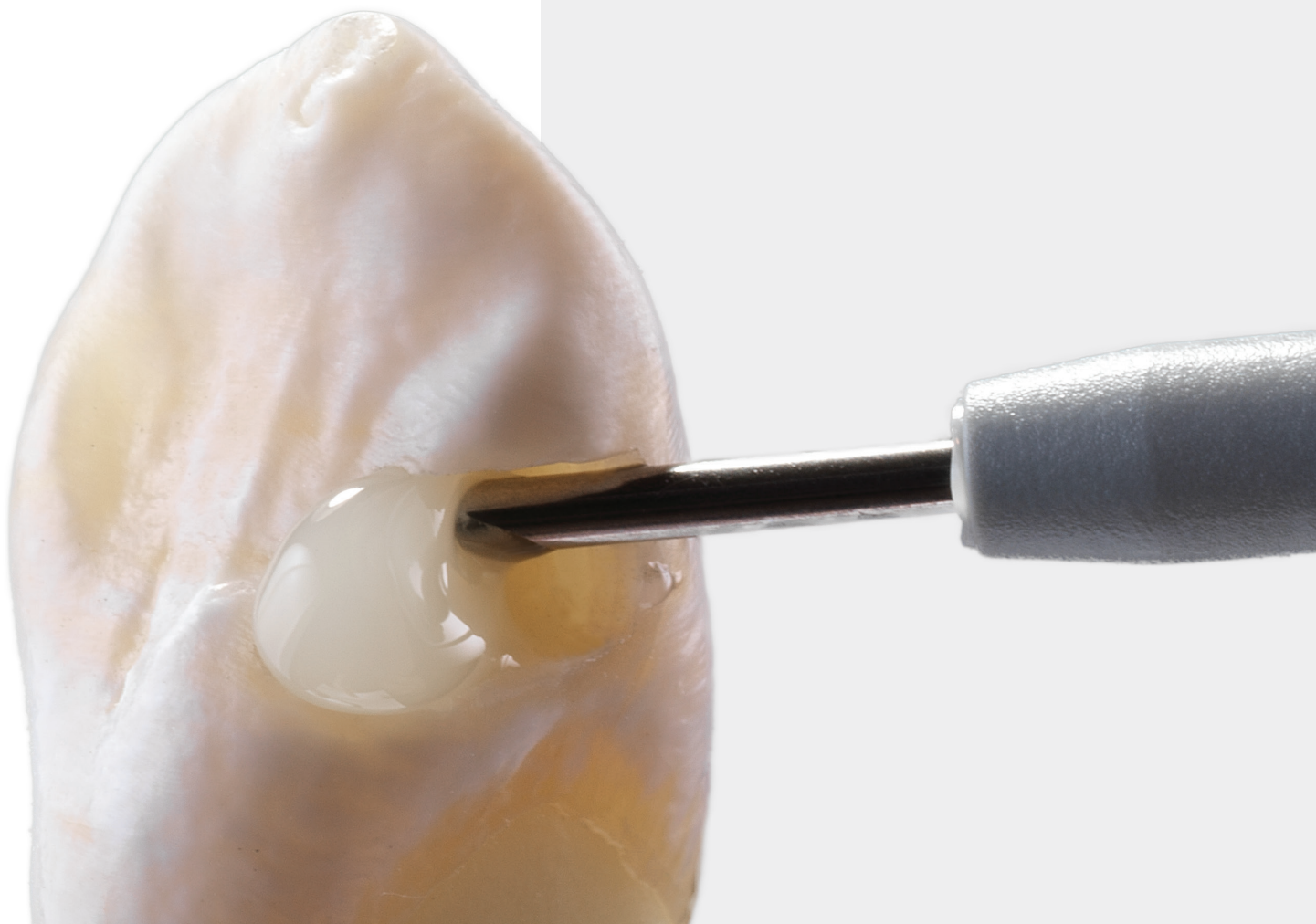
The thin compule allows the material to flow easily into all fissures for highly precise application.



Dr. van der Vyver

#### +Core Build-Up

The 4mm depth of cure of SDR flow+ material make it a fast and easy alternative for core build-up. It handles instrumentation and shaping with ease.



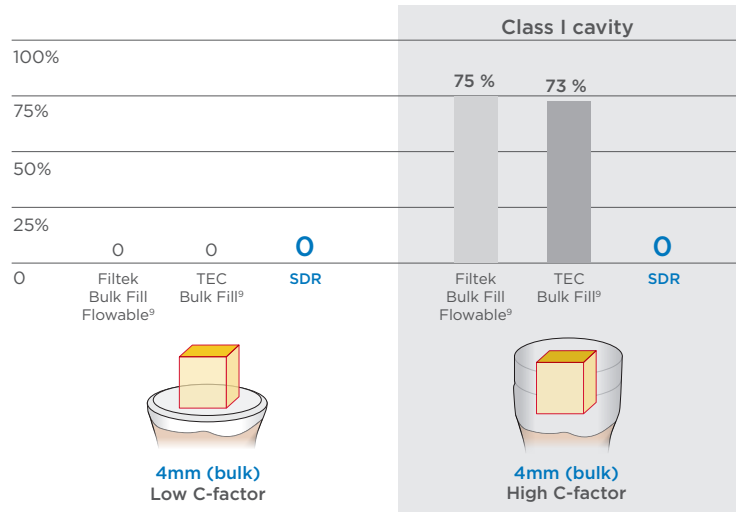
# Reliable adhesion and tight seal in high C-factor cavities

## +Reliable adhesion

Endodontic cavities are particularly challenging for bulk fill composites, as most are very deep Class I like cavities. This maximizes shrinkage stress potential, indicated by a high C-factor. Studies indicate that when high-C-factor cavities are filled in bulk, the choice of the composite is an important element to avoiding adhesive debonding.<sup>7</sup>

SDR® flow+ material with SDR® technology can deal with high C-factor cavities leading to a tight coronal seal even for post-endodontic cavities.

Pre-test failures [%] during micro tensile bond strength testing to cavity floor<sup>7</sup>

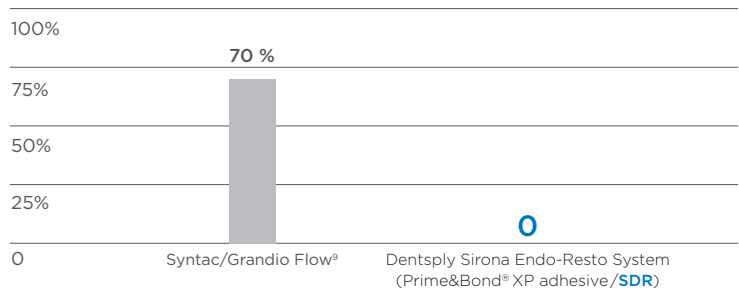


## +Tight seal

“SDR flow+ material ensures a tight seal of the endodontic access cavity – an important factor for long-term endodontic treatment success.”

Prof. Dr. Schirmeister,  
University of Freiburg, Germany

Relative number [%] of specimen showing leakage into root canal<sup>8</sup>



<sup>7</sup> Van Ende A et al., 2016: Effect of Bulk-filling on the bonding efficacy in Occlusal Class I Cavities. J Adhes Dent.; 18(2):119-24

<sup>8</sup> Internal Report Ebert J, Study No 14 1408 (2011). Available upon request, see contact details

<sup>9</sup> Not a registered trademark of Dentsply Sirona

# Years of clinical success

While making Class I and Class II restorations faster and easier, the SDR® technology in SDR® flow+ material also shows excellent long-term reliability in several clinical studies. In fact, the long-term survival rates of bulk fill restorations with SDR technology provided to be equivalent to those of restorations done in the conventional layering technique.

## Split mouth studies

by J.W.V van Dijken and U. Pallesen<sup>10,11</sup>

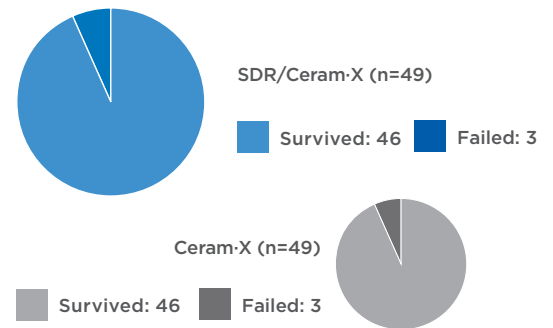
### 6 YEAR FOLLOW-UP<sup>10</sup>

#### JWV van Dijken and U. Pallesen

A total of 98 Class I and Class II restorations were evaluated at recall. 49 using SDR and Ceram-X® universal composite in the bulk-fill technique against the same number using just Ceram-X universal composite in the layering technique.

The observers conclude:

- Clinically safe
- Highly acceptable clinical durability
- Clinical performance and failure rate was equivalent to conventional layering (3 restorations each)



“During the six year follow up, the bulk fill technique was proven to be a clinically safe technique; highly acceptable; clinically durable.”

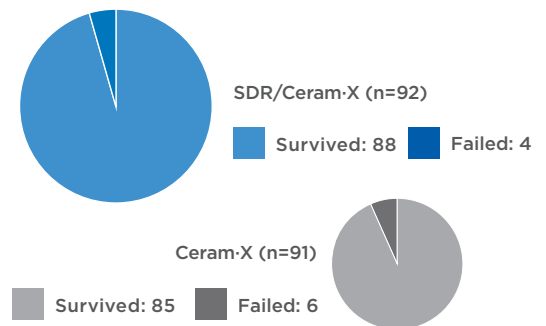
### 5 YEAR FOLLOW-UP<sup>11</sup>

#### JWV van Dijken and U. Pallesen

A total of 183 Class I and Class II restorations were evaluated at recall. 92 using SDR and Ceram-X universal composite in the bulk-fill technique against 91 using just Ceram-X universal composite in the layering technique.

The observers conclude:

- Both restorative techniques showed good surface, marginal stability and color stability
- No statistically different annual failure rates between bulk-fill and layering technique were observed
- No post-op sensitivities have been observed at all



“The use of a 4mm incremental technique with the flowable bulk-fill resin composite showed during the 5-year follow up slightly better, but not statistical significant, durability compared to the conventional 2mm layering technique in posterior resin composite restorations.”<sup>11</sup>

## 36 Month clinical trial results<sup>12</sup> J. Burgess and C. Munoz

- No failures attributable to SureFil® SDR® flow material
- No post-operative sensitivities
- No adverse effects on gingiva in contact with SureFil® SDR® flow material

“There were no observations of recurrent caries associated with the low stress resin and no reports of adverse events throughout the duration of the trial.”<sup>12</sup>

<sup>10</sup> van Dijken JWV, Pallesen U, 2017: Bulk-filled posterior resin restorations based on stress-decreasing resin technology: a randomized, controlled 6-year evaluation.; Eur J Oral Sci. 2017 Aug;125(4):303-309.

<sup>11</sup> van Dijken JWV, Pallesen U, 2016: Posterior bulk-filled resin composite restorations: A 5-year randomized controlled clinical study; J Dent 2016 Aug;51:29-35

<sup>12</sup> Internal report #765-540 (2012-02-17); Data on file

# Integral to Class II Procedural Success



## Palodent® Plus Sectional Matrix System

- Adapts to the natural contour of the tooth
- Creates predictable, accurate contacts and a tight gingival seal
- Can be configured for multiple restorations at once



## Prime&Bond elect® Universal Dental Adhesive

- Versatility for use with all etching methods, all indications
- Low viscosity for a thin adhesive layer and less pooling
- Virtually no post-operative sensitivity
- Cures clear



## SmartLite® Focus® Pen Style L.E.D Curing Light

- Collimated light beam and homogenous profile to deliver light energy uniformly down to clinically relevant depths
- Lower risk of uncured resin at gingival margin
- Excellent intra-oral control through pen-style design and 330° head rotation

SDR® flow+ Bulk Fill Flowable

## Ordering Information



Compula® Tips



Syringes

### SDR flow+ Introductory Kit **61C100**

25 Compula Tips (0.25g each) - Universal shade  
Compules® Tips Gun

### SDR flow+ Syringe Refill Universal Shade **61C130G**

2x Syringe Universal shade (1g each)  
15x Syringe tips

### Compula Tips Refill Universal Shade **61C101**

15 Compula Tips Universal shade (0.25g each)

### SDR flow+ Syringe Eco Refill Universal Shade **60603050**

10x Syringe Universal shade (1g each)  
60x Syringe tips

### A1 Shade **61C106**

### A2 Shade **61C107**

### A3 Shade **61C108**

### SDR flow+ Syringe Tip Refill **61C111G**

60x Syringe tip

### SDR flow+ Compula Tips Bulk Refill **61C103**

50 Compula Tips (0.25g each)

### Dentsply Sirona Restorative

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