

# VisCalor bulk

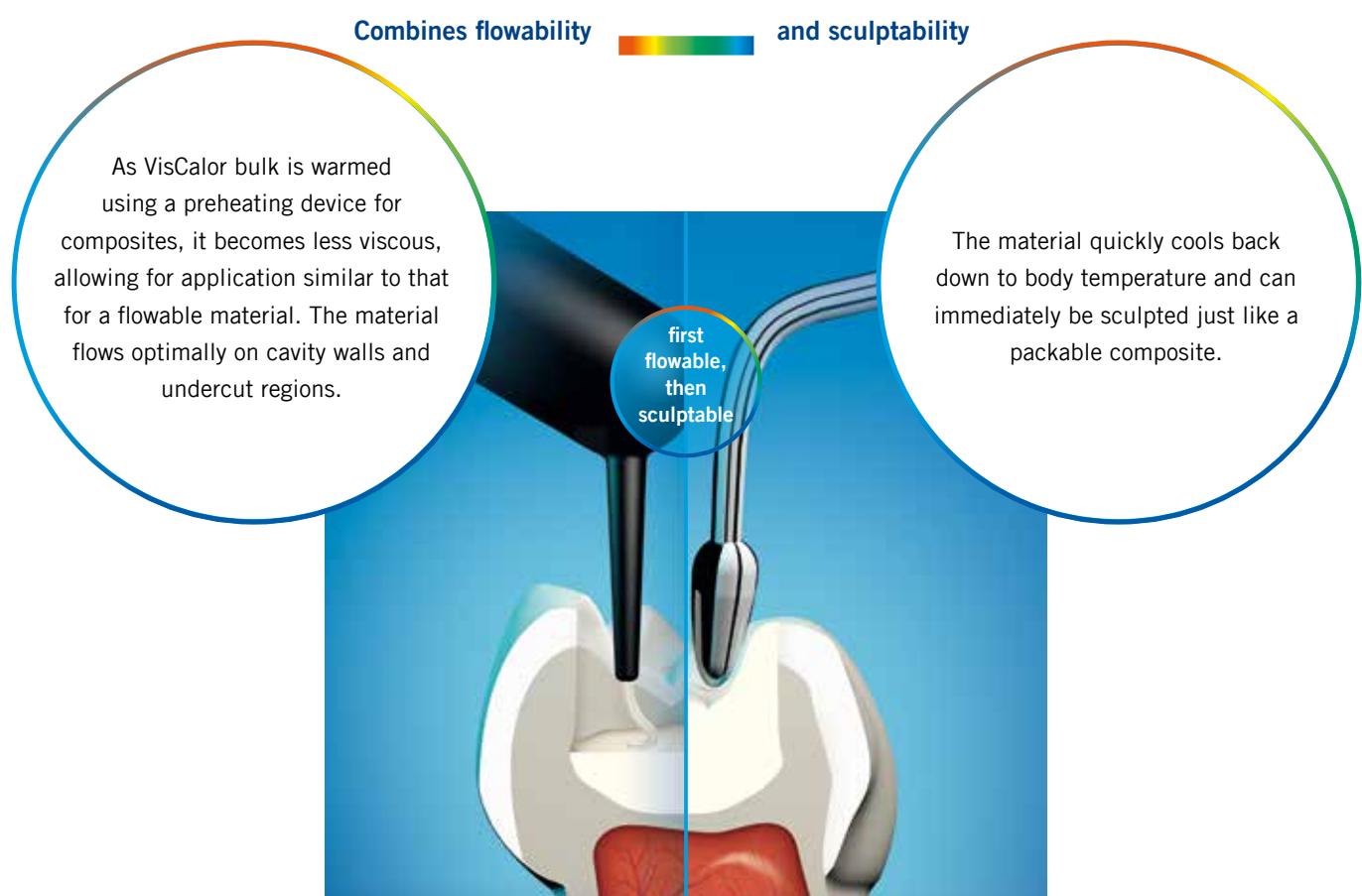
THERMOVISCOS BULK FILL COMPOSITE

# VisCalor® bulk

## COMBINES FLOWABILITY AND SCULPTABILITY

Packable bulk-fill composites are suitable for the reliable filling of large posterior cavities as part of secondary treatments. These materials cannot easily be used to fill very deep and narrow cavities that have undergone defect-oriented and minimally invasive preparation: perfect adaptation to the cavity floors and walls is often difficult to achieve. The use of flowable composites as base materials is a good alternative for this type of deep, narrow cavity, but they still need to be coated with a covering layer of packable composite. This two-phase process makes placing a restoration a time-consuming task.

VisCalor bulk follows a completely new approach: the material combines the flowability of a flowable composite during application with the sculptability of a packable composite. VisCalor bulk is therefore a material that can be used for both large and narrow cavities, without having to compromise with regards to adaptation or strength.



As a result, VisCalor bulk offers the benefits of both a flowable composite and a packable composite during the placement of a restoration.

This allows for efficient single-phase restorations without multiple working steps for base filling, increments or covering layers.

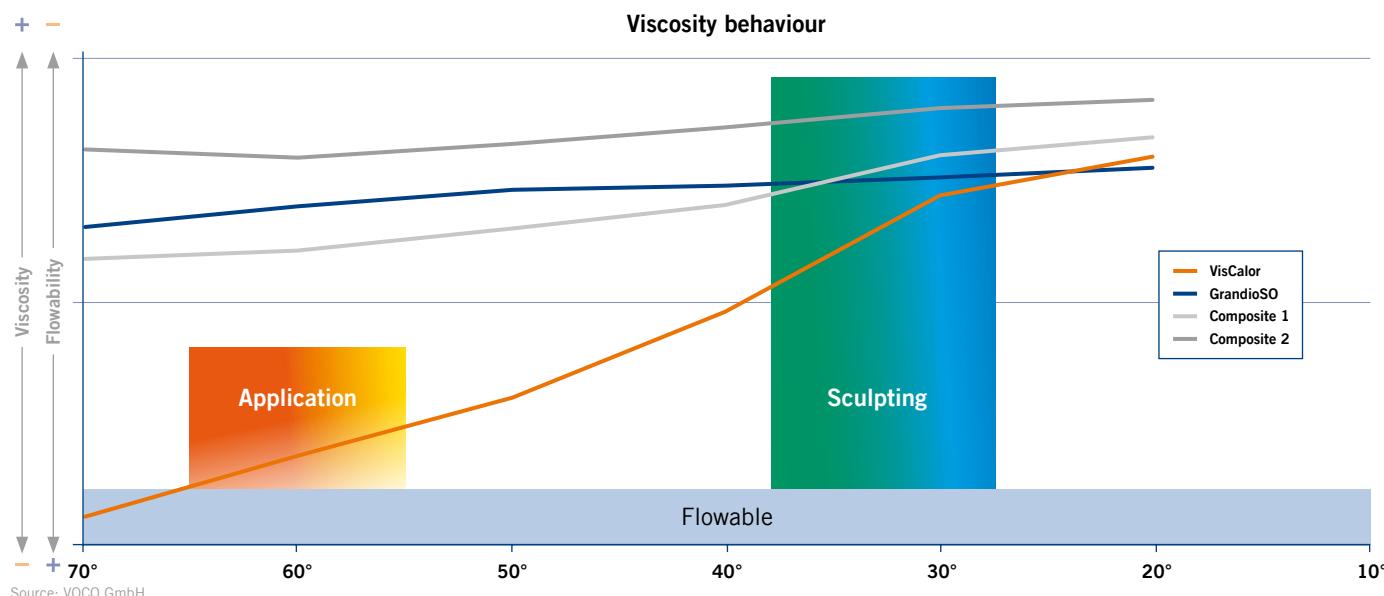
# VisCalor® bulk

## UNIQUE VISCOSITY BEHAVIOUR



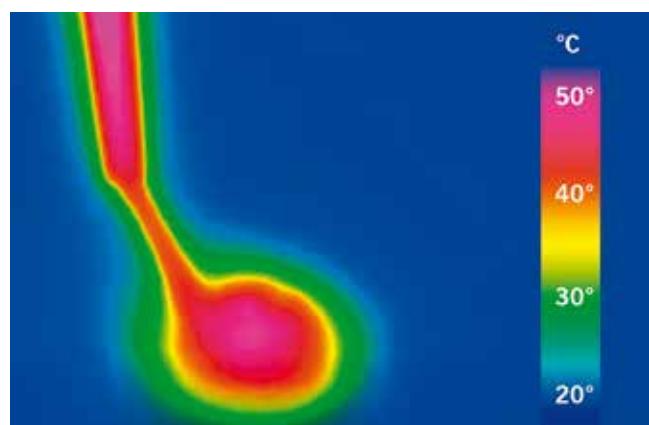
VisCalor bulk is the world's first material to use thermo-viscous-technology. The special surface treatment on the fillers and a coordinated resin matrix help to significantly extend the normal viscosity-reduction effect when the temperature is increased. This

results in a material that acquires the consistency of a flowable material when warmed up in a standard 68 °C composite warmer, or to full benefit in the new VisCalor Dispenser, but that is sculptable like a packable composite at body temperature.



The graph shows the viscosity behaviour of various materials. Only VisCalor bulk has a similar viscosity to a flowable material when warmed up to 68 °C. When the material is cooled down to 38 – 27 °C, it becomes significantly more viscous

and can be easily sculpted. During the application phase, VisCalor bulk stands out thanks to its optimal consistency that conventional composites cannot achieve when warmed up.



Source: Prof. Braun, Universität Marburg

The recording using a thermal imaging camera clearly shows that VisCalor bulk cools down to the ambient temperature as soon as it is applied. Impairment of the pulp due to heat can therefore be excluded.<sup>1</sup>

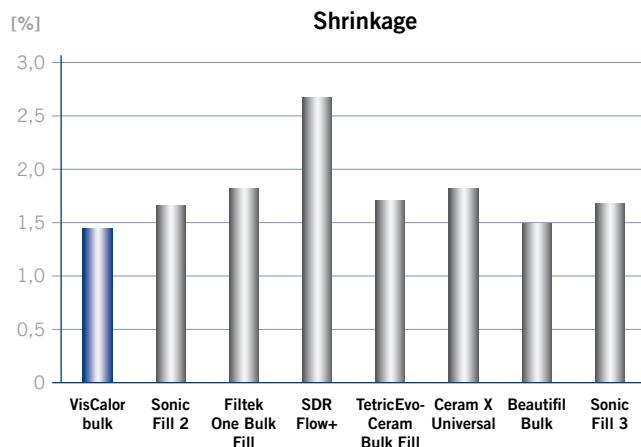
<sup>1</sup> Braun A; Temperature development inside the tooth during application of a thermoviscous bulk fill material; Report to VOCO; University of Aachen, 2019.

## VisCalor® bulk

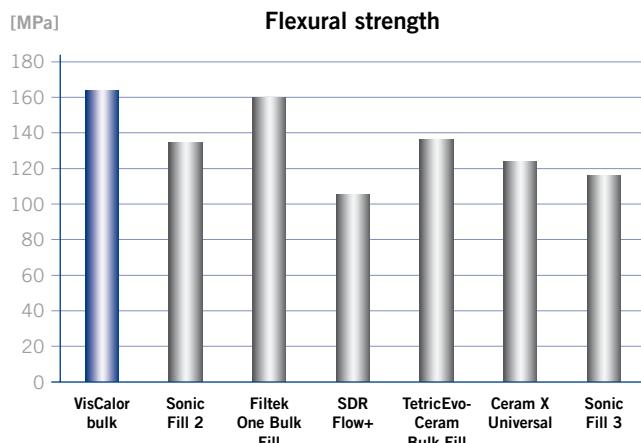
### A STRONG MATERIAL



4 mm increments: this means a relatively high proportion of the composite surface is in contact with the cavity margin, which turns the focus to the issue of shrinkage. With a volume shrinkage of 1.44 % by volume and a shrinkage stress of 4.6 MPa, VisCalor bulk is in a class of its own among bulk-fill composite materials.



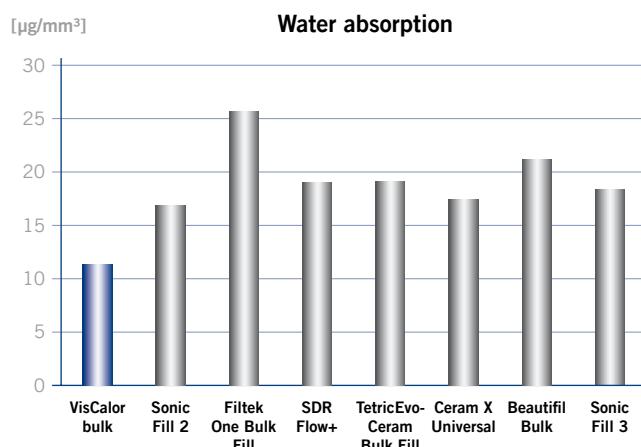
Source: Internal measurement



Source: Internal measurement

The flexural strength measurements also prove that VisCalor bulk is the ideal material. The material has a flexural strength of 164 MPa, and the compressive strength of 335 MPa also indicates impressive longevity. Restorations performed with VisCalor bulk can therefore withstand day-to-day stresses for a long time.

Since discolouring substances can also penetrate into the restoration when water is absorbed, VisCalor bulk also shows its strengths here – for restorations that are reliable and aesthetically pleasing over the long term.



Source: Internal measurement

## VisCalor® bulk

### TIME-SAVING AND AESTHETICALLY PLEASING

#### 4 mm with no covering layers

With VisCalor bulk, you can place single-phase bulk fillings without a separate covering layer, base fill or base. When applied at the bottom of the cavity, the material flows onto all regions like a flowable material to create a bubble-free monoblock restoration that then needs only to be finished and cured. The very impressive physical parameters mean that there is no need to apply a covering layer. The narrow, flexible cannula allows for direct application even in difficult-to-access areas and narrow cavities.



#### Time-saving over 40 %\*

Placing a restoration with	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Material requirements
									Total time*
<b>Flowable and 2mm composite</b>	Bonding	Coating the bottom layer with flowable material	Light-curing	Applying the first composite layer	Light-curing	Applying the second composite layer	Sculpting	Light-curing	min. 2 caps
	35 sec.	20 sec.	20 sec.	20 sec.	20 sec.	20 sec.	30 sec.	20 sec.	appr. 3:05 min.
<b>Bulk-flowable and bulk-fill material</b>	Bonding	Applying bulk-flowable	Light-curing	Applying sculptable bulk-fill material	Sculpting	Light-curing			min. 2 caps
	35 sec.	20 sec.	20 sec.	20 sec.	30 sec.	20 sec.			appr. 2:25 min.
<b>VisCalor bulk</b>	<b>Bonding</b>	<b>Applying VisCalor bulk</b>	<b>Sculpting</b>	<b>Light-curing</b>					min. 1 caps
	<b>35 sec.</b>	<b>20 sec.</b>	<b>30 sec.</b>	<b>10 - 20 sec.</b>					appr. 1:35 - 1:45 min.

\* For restorations with a depth of 4mm or less - Sample calculation for minimally invasive cavity of 4 mm depth

#### Clinical case



Initial situation



Minimally invasive prepared cavity at tooth 14



Filling the cavity with VisCalor bulk



Restoration two months after filling

## VisCalor® bulk

### THERMOVISCOS BULK FILL COMPOSITE



Optimal  
use with  
VisCalor Dispenser

#### Indications

- Class I and II posterior restorations
- Base in class I and II cavities
- Class V restorations
- Locking, splinting of loose teeth
- Repairing veneers, enamel defects and temporary C&B-materials
- Extended fissure sealing
- Restoration of deciduous teeth
- Core build-up

#### Advantages

- **Unique and innovative** – Warming of the material makes it flowable for the application and then sculptable immediately afterwards (thermo-viscous-technology)
- **High-quality application** – Optimal flowing to margins and undercut regions
- **Time-saving** – No covering layers required
- **Simple handling** – 4 mm bulk fill and bubble-free application with slender cannula



#### Four shades – The choice is yours

##### Universal shade

Optimal adaptation to the surrounding tooth substance, with a curing time of just 10 seconds (at 1.000 mW/cm<sup>2</sup>).

**U**



##### Individual tooth shades

Three additional shades are available for aesthetically pleasing restorations. Curing time: 20 seconds (at 1.000 mW/cm<sup>2</sup>).

**A1**

**A2**

**A3**

#### Presentation

- |          |                            |
|----------|----------------------------|
| REF 6065 | Caps 16 × 0,25 g universal |
| REF 6066 | Caps 16 × 0,25 g A1        |
| REF 6067 | Caps 16 × 0,25 g A2        |
| REF 6068 | Caps 16 × 0,25 g A3        |

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