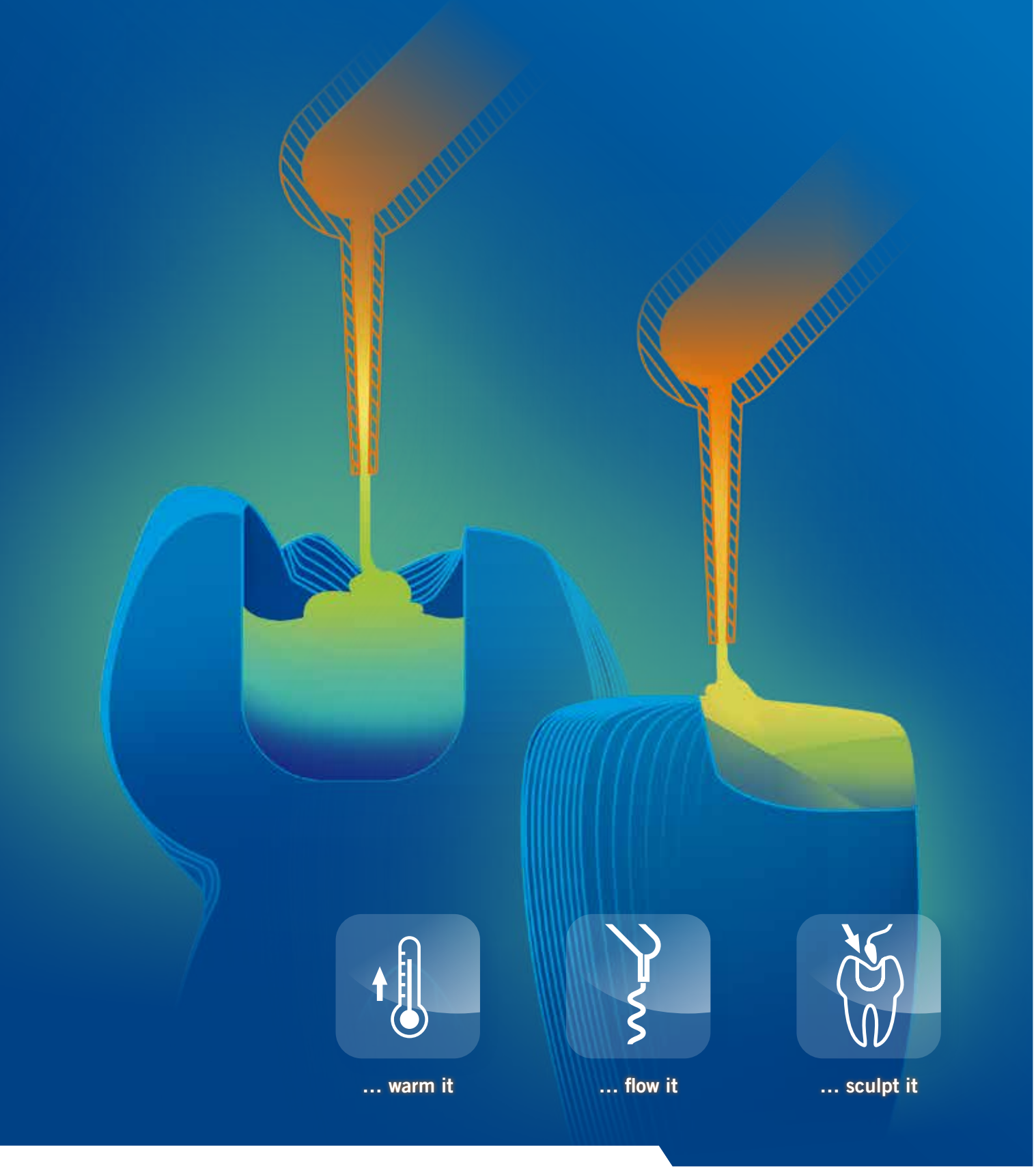


*Vis*Calor / *Vis*Calor bulk

THERMOVISCOUS UNIVERSAL AND BULK-FILL COMPOSITE

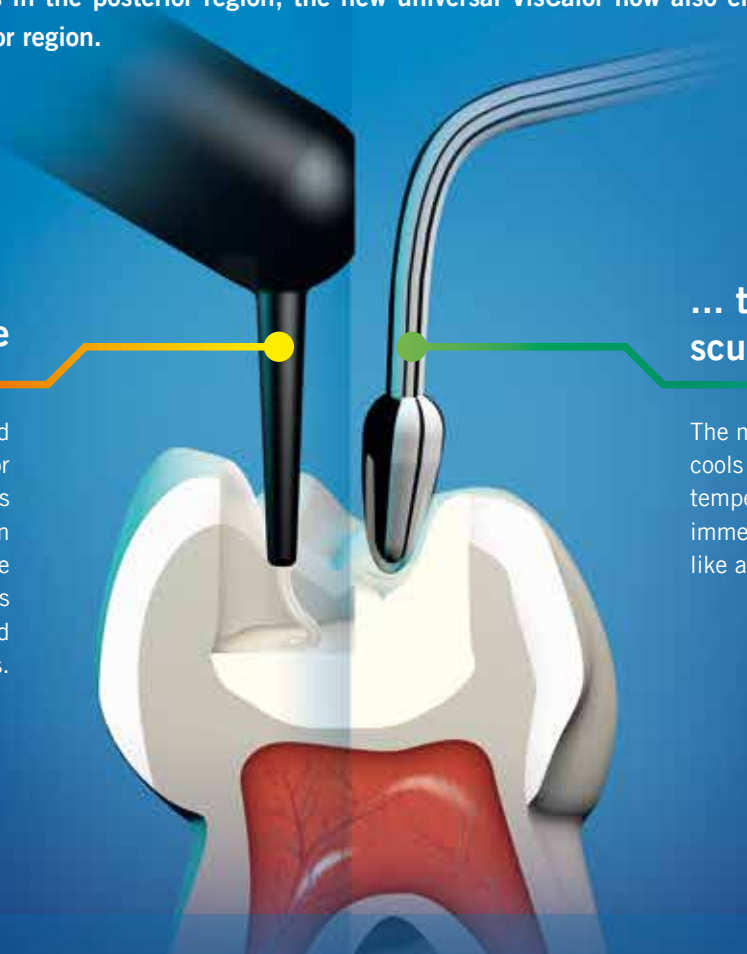
VOCO
THE DENTALISTS

VisCalor® / 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. While VisCalor bulk is a suitable material for narrow and deep cavities in the posterior region, the new universal VisCalor now also enables high aesthetic restorations in the anterior region.



First flowable

As VisCalor is warmed using a preheating device for composites, it becomes less viscous, allowing for application similar to that for a flowable material. The material flows optimally on cavity walls and undercut regions.

… then sculptable

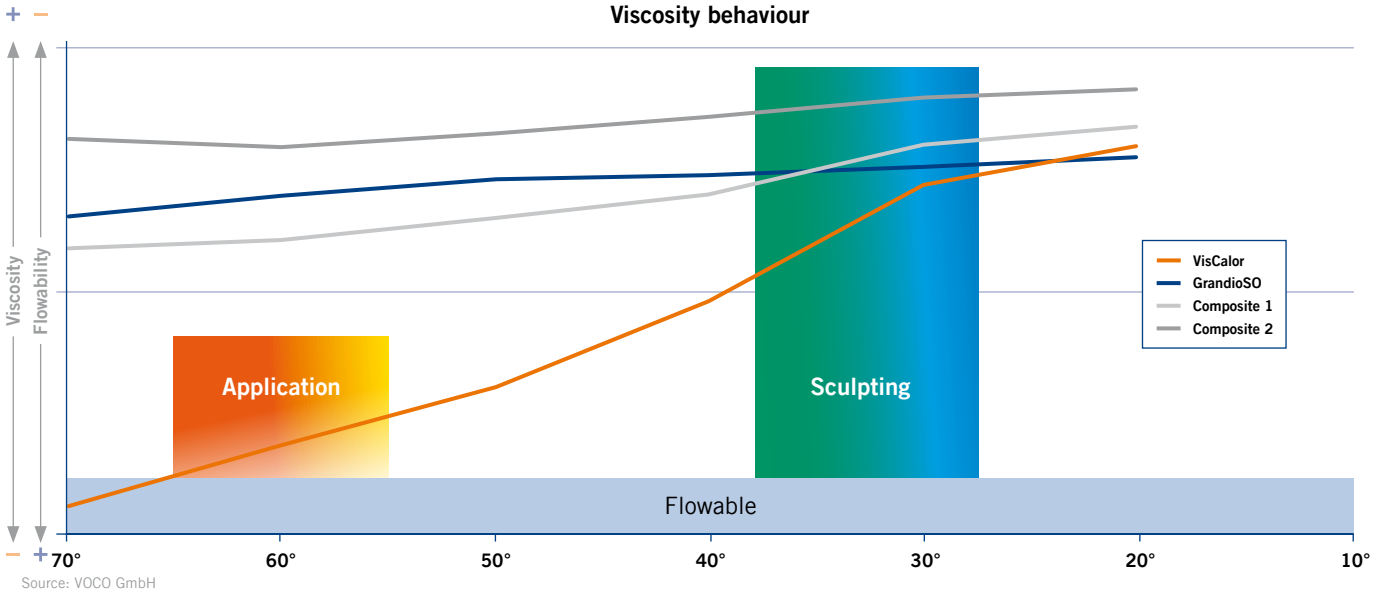
The material quickly cools back down to body temperature and can immediately be sculpted just like a packable composite.

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 efficient restorations without multiple working steps for base filling or covering layers.

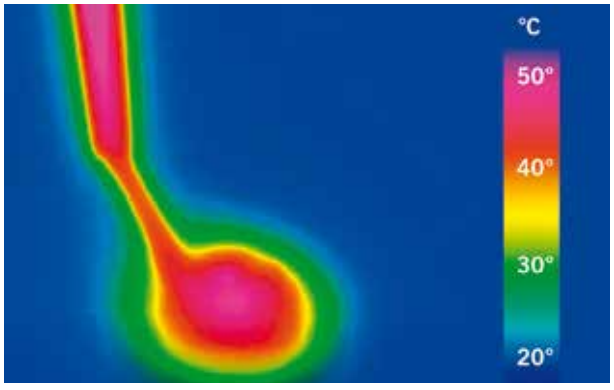
UNIQUE VISCOSITY BEHAVIOUR

VisCalor 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 in the new VisCalor Dispenser, but that is sculptable like a packable composite at body temperature.



Source: VOCO GmbH

The graph shows the viscosity behaviour of various materials. Only VisCalor has a similar viscosity to a flowable material when warmed up to 68 °C. When the material is cooled down to body temperature, it becomes significantly more viscous and can be easily sculpted. During the application phase, VisCalor stands out thanks to its optimal consistency that conventional composites cannot achieve when warmed up.

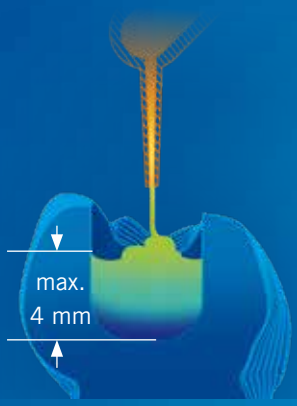


Source: Prof. Braun, Universität Marburg

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

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

*Vis*Calor bulk



Simple, fast and **high quality**

- Class I, II and V restorations

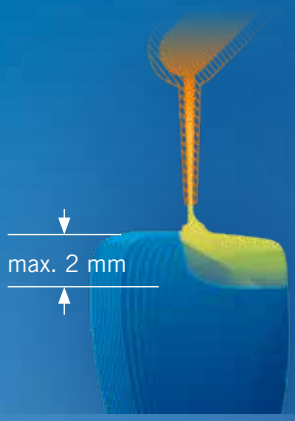
class I, II, V restorations | 4 mm bulk fill | 4 shades

*Vis*Calor bulk and *Vis*Calor – the ideal addition

Common indications

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

*Vis*Calor



Universal, aesthetic and **high quality**

- Class I to V restorations
- Reconstruction of anterior teeth damaged by trauma
- Veneering discoloured anterior teeth
- Corrections in shape and shade to improve aesthetics
- Composite inlays

class I–V restorations | 2 mm increments | 11 shades

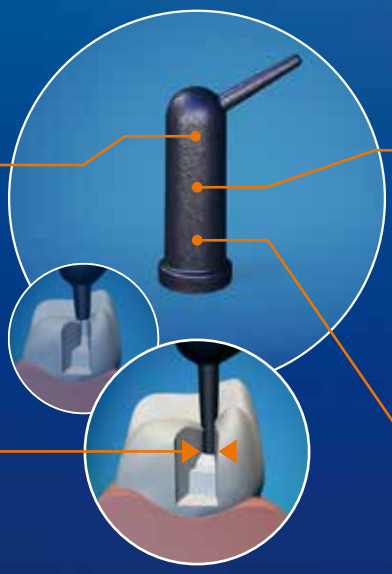
*Vis*Calor bulk and *Vis*Calor:

Unique and innovative

By pre-warming, the material is flowable during application and can be sculpted immediately afterwards (thermo-viscous-technology)

Excellent handling

Bubble-free application with a narrow and long cannula



High quality and durable

- Optimal flowing to margins and undercut aeras
- Excellent physical properties

Efficient

- Combines 2 viscosities in one material ▸ no material change and less stock keeping
- No overlaying necessary

VisCalor® bulk:

Composite with variable viscosity for bulk-fill restoration in one step

Fig. 01: Carious lesion on tooth 25

Fig. 02: Cleaning of the cavity

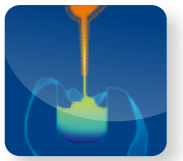
Fig. 03: Bonding with Futurabond M+ (VOCO) for 20 sec

Fig. 04: Restoration of the margin with GrandioSO (VOCO)

Fig. 05: Bulk filling in one step only

Fig. 06: Finish after sculpting and polishing

Source: Dr. Gianfranco Roselli, DDS, Italy



"The viscosity change of the material from flowable to packable during one working step is certainly to be classified as a worldwide innovation. VisCalor bulk is an easy to handle filling material. It is efficient for the dentist as it enables short treatments. With a volume shrinkage of only 1.44 Vol.-% and a shrinkage stress of 4.6 MPa VisCalor bulk shows lower shrinkage values than conventional bulk-fill composites after warming."

– Dr. Gianfranco Roselli, DDS –

VisCalor®:

Extended anterior restoration in the upper jaw with a thermo-viscous universal composite

Fig. 01: View after minimally invasive excavation and preparation

Fig. 02: Applied rubber dam (absolute drainage) after excavation and preparation

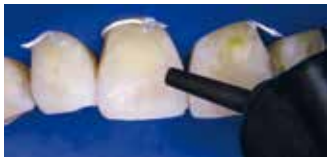


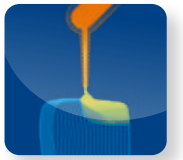
Fig. 03: Application, initial layering of teeth 13 to 11

Fig. 04: Immediately sculpting of the composite after cooling-down

Fig. 05: Final polishing of the teeth and restoration surfaces with CleanJoy (VOCO)

Fig. 06: Final restorations with VisCalor (VOCO)

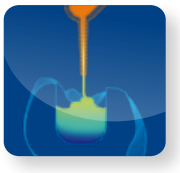
Source: Dr. med. dent. Hanke Faust, Germany



"The new universal VisCalor is highly recommended as it is a user-friendly, efficient and aesthetic therapy at affordable prices. The practice of standard adhesive restorative therapy is still applicable. The user will immediately recognise the added value in the easy applicability of the material through the thermo-viscous-technology in the form of the outstanding application and sculptability."

– Dr. med. dent. Hanke Faust –

VisCalor® bulk



TIME-SAVING AND AESTHETICALLY PLEASING

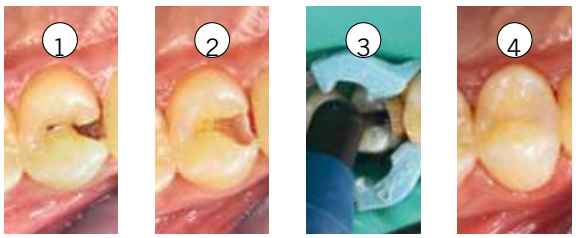
4mm with no covering layers
With VisCalor bulk, you can place single-phase bulk fillings without a separate covering layer, base fill or base. When applied at the bottom of the cavity, the material flows onto all regions like a flowable material to create a bubble-free monoblock restoration that then needs only to be sculpted 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*
Flowable and 2mm composite	Bonding 35 sec.	Coating the bottom layer with flowable material 20 sec.	Light-curing 20 sec.	Applying the first composite layer 20 sec.	Light-curing 20 sec.	Applying the second composite layer 20 sec.	Sculpting 30 sec.	Light-curing 20 sec.	min. **2 caps** appr. 3:05 min.
Bulk-flowable and bulk-fill material	Bonding 35 sec.	Applying bulk-flowable 20 sec.	Light-curing 20 sec.	Applying sculptable bulk-fill material 20 sec.	Sculpting 30 sec.	Light-curing 20 sec.			min. **2 caps** appr. 2:25 min.
VisCalor bulk	**Bonding** **35** sec.	**Applying VisCalor bulk** **20** sec.	**Sculpting** **30** sec.	Light-curing **10 - 20** sec.					min. **1 caps** 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



1) Initial situation ▸ 2) Minimally invasive prepared cavity at tooth 14 ▸ 3) Filling the cavity with VisCalor bulk ▸ 4) Restoration two month after filling

Source: Dr. Walter Denner, Fulda / Germany

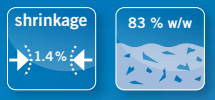
Four shades – the choice is yours

Universal shade: Optimal adaptation to the surrounding tooth substance

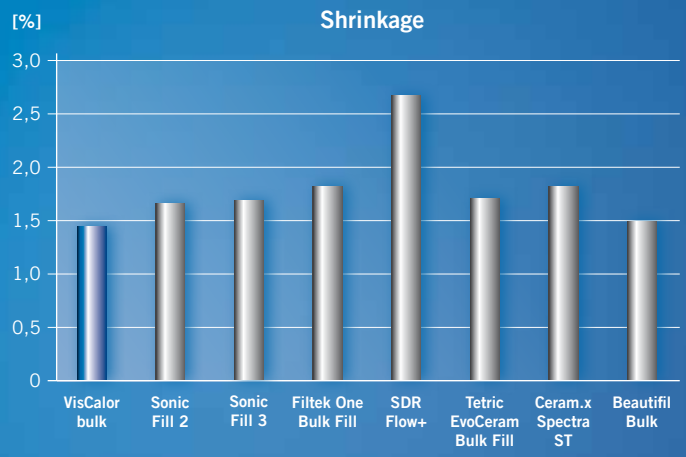
Individual tooth shades:
Three additional shades are available for aesthetically pleasing restorations

*min. 1000 mW/cm²

A STRONG MATERIAL

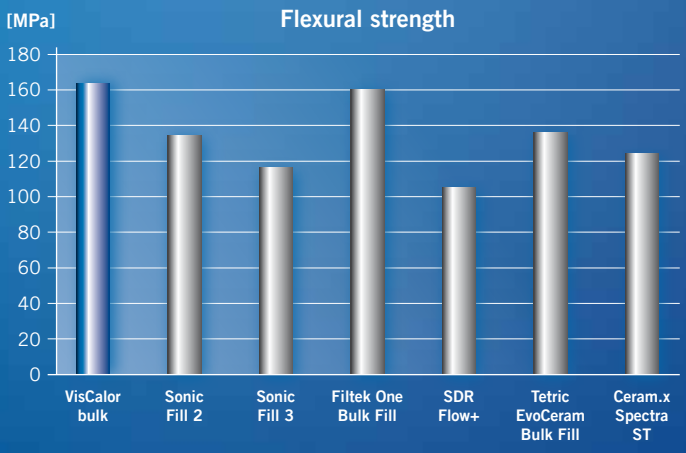


4mm increments: this means a relatively high proportion of the composite surface is in contact with the cavity margin, which turns the focus to the issue of shrinkage. With a volume shrinkage of only 1.44 % by volume and a shrinkage stress of 4.6 MPa, VisCalor bulk is in a class of its own among bulk-fill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



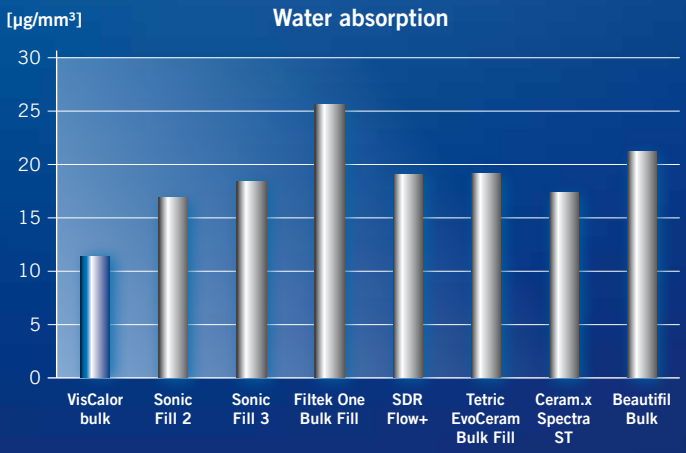
Source: Internal measurement

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.



Source: Internal measurement

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®

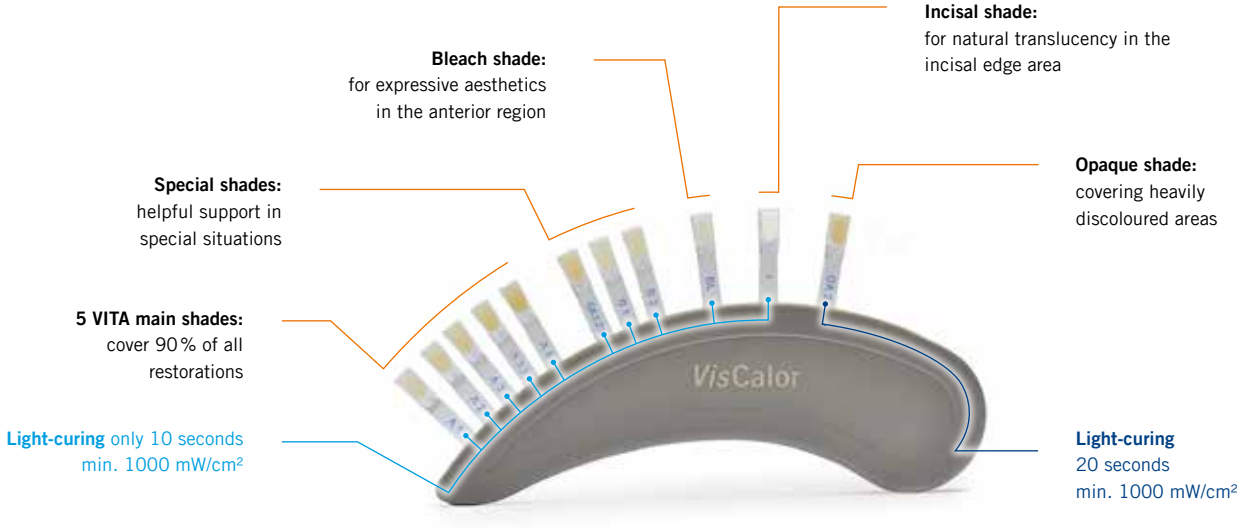
THERMOVISCOUS. UNIVERSAL. AESTHETIC.

VisCalor is the world's first thermoviscous universal composite indicated for all cavity classes. While the bulk-fill version aimes at easy and quick restorations in the posterior region, VisCalor now also enables very aesthetic anterior restorations thanks to the large range of VITA shades.

Excellent and easy handling

Convince yourself of the material consistency, which thanks to the unique thermo-viscous-technology, can be applied like a flowable at the optimal time and is sculptable like a packable composite. The narrow and long cannula also facilitates the handling during application immensely. The quick and easy high-gloss polishing in combination with the high surface hardness make VisCalor a guarantor for durable and aesthetic restorations.

With VisCalor you can also achieve best aesthetic results with one shade only. The opacity and translucency of the material were adjusted so that the restoration cannot be distinguished from the surrounding tooth structure when used in the anterior region. Depending on needs and requirements, you can apply VisCalor in single or multi-layer system.



Clinical case: Multiple anterior restorations with VisCalor

Fig. 01: Initial situation

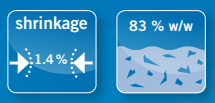
Fig. 02: Application of the flowable material with the narrow cannula

Fig. 03: Immediate sculpting after cooling of the material

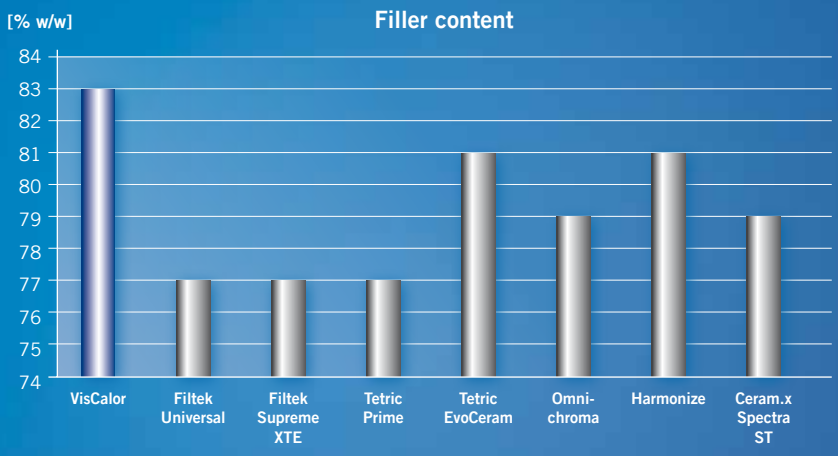
Fig. 04: Final aesthetic restoration

Source: Dr. Walter Denner, Fulda / Germany

A STRONG MATERIAL

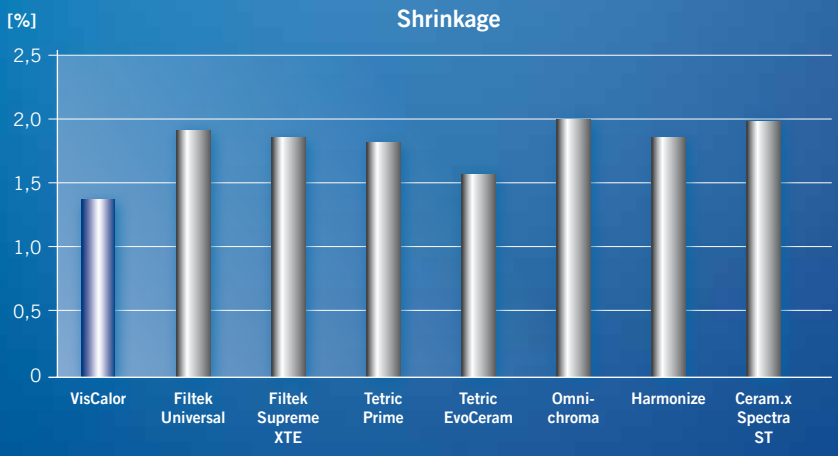


With an enormously high filler content of 83 % w/w, VisCalor offers maximum stability and strength of the restoration. Therefore, this product is unlimitedly suitable for restorations of all classes, including those with chewing loads.



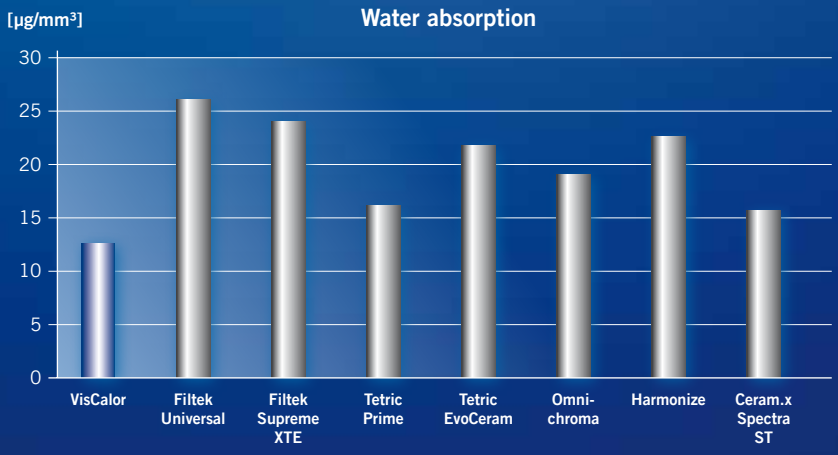
Source: Internal measurement

Especially the low volume shrinkage after light polymerisation of only 1.41 Vol.-% together with a very low shrinkage stress of 4.1 MPa ensures an optimal marginal integrity. This enables a high quality and durable restoration.



Source: Internal measurement

Due to a low water absorption of only 13 µg/mm³, VisCalor has a high colour stability. This makes this innovative universal composite a guarantor for highly aesthetic long-term results.



Source: Internal measurement

VisCalor® Dispenser and Caps Warmer

Depending on the indication and the handling preference you have 2 possibilities to warm up the VisCalor caps:

Optimal for working with *Vis*Calor bulk

		Pre-warming of the device	Caps warming-time	Processing time	Caps to be warmed simultaneously	Temperature
VisCalor® Dispenser	**Setting 1** ▶ ***Vis*Calor bulk!**	—	30 sec.	2 min. 30 sec.	1	65 °C
	Setting 2 VOCO-Composite	—	70 sec.	1 min. 50 sec.		65 °C
Caps Warmer		15–20 min. (one-time)	3 min.	20 sec.	4	68 °C

Optimal for working with *Vis*Calor

Choice of 3 temperature seetings – depending on the clinical situation and the required consistency:

Operating button	Indicator Light (left)	Temperature Setting
Press once	Green	37 °C (98 °F)
Press twice	Orange	54 °C (130 °F)
Press three times	Red	68 °C (155 °F) ▶ ***Vis*Calor!**

VisCalor® Dispenser

Preheating dispenser for composite caps

With the VisCalor Dispenser, composite capsules can not only be warmed up, but they can also be applied immediately afterwards without the need to change devices, and their temperature can be maintained for a certain period of time. The composite is warmed up very quickly using near-infrared technology.

The VisCalor dispenser is the perfect device to use in combination with VisCalor bulk. This nano-hybrid composite has been specially developed for warming up, and the dispenser application gives the material a lower viscosity, allowing it to flow optimally on margins and undercut regions. This also prevents air bubbles and minimises the risk of marginal gaps.

- Effective handling – rapid warming and immediate application in one device
- Homogeneous warming thanks to near-infrared technology
- Two programmes (VisCalor bulk and additional VOCO composites)
- Handy design and proven shape for filling hard to reach areas
- Short caps warming of only 30 sec. and long processing time of 2:30 min.

Caps Warmer

Preheating device for composite caps

The VOCO Caps Warmer allows a short-term warming of up to 4 caps at the same time, which makes the device ideal for working with multiple shades. Depending on the clinical situation and the desired consistency, the Caps Warmer offers you 3 temperature levels. VisCalor must be warmed up at the highest level of 68 °C (level 3) to get the appropriate viscosity. The specially designed top part ensures homogeneous warming.

The VOCO Caps Warmer maintains the optimal temperature throughout the day and enables that the VisCalor caps are warmed up within 3 minutes. The capsule remains at the desired temperature for 20 seconds after removal from the Caps Warmer. During this time, you can process / apply the material. Immediately after the material cooled down you can sculpt it into the desired shape and polymerise it.

- The specially designed tray ensures a homogenous warming
- Increasing flowability and adjusting the handling properties of the composites
- **Allows a warming of 4 caps at the same time:**
  - Advantage when several/big cavities have to be filled
  - Ideal for working with several shades (e.g. in the anterior region)

VisCalor bulk

Thermoviscous bulk-fill composite

REF 6062 Set VisCalor Dispenser Caps, 80 × 0.25 g (16 × universal, 16 × A1, 16 × A2, 32 × A3), VisCalor Dispenser

REF 6063 Set Caps Warmer, Caps 80 × 0.25 g (16 × universal, 16 × A1, 16 × A2, 32 × A3) Caps Warmer

	universal	A1	A2	A3
Caps 16 × 0.25 g	6065	6066	6067	6068

VisCalor

Thermoviscous universal composite

REF 6106 VisCalor – Set VisCalor Dispenser Caps, 80 × 0.25 g (16 × A1, 16 × A2, 32 × A3, 16 × A3.5), shade guide, VisCalor Dispenser

REF 6107 VisCalor – Set Caps Warmer, Caps 80 × 0.25 g (16 × A1, 16 × A2, 32 × A3, 16 × A3.5), shade guide, Caps Warmer

REF 6108 VisCalor – Set + Bond, Caps 80 × 0.25 g (16 × A2, 16 × A3, 16 × A3.5, 16 × OA2, 16 × incisal), shade guide, Futurabond U *SingleDose* 20 pcs.

REF 6110 VisCalor – Shade guide

	A1	A2	A3	GA3.25	A3.5	A4	B1	B2	incisal	OA2	BL
Caps 16 × 0.25 g	6113	6114	6115	6116	6117	6118	6119	6120	6121	6122	6123

VisCalor bulk **Dispenser**

Preheating dispenser for composite caps

REF 9143 VisCalor Dispenser – Preheating device

REF 9144 Changeable tops 2 pcs.

REF 9145 Protective foils 100 pcs.

Caps Warmer

Preheating device for composite caps

REF 9001 Caps Warmer-Preheating device

VOCO GmbH
Anton-Flettner-Straße 1-3
27472 Cuxhaven
Germany

Freecall: 00 800 44 444 555
Fax: +49 (0) 4721-719-140

info@voco.com
www.voco.dental

Available from: