



Structur CAD

PROCESSING INSTRUCTIONS

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1. Introduction

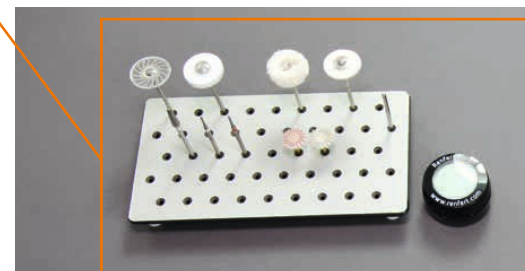
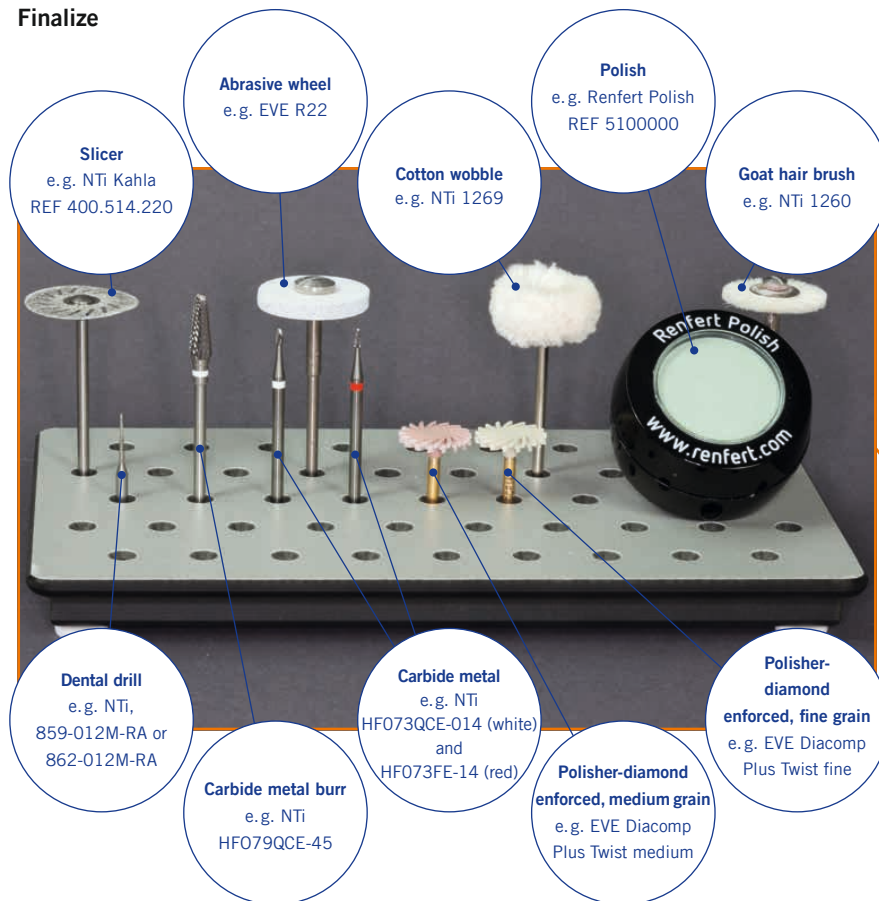
Looking for an aesthetic long-term temporary which delivers on its promises and can also be created quickly and easily? We offer the solution with Structur CAD, the composite for CAD / CAM-produced temporary restorations. Structur CAD is a filled composite whose fillers ensure a high quality and thus a safe and reliable wearing period, in particular for long-term temporaries. As such, Structur CAD represents the latest generation of temporary restorations. This material class also offers a whole range of advantages for processing: Structur CAD has an outstanding edge stability after milling, in addition to which polishing is easy and takes next to no time. Its fluorescence is similar to that of natural teeth and contributes to the patient's feeling of wellbeing when wearing the temporary. CAD / CAM-produced temporary restorations are precise, easy to reproduce and can be customised in exactly the same way as permanent restorations. And to round off the working process, luting can also be done to suit your requirements exactly – either with temporary luting cement or using an adhesive for longer wearing periods. Structur CAD is available in shades A1, A2 and A3 as a size 40L block and as a disc with a thickness of 20 mm (diameter 98 mm).



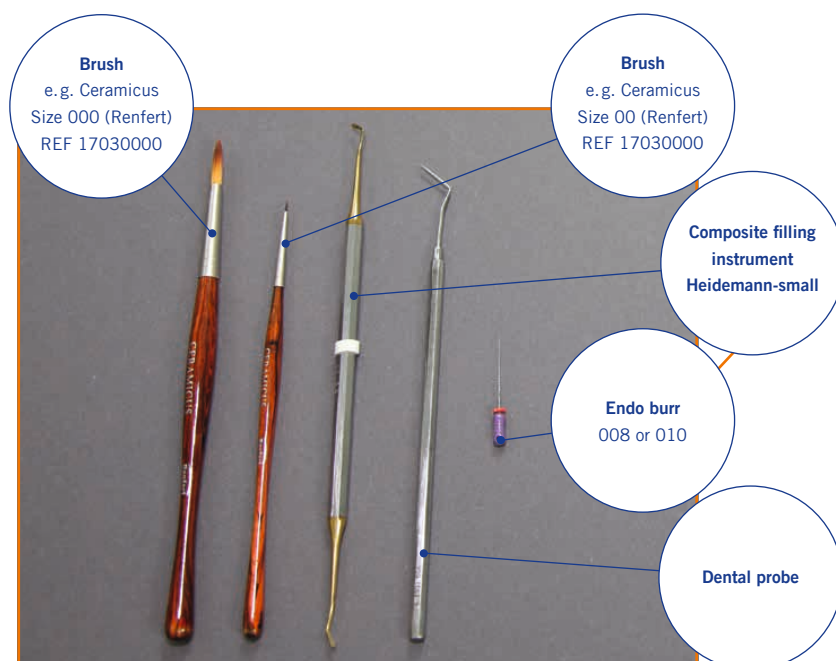
2. Step-by-step instruction Structur CAD

2.1. Overview Accessories

Finalize



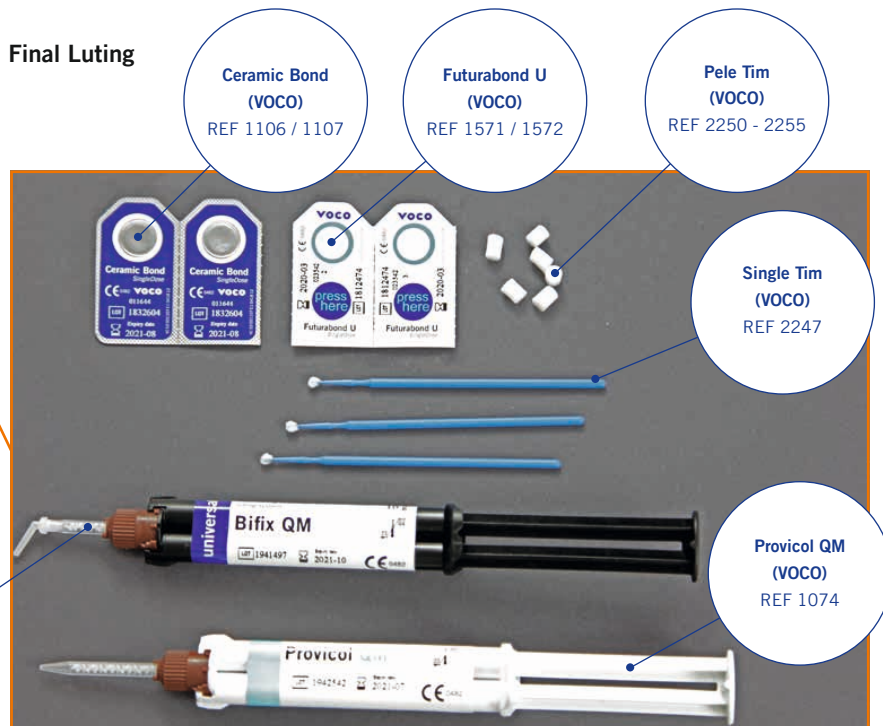
Individualization – Instruments



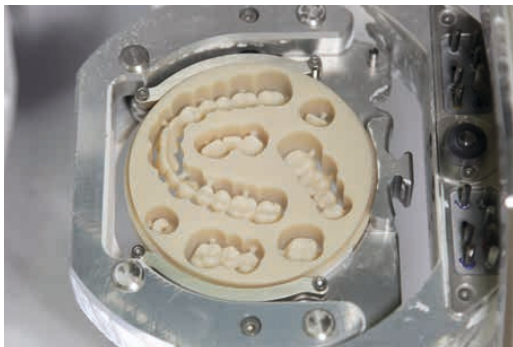
Individualization – Composite



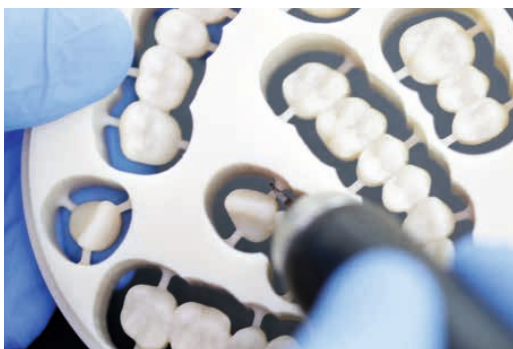
Final Luting



2.2. Anterior bridge: Processing and luting



CAM manufactured restoration.



Separating the restoration with a slicer or another suited carbide metal burr from the pin.



Grinding / smoothing with a fine toothed carbide metal grinder. Watch for possible contact points.



Tip

Also possible with fine diamond grinding tools

If the restoration is manufactured chairside in the dental clinic, now is the time for a try-in on the patient. Clean and disinfect the restoration with alcohol before try-in.



Conditioning of the luting face with airblasting (Al_2O_3 , 50-100 μm , air pressure 1,5 - 2 bar).

Carefully removing of Al_2O_3 residue in ultrasonic cleaner with Ethanol (70 %) or steam cleaner. Dry the restoration with airstream.

Chairside



Smoothing and pre-polishing with mid to fine grained diamond polishing system.



High-gloss polishing with extra-fine diamond polishing system.

Labside



A goat hair brush together with a diamond polish may be used alternatively.





Finalization with a cotton wobble.



Note

Disinfection of the restoration before try-in and final luting is mandatory.



Provisional luting with e.g. Provicol QM

The material is mixed during application in the cannula and can be placed directly on the prepared contact surfaces.



Note

If the final restoration is subsequently adhesively fixed, a temporary, eugenol-free cement should be used.



The chemical setting time is 4 - 6 minutes.
Remove the excess material 3 - 5 minutes after insertion into the mouth.



Remove Provicol QM excess with foam pellets (e.g. VOCO Pele Tim) or disposable brushes.



Dental floss is recommended for removing excess material from interdental spaces.



High-esthetic result after luting.

Adhesive luting (see instructions for use)

2.3. Anterior bridge: Cut-back-technique

Structur CAD may be individualized quick and easy for high esthetic demands. Veneering composites or e.g. GrandioSO Flow / Heavy Flow in combination with FinalTouch allow a quick and simple light curing individualization of any restoration.




Perform the Cut-back-technique manually with carbide metal grinders or diamond coated burs. Alternatively the Cut-back-technique may be done already during the CAD step.



Note
Watch the given minimal wall thickness (page 18)



The area of the restoration where individualization is desired must be sandblasted (Al_2O_3 , 50-100 μm , air pressure 1,5 - 2 bar) prior to the individualization steps.



Note
Mandatory cleaning (see page 6)



Activate Futurabond U by pressing on the marked area, pierce the blister with a Single Tim and stir carefully.



Apply the adhesive homogeneously on to the prepared tooth surfaces and rub it in for 20 seconds.



Note
Wet the whole surface of the restoration.



Dry off the adhesive layer with air for at least 5 seconds in order to remove any solvents.



Light cure the adhesive layer for 10 seconds.



Tip

Application also possible with other suitable instruments



Use GrandioSO Flow or Heavy Flow for incisal individualization.

Find more composites at the overview on page 5.



For incisal edges use transparent composites e.g. GrandioSO Incisal or Amaris HT.



To achieve mamelon-like structures very fine brushes may be helpful.

White spots can be simulated with FinalTouch. FinalTouch must always be covered with a (transparent) final composite layer.



Fixation of different Flow-Composites respectively of different Flow layers by light curing in between.



Note
Clean brushes used for FinalTouch with ethanol directly after use.

➔ More steps see case 1 “anterior bridge“, step 5 - 11



Anterior bridge individualized with GrandioSO and polished to high gloss finish.

2.4. Fissure characterisation posterior bridge

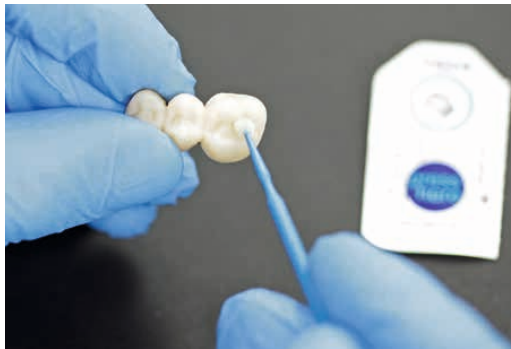


Finalize the fissures with a carbide metal burr or diamond burr. Clean the restoration afterwards.



Note

Wet the whole surface of the restoration.



Apply the adhesive over the entire surface after cleaning and rub it in for 20 seconds.



Dry off the adhesive layer with air for at least 5 seconds in order to remove any solvents.



Light cure the adhesive layer for 10 seconds.



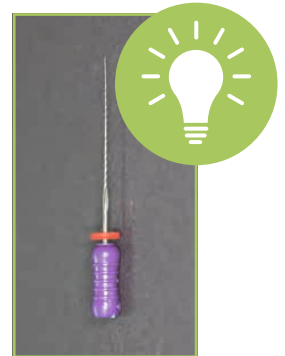
Effect composite colours as FinalTouch may be used as they are just out of the syringe or mixed with other colours, especially with „white“ for the individualization of fissures, incisal edges and tooth necks. Colours should always be used very economical!



Note
Ambient light



Apply FinalTouch with a fine ceramic brush. Alternatively one may use fine endodontic instruments.



Light-polymerization of the applied colour (20 seconds).



Overlaying subsequently with a transparent flow composite e.g. Amaris HT.

Final polymerization (page 12) and polishing (page 7 and 8).



Grade of individualization



3. Questions and answers

Which CAD / CAM systems can process Structur CAD?

Please find the list of suitable systems on page 20 and www.voco.dental. Please ask for not listed devices your CAD / CAM system provider.

Which tools have to be used for milling Structur CAD?

Structur CAD has to be machining with diamond coated tools.

Is it possible to mill Structur CAD without water?

Structur CAD can be milled dry or wet depending on the milling machine.

How must restorations made from Structur CAD finally luted?

There are two possibilities here:

Structur CAD can be luted with a temporary cement (e.g. Provicol QM).

Note: If the final restoration is subsequently cemented adhesively, a temporary eugenolfree cement has to be used.

For a wearing period of > 30 days, the restoration can alternatively be luted with an adhesive composite-based luting material (e.g. Bifix QM). The respective instructions for use must be observed.

Note: Adhesive luting may result in a more time-consuming removal of the temporary restoration.

Must the restorations specially pretreated before luting?

The restorations must be clean and greaseless. The luting face must be sandblasted (Al_2O_3 , 50-100 μm , air pressure 1,5 - 2 bar). Afterwards Al_2O_3 residue must be removed carefully and the restoration has to be washed with ethanol / isopropanol again. Dry the restoration carefully.

How to polish restorations made from Structur CAD?

The polishing can be done extraorally as well a intraorally. For best results a two-step polishing system for highly-filled composites is recommended.

Can Structur CAD be repaired or individualized?

Yes, and intra- and extraorally without any problems. To do this, roughen the restoration surface by grinding or blasting (Al_2O_3 50 - 100 μm , 1 - 2 bar). Carefully remove abrasive residues/dust residues using an ultrasonic bath (ethanol 70 %) or steam cleaner. Dry the restoration then with air. Apply a suitable adhesive system (e.g. Futurabond U) according to the instructions for use. With e.g. GrandioSO, Flow or Heavy Flow in combination with FinalTouch, you can individualize the restorations with light-curing quick and easy. The respective instructions for use of the manufacturers must be observed.

What is the advantage of creating a CAD / CAM milled temporary compared to the immediate creation of the final restoration?

In some cases it is not even possible to create a definitive restoration immediately, e.g. if the work is made of ceramic. This takes several days. During this time the patient should get an idea of his definitive new restoration. In the case of CAD / CAM supported creation of restorations, the laboratory already has digital impressions and the newly designed work. These can be used quickly and easily for a temporary restoration with Structur CAD. However, there are other reasons why a long-term temporary restoration is necessary:

- Periodontitis treatments
- Wound healing/healing times after operations
- Endodontic treatments
- Bleaching
- Functional measures
- Economic reasons

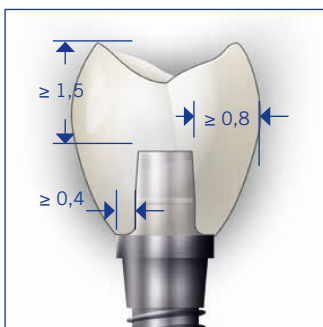
4. Indications

- Temporary bridges spanning up to two pontics
- Temporary abutment crowns
- Temporary crowns

Wall thickness

	Single crown	Abutment crown	Anterior bridge	Posterior bridge
Cervical wall thickness	0,6-0,8 mm	-	0,8 mm	1,0 mm
Occlusal wall thickness	1,2-1,5 mm	1,5 mm	1,2-1,5 mm	1,2-1,5 mm
Circular wall thickness	-	0,8 mm	-	-
Shoulder with Ti base	-	0,4 mm	-	-
Connector crosssection 1 pontic	-	-	10-12 mm ²	12-15 mm ²
Connector crosssection 2 pontics	-	-	12 mm ²	16-20 mm ²

Abutment



5. Clinical cases

Clinical case 1



Unsatisfactory initial situation



Initial situation – close-up



CAD / CAM bridge on the model



Structur CAD after insertion

Source: Dr. Felipe Araujo, Brazil

Clinical case 2



Initial situation



Initial situation



Temporary crown made of Structur CAD



Try-In





Smile with temporary restoration


Source: Dr. Yassine Harichane, France, Canada
Device: imes-icore 250i


6. Our partners Structur CAD



	vhf camufacture www.vhf.de	
	Structur CAD blocs	Structur CAD disc
Device model	Impression S1 / S2, K4 edition, K5, K5+, R5, Z4, N4	Impression S1 / S2, K4 edition, K5, K5+, R5
Modus	wet + dry	wet + dry
Type of processing	milling	grinding + milling
Universal holder	yes	yes
Software	DentalCAM 7	DentalCAM 7

 Human Zirconium Technology	Zirkonzahn www.zirkonzahn.com	
	Structur CAD blocs	Structur CAD disc
Device model	Milling Unit M (M1 - M5)	-
Modus	wet	-
Type of processing	grinding	-
Universal holder	yes	no
Software	Zirkonzahn Nesting	-

 Competence in CNC & DENTAL-Solutions	imes-icore www.imes-icore.de	
	Structur CAD blocs	Structur CAD disc
Device model	CORiTEC 245-650i + One	CORiTEC 245-650i
Modus	wet (category Hybrid Ceramic)	wet + dry (Composite)
Type of processing	grinding	milling
Universal holder	yes	yes
Software	icam V4.7 / V5 smart	icam V4.7 / V5 smart

	Roland DG www.rolandeasyshape.com	
	Structur CAD blocs	Structur CAD disc
Device model	DWX-4, -4W, -51D, -52D, -52DC, -52DCi	DWX-51D, -52D, -52DC, -52DCi
Modus	Composite	Composite
Type of processing	-	-
Universal holder	yes	yes
Software	-	-

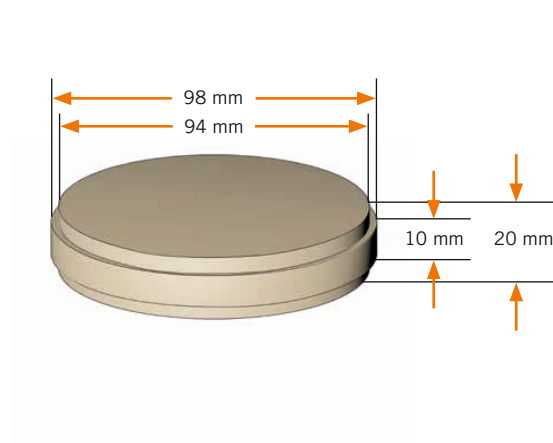
7. Technical data / dimensions

Structur CAD		
3-point-flexural-strength	136 MPa	Analog ISO 0477
Compressive strength	477 MPa	Analog ISO 9917
Modulus of elasticity	4,4 GPa	Analog ISO 10477
Abrasion (200.000 cycles)	85 μm	ACTA-3-Medien
Water absorption	19 $\mu\text{g}/\text{mm}^3$	Analog ISO 4049
Water solubility	< 0,1 $\mu\text{g}/\text{mm}^3$	Analog ISO 4049
Surface hardness	27 HVI	-
Filler content	27 % w/w	DIN 51081

Structur CAD blocs



Structur CAD disc



8. Presentation Structur CAD blocs / Structur CAD disc

Presentation

Blocks

REF 6076 Block 5 × No. 40L A1

REF 6077 Block 5 × No. 40L A2

REF 6078 Block 5 × No. 40L A3

Disc

REF 6071 Disc A1 20 mm

REF 6072 Disc A2 20 mm

REF 6073 Disc A3 20 mm



That figures:

Provicol QM



Bifix QM



GrandioSO Flow



FinalTouch



Futurabond U



9. Notes

Notes

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