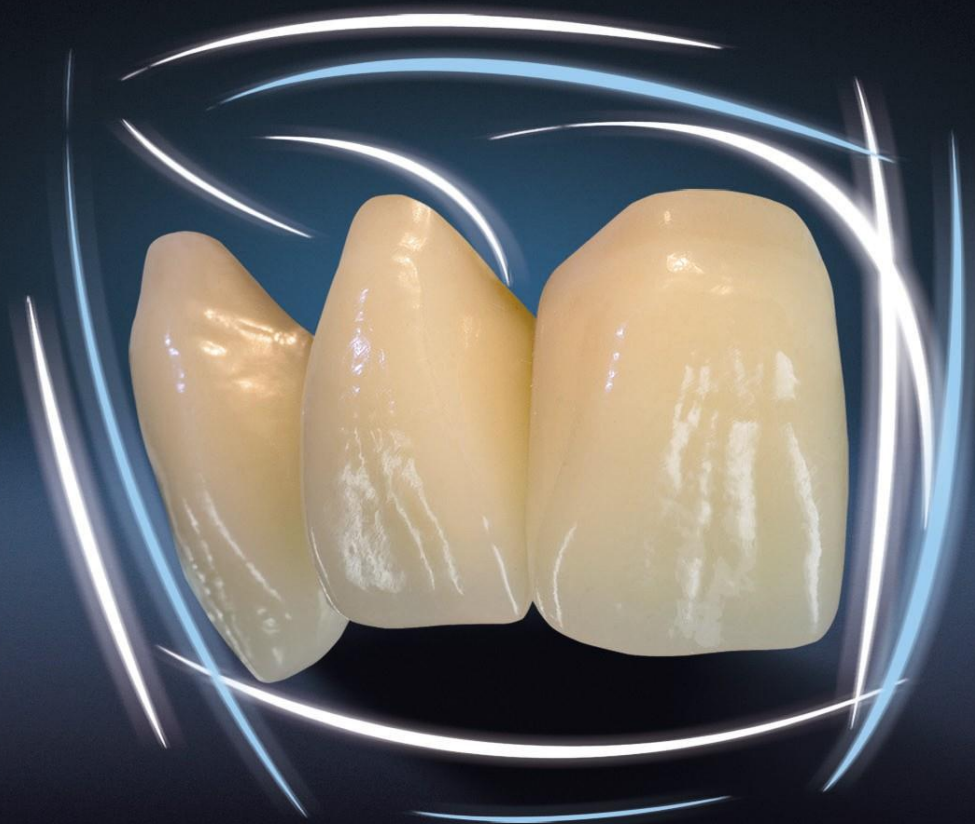


# Instructions NFC<sup>®</sup> Teeth



# Instructions NFC<sup>®</sup> Teeth

## Basic Information

NanoFilledComposite offers natural-looking and aesthetically-pleasing results coupled with exceptional resistance to wear. The composition of the NFC material is noticeably different to that of conventional PMMA-based systems. In order to achieve the best possible results, it is essential that this material be used correctly. The following recommendations are particularly important when restorations are fabricated in combination with implants. The fundamentals of total prosthetics always form the basis for planning and are often emphasized by a variety of experts. There are also various occlusion concepts that can be employed during reconstruction. However, of particular importance in the case of superstructures that are implant-supported is the axial load and unobstructed excursive motion. These requirements can be met using bilateral, balanced occlusion concepts without incisal or canine guidance.

## Indication

The NFC tooth lines have been developed primarily with implant prosthetics in mind, in addition to supporting partial and total prosthetic applications.

Implant prosthetics can essentially be classified into two categories: mucosa-supported prostheses and prostheses that are entirely implant-supported.

The NFC tooth lines have proven their worth in removable prosthetics with 2 retaining elements or with a bar structure on 2 to 4 implants.

In constructions that are entirely implant-supported (where metal ceramics or Zirconium are often deployed), NFC material can only be used to a limited extent. Fractures are more common in restorations of this kind due to the unusually high occlusal or impact force compared to mucosa-supported restorations. These considerable physical challenges that even ceramic restorations have not yet been able to overcome cannot be fully resolved by ready-made composite teeth either.

On the other hand, these constructions in particular are often successfully fabricated with NFC teeth by renowned dental technicians and universities. With this in mind and given the fact that Candulor as a manufacturer does not have any great influence on the individual type of constructions to be fabricated, it is essential that the following criteria are taken into consideration.

- **Backward planning**
- **Intra-oral and extra-oral registration**
- **Balanced occlusion, no exclusively incisal or canine guidance**
- **Uniform contact points of equal strength**
- **Prevention of non-working contacts**
- **Occlusal contouring**
- **Recall 2 to 4 weeks later for re-registration**
- **Follow-up once or twice annually**

# Instructions for Use

## General Information

- Avoid overheating with flames or steam (110°C)
- Avoid impact force

## Grinding

- Only use crosscut carbide milling tools. Do not use high-grade corundum, silicon carbide or diamond abrasives
- Do not allow heat to develop when grinding the Composite NFC teeth (max. 15,000 rpm)
- Maintain a minimum layer thickness of 1.5 mm

## Bonding

- If a veneering composite is used for bonding to the tooth, or if the PMMA layer was ground away in the case of PhysioStar® NFC / Condyloform® II NFC / Bonartic® II NFC, Candulor Composite bonding agent must be used.
- Refer to the Instructions for Use for Composite or NFC teeth

## Occlusion

- Intra-oral and extra-oral registration
- Balanced occlusion, no exclusively incisal or canine guidance
- Uniform, strong contact
- Prevention of contact points on uneven surfaces
- Prevention of non-working contacts
- Occlusal contouring
- Recall 2 to 4 weeks later for re-registration

## Divesting

- Take care when divesting using the hammer. Heavy blows could result in cracks or even fractures in the base of the prosthesis and the teeth.

## Cleaning

- When cleaning with steam it is important that the nozzle stays 2-3 cm away from the tooth.
- Do not place the teeth in a sieve because the strong pressure will bounce the teeth around causing micro cracks.

# Instructions for Use for Candulor NFC<sup>®</sup> Teeth

## 1. Grinding

Roughen the contact surfaces of the PMMA/composite surfaces thoroughly using a cross-cut milling tool or by sanding down using AL<sub>2</sub>O<sub>3</sub> (max. 2 bar, 50-100µm). When using laminates, a layer thickness of 1.5 mm must be maintained in order to obtain the best possible chromatic shade effect and to prevent the teeth from fracturing.

### **IMPORTANT!!**

- Do not allow heat to develop when grinding the Composite NFC teeth (max. 15,000 rpm)
- Maintain a minimum layer thickness of 1.5 mm
- Do not inhale grinding dust.

The difference between PMMA and composite NFC can be easily distinguished by the level of chip formation and hardness in each case. PMMA is softer and results in chipping. Composite is harder and results in a grinding powder.

## 2. Cleaning

Remove any remaining wax thoroughly from the surfaces using a steam cleaner and immerse in a monomer, e.g. Candulor Aesthetic, for 3 minutes (allow to soak in).

### **IMPORTANT!!**

- Do not perform steam cleaning again following immersion in the monomer.
- The same cleaning procedure applies for different surfaces (PMMA and composite NFC).

## 3. Surface Bonding

When bonding PMMA prosthetic acrylics with the existing PMMA tooth surface, immersion in a monomer gives the best possible bonding result.

If a veneering composite is used for bonding to the tooth, or if the PMMA layer was ground away in the case of PhysioStar<sup>®</sup> NFC / Condyliform<sup>®</sup> II NFC / Bonartic<sup>®</sup> II NFC, Candulor Composite bonding agent must be used.

## 4. Using Composite

Apply the Composite directly onto the bonding surface using the syringe and distribute evenly using a single-use brush.

### **IMPORTANT!!**

The layer of Composite must be at least 0.2 mm to max. 0.5 mm thick.

## 5. Composite Polymerization

Polymerization is carried out using dental curing devices (observe the manufacturer specifications).

**Candulor recommends the following devices:**

- Ivoclar "Quick" (60 seconds)
- Ivoclar "Spectramat" (4 minutes)

## 6. Veneering Materials

A dispersion layer (adhesive layer) develops following polymerization. This dispersion layer forms a chemical compound for further processing with composite veneering materials (observe the manufacturer specifications).

**Candulor recommends the following veneering composites:**

- SR Adoro (Ivoclar Vivadent)
- SR Chromasit (Ivoclar Vivadent)

If fabrication is not completed directly after polymerization, the prosthesis must be stored in a dark, dustproof location until required.

## 7. Divesting

Take care when divesting using the hammer. Heavy blows could result in cracks or even fractures in the base of the prosthesis and the teeth.

## 8. Finishing and Polishing

For optimum material removal and for fine surface finishing of the NFC teeth, use Candulor KMG high-gloss polish together with the standard rotating instruments available from dental equipment manufacturers.

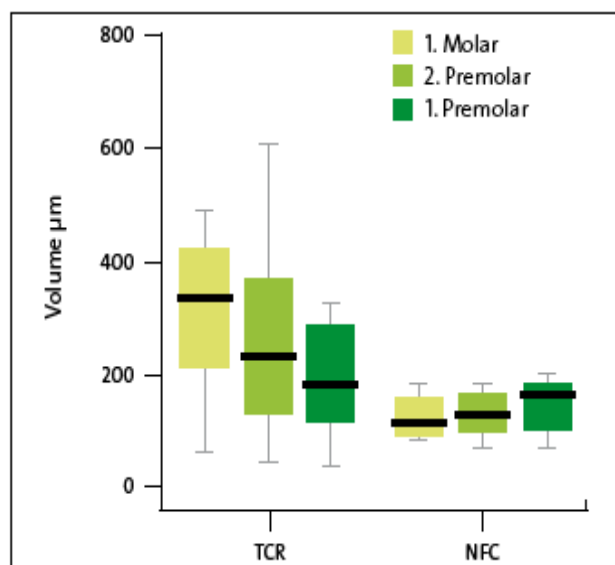
### **IMPORTANT!!**

When working the composite using carbide milling tools, do not exceed a speed of 15,000 rpm. Polishing must be carried out using conventional polishing instruments for composites (observe the manufacturer specifications).

# NanoFilledComposite® Material

Outstanding abrasion properties, which are vastly superior to those of any dentition materials previously used, are the chief advantage of this material. In order to counteract premature wear-and-tear of the teeth as well as the associated loss of vertical dimension, a special abrasion-resistant NFC material was developed. The nanofillers are comprised of highly dispersed silicon that is silanized and that bonds as a result with the UDMA matrix. This combination makes the material particularly suitable for polishing, allowing a long-lasting surface shine to be achieved. The finer the surface is, the lower the friction will be on contact with the antagonist. This in turn reduces wear-and-tear.

Clinical studies have indicated excellent abrasion results for the NFC material (see diagram), with up to 40-50% less abrasion than conventional PMMA materials.



Sources: The clinical studies were conducted at three centres.  
 • Dr. med. dent. Siegwald Heintze; in vitro research at Ivoclar Vivadent  
 • Prof. Dr. Dr. Ingrid Grunert; Universitätsklinik für Zahn-, Mund- und Kieferheilkunde (University Clinic for Oral & Maxillofacial Surgery), Innsbruck  
 • Prof. Dr. Eva Piehslinger; Bernhard-Gottlieb University, Vienna

Physical Properties	Incisal Edge, Dentin	Neck of the Tooth
Vickers hardness	380 N/mm <sup>2</sup>	190 N/mm <sup>2</sup>
Bending strength	120 N/mm <sup>2</sup>	120 N/mm <sup>2</sup>
Flexural modulus	6,000 N/mm <sup>2</sup>	3,000 N/mm <sup>2</sup>
Water absorption	21 µg/mm <sup>3</sup>	26 µg/mm <sup>3</sup>
Solubility in water	0.0 µg/mm <sup>3</sup>	0.1 µg/mm <sup>3</sup>

Composition	Incisal Edge, Dentin	Neck of the Tooth
Dimethylmetacrylate	40-44%	1.0-4.0%
Polymethylmetacrylate	5-6%	95-98%
Highly dispersed silicon dioxide, silanized	36-39%	
Organic prepolymer	19-21%	
Color pigments	0.1-0.3%	0.1-0.4%
Initiators and stabilizers	0.4%	0.5%



**Candolor AG**  
 CH-8602 Wangen/ZH, Pünten 4, Postfach 89  
 Tel. +41 (0)44 805 90 00, Fax +41 (0)44 805 90 90  
[www.candolor.com](http://www.candolor.com), [candolor@candolor.ch](mailto:candolor@candolor.ch)

**Subsidiary: Candolor Dental GmbH**  
 D-78239 Rielasingen-Worblingen, Am Riedergraben 6  
 Tel. +49 (0)7731 79 783-0, Fax +49 (0)7731 28 917  
[www.candolor.de](http://www.candolor.de), [info@candolor.de](mailto:info@candolor.de)

**Subsidiary: Candolor USA Inc.**  
 7462 N. Figueroa St., Suite 104, Los Angeles CA 90041  
 Phone +1 (323) 254-1430, +1 800 436-3827  
 Fax +1 (323) 254-5146  
[www.candolor.us](http://www.candolor.us), [info@candolor.us](mailto:info@candolor.us)