

PhysioStar[®] NFC



New

The 3-dimensional aesthetics of anterior teeth

The new PhysioStar® NFC



“The name Candulor stands for the masterly combination of quality and functionality. With this aspiration in mind, my collaboration with Candulor was not only a technical but above all an aesthetic challenge. With the new anterior tooth line, we didn’t want to create denture teeth but teeth which come as close as possible to the real thing.

The new PhysioStar® NFC radiates this natural impression so convincingly that only the professional can sense the difference. This means it fulfils the essential task of the dental prosthesis:

to imitate nature. And to do so as perfectly as possible.”

Jan Langner
MDT Jan Langner

Individual surface structure for natural aesthetics

Each individual tooth mould has its very own surface structure which in each case has been modelled on natural anteriors. This individuality of the mould, combined with the individuality of the surface, is the striking feature of the PhysioStar® tooth line.

Smooth, high-gloss finish highlights the effect

Special attention was focused on the surface finish. This gives the teeth a natural, smooth gloss which accentuates the special effect of the surface structure.

Age-related structures

Over the course of time, natural teeth show signs of wear. This fact was taken into account in developing the surface of the tooth moulds and age-related structures were included.

Even perikymata, the ridges in the surface of the enamel, have been incorporated in some moulds and underline the overall natural impression.



Specially developed layering for each set of teeth

Up to now, the usual practice in the dental market has been to use 1–3 different layering schemes per tooth line. For the PhysioStar® anterior tooth line, Candulor has developed and patented a special layering pattern for each mould which is typical of the tooth, just as we find in nature. Bright interdental flanks avoid shadows in the areas between the teeth.



Layering of different anteriors.

Bonding with acrylics

To enable bonding with the denture base, half of the tooth body is made of PMMA material (see graphic showing layering scheme).

PhysioStar® NFC is a 4-layer tooth. Two of these layers are made of NanoFilledComposite (NFC), which ensures the particular, abrasion-resistant characteristics. The other two layers are formed from PMMA material, which provides good bonding with the denture base acrylic.

The layering of enamel and dentin has been specially selected to ensure that the chromaticity of the teeth is retained after grinding.



- PMMA neck
- NFC dentin
- PMMA enamel
- NFC enamel

Tooth Moulds

Development of the moulds

PhysioStar® NFC teeth are modelled on nature's example and have been prosthetically optimised. A clear and simple division of the moulds into 4 groups facilitates selection from the 15 upper and 4 lower anterior moulds to suit the patient. The distinction between delicate, universal, vigorous and individual covers the full spectrum of prosthetic requirements.

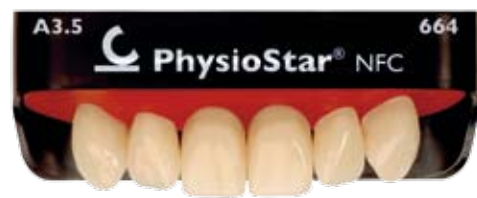
The moulds have been developed to allow ample scope for individual grinding.

DELICATE, Group 55



- Choice of 4 different moulds
- Delicate moulds which do not show any abrasions
- Natural, tapered moulds
- Soft, delicate design of tooth contours
- Youthful incisal contours with characteristic mamelons
- Immaculate surface structure

UNIVERSAL, Group 66



- Choice of 4 different moulds
- The most commonly used mould category offering great flexibility to suit all age groups
- Versatile moulds with square central and tapered lateral incisors.
- Layering to suit the mould on each individual tooth
- Each tooth has the surface structure to match its characteristic

VIGOROUS, Group 77



- Choice of 4 different moulds
- Vigorous moulds with strong characteristics
- Sturdy moulds with authentic abrasions
- Layering in the incisal area to suit the age of the patient
- Angular contours with accentuated surface morphology

INDIVIDUAL, Group 88



- Choice of 3 different moulds
- Tooth moulds which convey a particularly distinctive character through individual set-up
- For all age groups in cases where an unmistakably individual impression is to be created
- Asymmetrical moulds with regard to layering, surface texture and shape

PhysioStar® NFC lower anteriors

Facial muscles slacken during our lifetime and the teeth lose their vertical dimension through abrasion. As a consequence, the lower anteriors become increasingly visible.

When it comes to these aesthetic demands, PhysioStar® NFC lower moulds are quite unique in their natural morphology. They are discreetly abraded in the incisal area, as found with natural teeth.

Four individual lower moulds have been developed to match the upper anterior moulds. These differ not only in shape but also in width and length. The special length of tooth mould 996 offers a major benefit for implant dentures.

Lowers, Group 99



Three-dimensional, fully contoured design

These teeth are modelled on nature's example. The developers succeeded in achieving an optimal, three-dimensional and fully contoured design. These natural, physiological shapes ensure enhanced phonetics and function. An individual and irregular set-up calls for teeth which give three-dimensional expression to the natural contours of the moulds.



Closure of interdental spaces



To enable physiological modelling of the gingiva, the necks of the teeth are wider and morphologically accentuated. The design of the interproximal areas avoids the need for excessive grinding in the event of a change in tooth axis. As a result, the "dark triangles" between the teeth attributable to inadequately contoured moulds become a thing of the past. In addition, the interdental flanks have been given brighter layering.

NFC NanoFilledComposite®

Thanks to the balanced combination of fillers it was possible to achieve material properties comparable to those of modern crown bridge and filling materials. In addition to a high degree of hardness (> HV 350), the composite, which is based on a urethane dimethacrylate matrix, possesses outstanding physical properties which meet the demands of modern prosthetic dentistry.

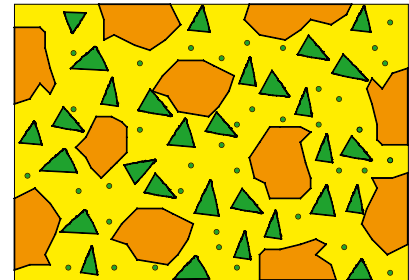
The use of a special organic filler meant that the food colouring and plaque affinity of the NFC material could be reduced to the level of PMMA and porcelain teeth. (Fig. 1)

Both the homogeneity and the brilliance of the NFC material are the result of all constituent materials having a harmonised index of refraction and the grain size distribution of the fillers used which extend from the nanometre to the micrometre range. The sophisticated process of production, silanisation and swelling applied to these homogeneously distributed fillers resulted in material isotropy with a monolith-like structure.

Patients report exceptional wear comfort with the NFC teeth. The material feels pleasant on the tongue, just like natural teeth.

(Fig. 1)

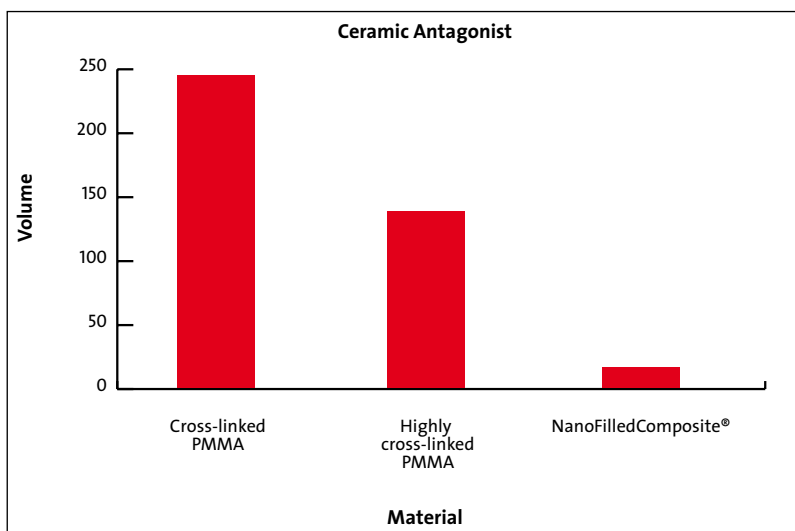
Material description:
Condyloform® II and PhysioStar® NFC



- ▲ = high density silanised SiO₂
- = silanised SiO₂ nanoparticles
- ◊ = highly cross-linked, purely organic fillers swollen by the matrix
- = UDMA matrix

(Fig. 2)

Method: Willytec two-body wear test, ceramic antagonist
Source: Dr. Rosentritt, University of Regensburg (D)



Various in-vitro and in-vivo studies prove that the wear behaviour is significantly better than that of conventional PMMA and highly cross-linked PMMA acrylics which are used to make artificial teeth. (Fig. 2)

Sensational and unique

The presentation packaging designed for this tooth line is unique in the dental market. Instead of the teeth being set in the wax by their lingual surfaces, they are now embedded by the necks in a completely novel and above all natural presentation. The innovative black tooth packaging represents the oral cavity.



The teeth are set up three-dimensionally in the form of a dental arch. In each pack the individual tooth mould is therefore presented as it can look in the patient's mouth. This is a decisive benefit when selecting the right tooth mould to suit the patient. And for the first time, the patient can also form a picture of the PhysioStar® teeth.

For increased protection when transported, the tooth pack can be closed with a transparent lid. This means that the tooth mould and shade are still visible. With the look and feel of an elegant jewellery box, the packaging almost makes you forget that these are artificial teeth!



Characterisation / individualisation

Grinding

Simple grinding in the incisal area of the teeth can give the moulds even more natural abrasion.

Staining

Stains for Resin Teeth can be used to ensure an optimal match with the patient's remaining natural dentition.



Indication

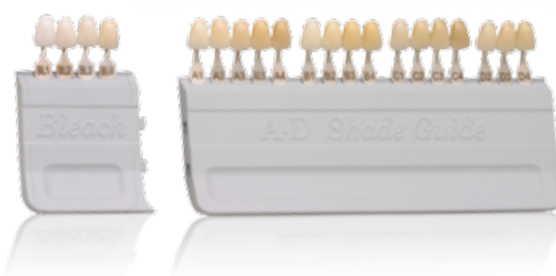
Wherever there is a requirement for aesthetics in anterior teeth, PhysioStar® NFC is the right choice.



Available shades

PhysioStar® NFC upper and lower anteriors are available in the following shades:

- 16 Candolor shades, selection using the Candolor CT Porcelain shade guide
- 16 A-D and 2 bleach shades (BL 2 + BL 4), using the A-D shade guide.



Reconstruction method for missing, damaged and/or abraded teeth using facial analysis software.
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