Candulor
KunstZahnWerk

NFC+

The latest innovation in an outstanding concept

Tanja Suppiger, MDT

www.candulor.com

OUR PASSION AND OUR FOCUS: IMPROVING AN INGENIOUS PRODUCT BIT BY BIT.

The continuing development of modern dentistry is continuously demanding new and improved materials and products from manufacturers.

This is sufficient incentive for us to examine new requirements closely and develop appropriate solutions.

The latest result of our efforts is the finalization of a multi-year project to improve on our NFC (NanoFilledComposite) artificial tooth material and the introduction of the new NFC+.

Tanja Suppiger, MDT

KZW 2011, M.Keppler/M.Weber

KZW 2011, Philipp Köhler

CURRENT REQUIREMENTS FOR MODERN DENTAL MATERIALS:

1. Maximum esthetics in the anterior region
2. Resistance to abrasion from high chewing loads
3. Breaking strength because of reduced tactility with implants
4. Impact resistance to dampen applied forces

Material NanoFilledComposite+

New material properties

New material formula

A unique and special manufacturing process distributes the varied sized fillers, which range from the nanometer range to the micrometer range, homogenously throughout the UDMA matrix. *(see Fig. 1)*

This process results in the outstanding physical material properties, such as abrasion resistance and breaking strength. *(see Fig. 3)*

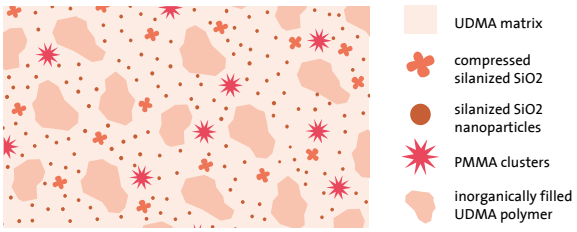

Fig. 1

Physical material properties

The greatest advantage of the new material, NFC+, is the excellent abrasion resistance, which is significantly greater than that of materials previously used for teeth.

The particularly abrasion-resistant NFC+ material was developed to counteract premature wear of teeth and the associated loss of dimension. *(see Fig. 2)*

	Highly cross-linked PMMA	NFC	NFC+
Flexural strength MPa	116	110	119
Bending modulus MPa	3159	6217	4000
Vickers hardness 0.5/30 MPa	190	350	235
Ball indentation hardness MPa	176	303	210
Shear strength MPa	29	23	34

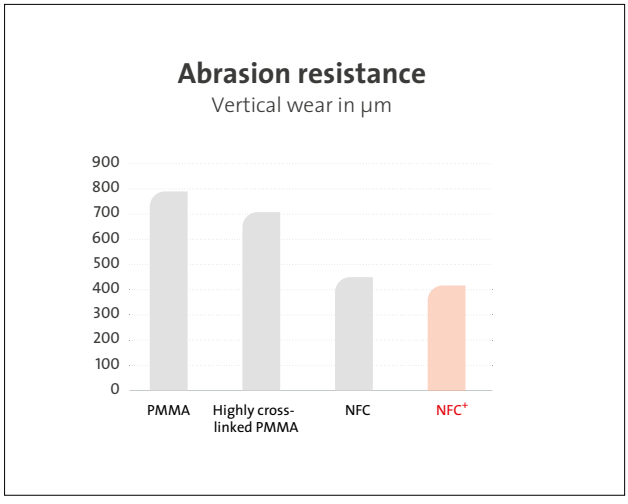

Fig. 2

Source: Dr. Heintze F&E Ivoclar Schaan
Wary Willytec, 100,000 cycles, 3 kg load, 3 mm lateral stroke, without lifting, 1.2 Hz thermocycling (5°C/55°C)

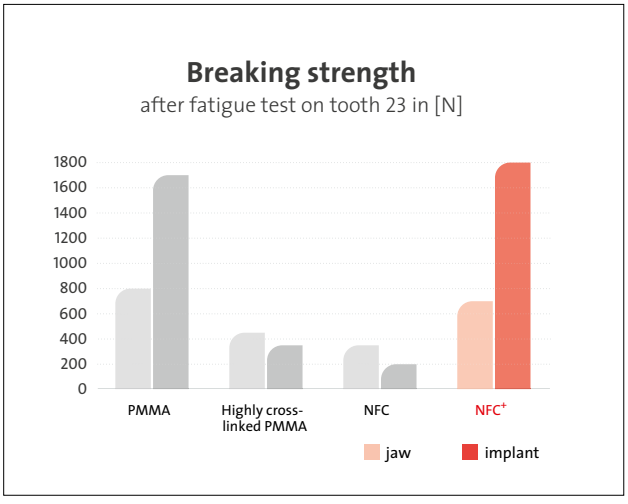

Fig. 3

Source: In vitro chipping tests University of Regensburg
Chewing/chipping simulation on implants fatigue testing over 2 million cycles, load 50 N

PhysioStar® NFC+

Jan Langner, MDT

The anterior tooth molds are the result not only of the skill of the engineer but also their attention to natural tooth anatomy. Their practical use clearly shows that this is a thoroughly proven concept. However, attention has not only been paid to natural shapes but also on the effects of individual surface texture, coating and shading in the mouth. The result is clear: PhysioStar® NFC+ are artificial anterior teeth that are indistinguishable from natural teeth in the mouth.

NATURE WAS THE MODEL FOR THE PHYSIOSTAR® NFC+.

Jan Langner

Coating

Color is the result of light. The special new formula of the NFC+ material and the development of a new technique for creating the four layers has increased the color accuracy of the new NFC+ tooth in the mouth.

Close attention to a natural appearance has also been a feature of the layering. A special layering pattern typical for that tooth has been developed for every single tooth mold in the PhysioStar® NFC+ anterior tooth line.

Maxillary anteriors

The PhysioStar NFC⁺ tooth molds are representations of natural teeth that have been prosthetically optimized. The esthetic adaptation simplifies the fabrication of dental reconstructions. A range of 15 different maxillary molds allows an individual selection for every patient. The classification of the anterior tooth molds into four groups makes selection even easier.

Group 55

DELICATE – Group 55

This tooth mold is noted for its slender and naturally youthful shapes. The soft lines of the tooth contours and the youthful incisal curve emphasizes this juvenile group.

Group 66

UNIVERSAL – Group 66

As the name states, this group is the most versatile for all age groups. This is a wide range of tooth molds with squared centrals and slender posterior incisors.

Group 77

VIGOROUS – Group 77

These vigorous molds with squared contours are notable for their strong characteristics. The effect of these molds is emphasized by the authentic abrasions at the incisal margins.

Group 88

INDIVIDUAL – Group 88

This group includes natural and asymmetrical molds. These molds are suitable for all age groups and the nested dentition gives them an unmistakable character.

Mandibular anteriors

Group 99

Mandibular lower anteriors become more visible with increasing age. For this reason, Candulor has placed great emphasis on the development of these five mandibular anteriors. PhysioStar® NFC⁺ lower anteriors are esthetically unique with their natural morphology.

NEW:
Larger mold
998

Bonartic® II NFC+

Antonio Ferilli, MDT
Product Manager Candulor AG

The regularities of natural dentition must be applied equally to the fabrication of dentures. In the development of the Bonartic® II NFC+ the proven functionality has been adapted to meet modern esthetic requirements.

The Bonartic® II NFC+ combines the physiological laws of nature with esthetic-morphological demands to form a perfect tooth.

OCCLUSION CONCEPT:
Physiological setup

- **Tooth to two-tooth relationship**
- **ABC contacts**
  Work side/balance side/centric
- **Condyle-path-related guidance**
  protrusion 30°, laterotrusion 20°

Function

The occlusion morphology of the lower posteriors is related to the condylar path, so that the cusp angle is 30° in protrusion and 20° in laterotrusion. The tilt of the occlusal plane (Spee, Wilson) can be individually and reliably shaped with the Bonartic® II NFC+. It is the most important stabilization component of every prosthetic restoration.

The pyramid-shaped cusps are positioned in rows to enable an optimum shearing and crushing action. Fine rounding of the pyramid edges imitates natural abrasion.

Tooth to two-tooth relationship

Condyloform® II NFC+

Prof. Dr. med. dent Sandro Palla

The Condyloform® tooth, developed by Prof. Dr. A. Gerber more than 50 years ago, is still widely used in clinical practice. After such a long time, a new design was essential, to keep up with advances in dentistry and meet the needs of the patient. I considered it important to improve the tooth functionally and cosmetically while retaining the original design principles of the mortar pestle principle and the lingualized occlusion.

The improvements simplify setup and make it possible to fabricate dentures that give the impression of natural dentition even in the posterior region.

OCCLUSION CONCEPT:

Prof. Dr. A. Gerber setup

- **Tooth to tooth relationship**
- **Prof. Dr. A. Gerber‘ condylar theory**
- **Lingualized occlusion**
- **Joint-related guidance**
- **Autonomous chewing stability**

Function

Prof. Dr. A. Gerber defined the functional relationship between jaw-joint shapes and tooth molds and developed the Condyloform® tooth.

The Condyloform® II NFC+ offers an anatomically optimized occlusion design with age-appropriate morphological and natural chewing surfaces. The mortar pestle principle, defined by Prof. Dr. A. Gerber and in use for many years, has also been integrated into the chewing surfaces. This ensures autonomous chewing stability, because the palatal cusps of the maxillary teeth contact the opposing central fossa of the mandibular tooth.

Tooth to tooth relationship

NFC⁺ Composite Shade Guide

NFC⁺ tooth lines are available in two shade systems. Two shade guides are available for you to selected the right shade for your patients:

Select from

- 16 A – D shades (incl. 2 Bleach shades, BL2 and BL4)
- 12 Candulor shades: J0, J1, J2, J3, M1, M2, M3, M4, M5, S1, S2, S3

The shade guide teeth are made of the original NFC⁺ material to ensure the closest color match.

NFC⁺ Composite shade guides for A – D shades and Candulor shades are used for selecting the shades of:

- PhysioStar® NFC⁺ anterior teeth
- Condyloform® II NFC⁺ posterior teeth
- Bonartic® II NFC⁺ posterior teeth

Living tooth mold chart for NFC⁺ teeth

The mold selection of the Composite teeth is presented in an attractive aluminum folder, which emphasizes the esthetics of this tooth line. The teeth are uniquely carded in three dimensions in a natural arch, so every single tooth mold appears in the packaging to simulate its appearance in the mouth.

In addition to the complete range of PhysioStar® NFC⁺ anteriors, one maxillary and one mandibular mold of the Condyloform® II NFC⁺ lingualized posteriors and the semi-anatomical Bonartic® II NFC⁺ classic posteriors are also included in this esthetically attractive folder.

ToothScout

NEW! Select NFC⁺ anteriors with your iPhone, iPod or iPad.

The ToothScout is a useful tool for dental professionals to help in the selection of the correct tooth mold for the patient.

The ToothScout is available FREE in the App Store.

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