

**> Natural Ceramic  
Naturally NACERA**





**Did you know that...**  
 ... most of colouring liquids contain ironoxide?  
 Ironoxide reduces the bending strength of your zirconia by 30%?

**DOCERAM uses only pre-coloured materials.**  
 The competitors use individual colouring with non-acceptable dipping technology:

- > acid containing fluids that destroy your valuable sintering furnace
- > different value of shading between copings and pontics
- > no colouring penetration of the framework
- > considerable time expenditure by dipping and drying
- > iron oxide containing colours

**The science**

Raw materials, micro structure, blending, composition, sintering, machining...  
 Our knowledge creates the power for the final product, which will be the replacement for your original parts in your body. It does not play a role, whether it is a blank, an implant, an abutment or a tool.

Save, tested and long-time proven results guarantee for the exceptional quality and innovation designed today for your requirements of tomorrow.

Evaluated researches shown that NACERA Z has a more even distribution of the strength determining yttrium oxide as the standard TZ-3YSB-E Tosoh material.  
 The purity and the fine grain lead to a very fine micro-structure in the finished part. This is desired as this enhances bending strength and hydro-thermal aging properties.  
 The uniform shrinkage leads to an unbeaten fitting due the fine grain.



**The small but fine difference**

The competitors colour their qualities with iron oxide. This lowers the bending strength and hydro-thermal aging properties.

NACERA® Z has an iron oxide free pigment that is only contained in minimal concentrations and therefore it has almost no influence on the bending strength.

We start with the details

- > highly pure materials with exactly balanced, designed chemical composition
- > a significantly higher evenness in the nanometre-scale is proven
- > homogenous, nano-scaled micro-structure significantly better than competition

Isostatic pressure > 3.000 bar leads to complete destruction of the pressing granules. Result is a perfect micro-structure and a uniform shrinkage. For years we deliver the identical shrinkage factor irrespective of raw material batch. This requires a ceramic process technology that is the core competence of DOCERAM.

The control of all material data (incoming inspection, bending strength, granule distribution, chemical analysis, and radioactivity) and process parameter (pressing power, sintering parameters) give us the absolute control of the quality.

We are registered in Europe (93/42 EWG), USA (FDA 510(k)) and Canada (CMDCAS).

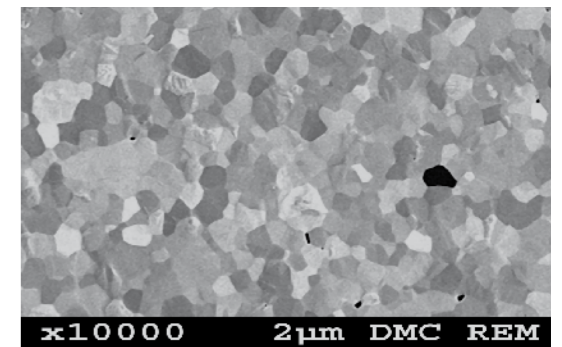
NACERA® Z: higher working speed, higher bending strength, easier finishing.



Powder filling in the clean-room



XRD analysis



Micro-structure tests with SEM



Nano-crystallites in TEM

**A science of itself is our unique powder concept, the purity, the micro-structure – your perfect base!**

**DOCERAM Medical Ceramics focussed on generic powder standards**  
 NACERA Z® - the superior material concept

**DOCERAM reference supplier**  
 Flexible, long-time quality leader  
 Produces after our material requirements patented dental ceramics

**Precise powder concept of DOCERAM Medical Ceramics**

- > chemical composition
- > purity and homogeneity

**Better raw materials lead to**

- > higher bending strength
- > better hydro-thermal stability
- > natural translucency
- > aesthetic colours

**Broad ceramic portfolio**

- > Tosoh-good-standard
- > NACERA® Z
- > NACERA® Z Speed
- > NACERA® Z Medium/Ivory
- > NACERA® ZT

**Our actions are focussed on results.**  
 Right from the start we aim for economic production and a 100% success

**More colours? Different finishing processes? Higher bending strength? Your application determines the materials not vice versa.**  
 Define your individual requirements; we design the powder quality, micro-structure and machining parameters!

**Safety**

- > reference laboratories in permanent testing
- > own Sauer 5-axis milling centre
- > QC parallel to the production

**> Premium materials for perfect final quality**



A holistic material portfolio guarantees a perfect realisation of your economical and procedural requirements:

- > Tosoh quality, good standard quality
- > Nacera® Z Speed fastest machining, secure results
- > Nacera® Z high-end-quality, highest bending strength, perfect finishing, perfect fit
- > NACERA® Z Medium
- > NACERA® Z Ivory
- > NACERA® ZT

„Why not test this?“

### Material concepts

#### Nacera® Z Speed

The high-speed zirconia is for fast milling sintering the “more” in fineness. It was especially developed for users that want more than a standard material. It is especially qualified for:

- > optimised, individualised milling templates with higher feed and speed rate
- > finer, filigree frameworks
- > thinner cervical margins.

Of course you can work with this material in a conventional way as well. With enhanced milling templates, the milling time is 30% less than with usual materials in the market. Sintering is 90 min. or 4.3 h without loss of strength. To give you a secure production environment, we also deliver HSC-tools optimised for speed milling – of course in ‘Made in Germany’ industrial quality.

Ask for our speed templates for your CAD/CAM system to speed up your production process.

Indication: up to 14-unit bridges, single crowns.



#### NACERA® Z Medium/Ivory

The colour security by pre-coloured blanks means homogenous colour throughout the complete construction, no iron oxide, which means no reduction in bending strength and hydro-thermal stability.

NACERA® Z Ivory in the colour area Vita classic /A3/A3,5

NACERA® Z Medium in the colour area Vita classic B1/B2/A2

Indication: up to 16-unit bridges, single crowns, implants, bar and attachments, telescopic crowns technology.



#### NACERA® ZT

This translucent material is high-esthetical and can be used universally:

- > as a translucent coping for demanding front-tooth applications for a ceramic powder build up or over-press technique.
- > fully anatomic restorations, milled with or without incisal cut-back.

NACERA® ZT is a cost effective alternative to metal-free restorations.

High quality, aesthetically, milled in 10 minutes, stained, sintered and glazed.

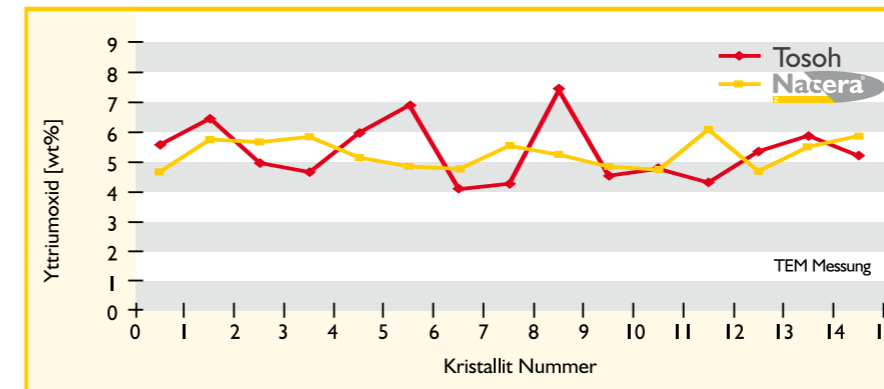
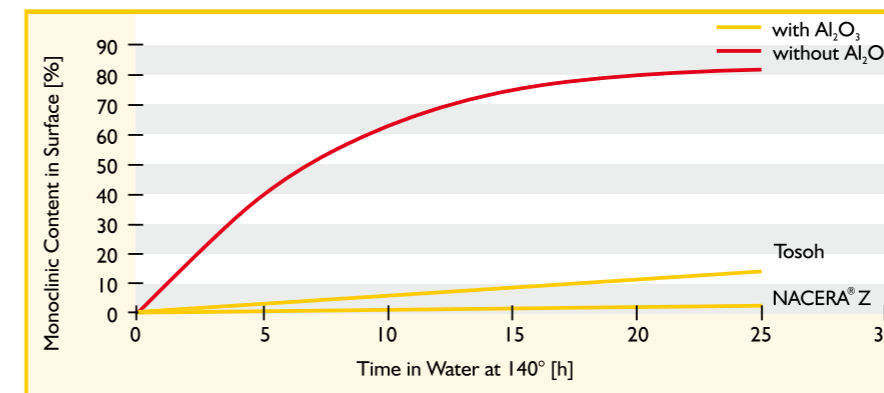
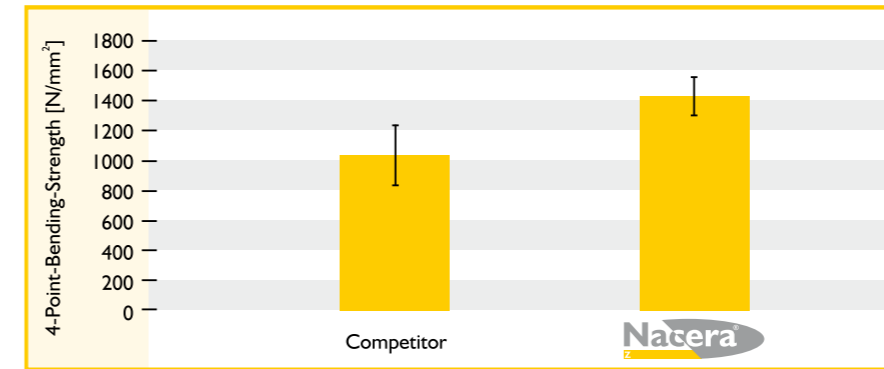
Indication: up to 5-unit bridges, for layer and/or over pressing technology as well as for full anatomic restoration in molar area or for short span bridges.

### Your combatant

- > immense chewing and shear forces
  - > punctual contacts
  - > shearing movements on inclined areas and defective position of tooth
  - > aggressive acids
  - > thermal shocks
  - > electro-galvanic currents
  - > nicotine, tar, caffeine, tanning agents, medicines
- cause abrasion, unaesthetic and besetting plaque or even complete destruction – in short “your mouth is needs a high demanding restoration, even better than mother nature”.

### Our Zirconium is better than the original!

NACERA® knows no caries; NACERA® knows no discolouration, no deposits, NACERA® stands for high expectations on aesthetic, translucency, colouring and form.



Colour security



Precision machining



More time through speed templates



Production security



> Customer oriented material diversity



**DOCERAM works -**

The complete system

- > user oriented
- > open, flexible
- > individual and always cutting edge

“Enjoy your new freedom – without any risk!”

Test our starter-kit consisting of:

- > blank
- > template
- > burs

We are certain that you will hook up with our quality!

**Open system – most common CAM modules– all from one hand!**

We deliver forward-looking complete systems with implemented process security and absolute independence.

The Turn-Key-Solution integrates the complete process chain. From the milling template over HSC tools blancs, sintering kilns, milling machine, everything is part of the solution.

- > CAM-software (Open Mind, SESCOI)
- > Milling machines: tested on major linear and dental machines
- > Tools: diamond coated 3-cutters (HSC – High Speed Cutting Tools) increased life-time
- > Material: Nacera Z Speed, fast processing zirconium
- > Sintering furnace: We have developed Speed-sintering cycles with DEKEMA; these cycles allow to make a complete restoration in one day

Result:

Through extensive tests together with linear machine producers and CAM-module providers we develop optimized templates for our material. The machining time is reduced by 30% per unit.

**Safe service**

We understand us not only as experienced producer and processor of zirconia products, furthermore we would like to share our knowledge of machining and development functioning as your service provider.

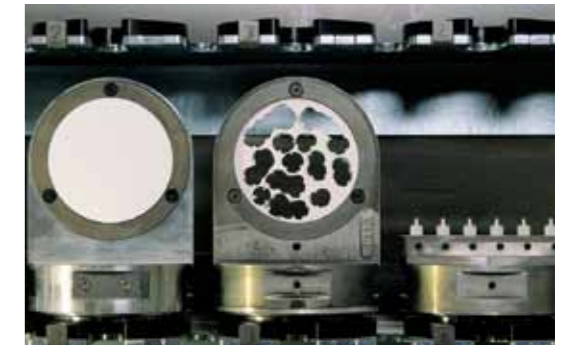
Our industry partners secure in closed co-operation the valuable processing of your products from the start to the finished products.

DOCERAM Medical Ceramics has its own development unit, engineers, and dental technicians to offer you the best solution. We can reproduce internally the complete process chain of the zirconia and are in permanent exchange with commercial reference laboratories.

Stable co-operation with the customers guarantees the successful strategy in the market help you to grow your business.



Direct realisation



Customer related production



Optimised milling strategy



Process revolution through co-operation

> security > freedom > compatibility > individuality for perfect functionality and economical success

**Dentist + laboratory**  
> dental impression > digitalized model > CAD > Chairside CAD/CAM systems > Dental Laboratory

**Process secure CAM-modules**  
Co-operative partnerships with reference suppliers (Open Mind)

**Milling process on linear machines**  
> highly precise  
> high dynamical  
> faster turn around  
> maximum productivity

**NACERA® Z Speed optimised HSC-cutters**  
> higher endurance  
> lower cutting time per unit  
> higher cutting volume

**Sinter furnace for highest productivity, fast sinter cycle**  
> process secure  
> reproducible results  
> fast, 90 min. for single units, 4.30 h for bridges

All components, parameter and milling strategies are optimised on the complete Nacera® Z family!  
NACERA® is the gold standard – the reference for save work, so that you can concentrate on your customers only!

**NACERA® Z** - the implant quality, perfect shrinkage, perfect fit

**NACERA® Z Speed** - high speed zirconia milled in < 8 min., sintered in 90 min.

**NACERA® Z Medium/Ivory**, pre-coloured without iron oxide, durable and high-strength

**NACERA® ZT** - the translucent type highly aesthetic

**Lining**  
> secure substructures for reliable results > faster realisation with secure end results

> Free system choice at maximum production security



### The allies

In the worldwide struggle for market share we have never forgotten that you want to take "a bite" at your competitors and to want "to feel well with us".

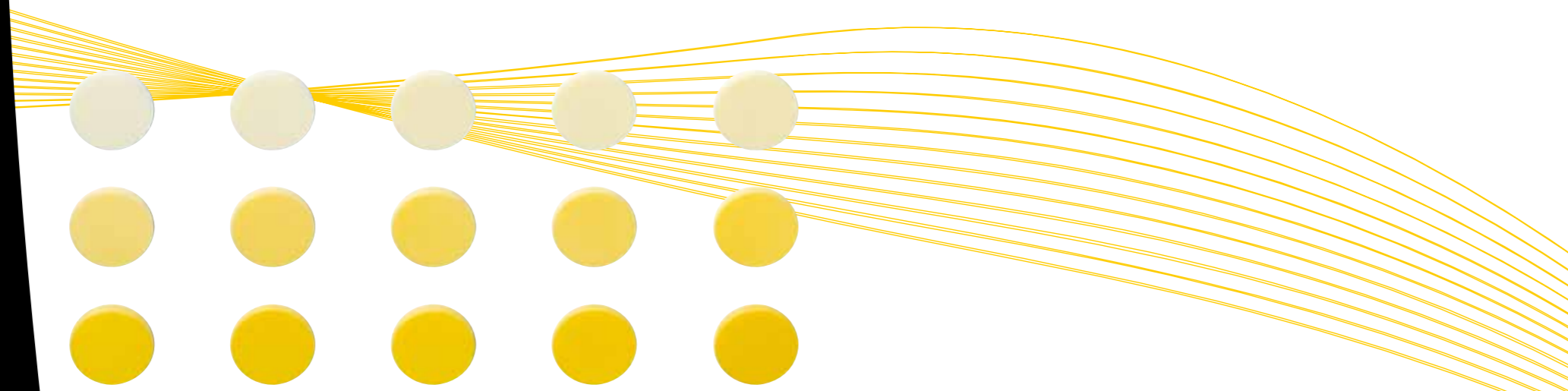
This is why especially global players in the dental technology trust not only our product quality – 3,5 million units, stage end 2009 – but also value our customer focussed engineering:



- > fast development cycles
- > quick decisions
- > production focussed development
- > systematic networking of our partners
- > competitive prices from producer

In addition to that we are working on a daily basis with traders and milling centres close to the needs and parameters of use.

We know the expectations and have learned through a lot of tests and developments to approach new goals offensively in order to secure that your final customer keeps his "bright smile"!



### The partners

We understand what you want! Now we tell you what we would like to do to keep you satisfied, furthermore we want to inspire each and every one of you!

- > The industry needs innovations, creative heads, developers and material specialists for exceptional qualities and trouble-free processes – we are ready!

An absolute security of delivery and solutions for tomorrow, you will see that we have already developed for you!

- > Milling centres and big laboratories need qualities that are made for the newest milling and finishing technologies, fast, predictable, aesthetically, economically, safe – we have the complete choice!

30% time saving processes and quality with no match at a market based price clear the way for new developments, milling technologies, tools and product developments.

- > The dental technicians need save systems, high quality materials that may forgive the smallest takes of everyday work. Tell us your expectations – you have the choice!



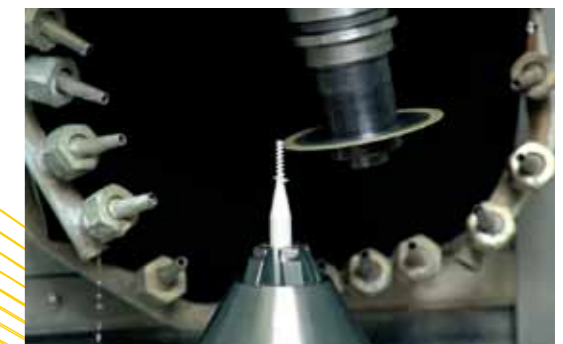
CAD construction



Machine concepts



High precision machining production



Material choice for your individual demand

> Co-operative complete structure





It is nice to know that our broad concept is working.

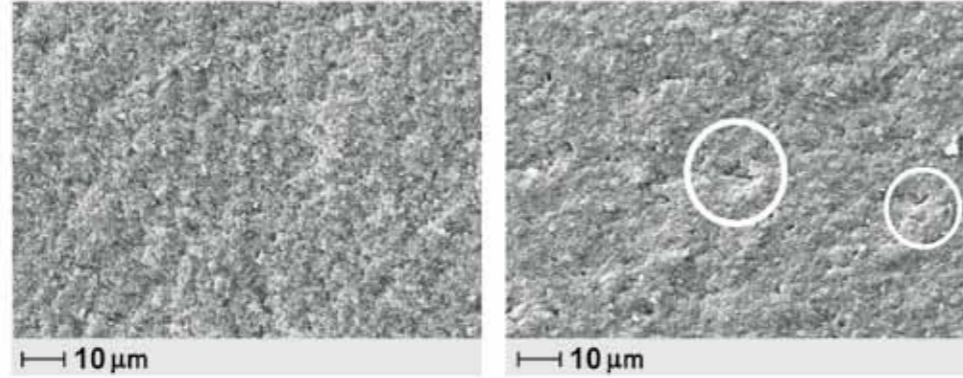
- > secure components
  - > best materials
  - > proven processes
  - > deep rooted application competence
- give you the save feeling to be well at home!



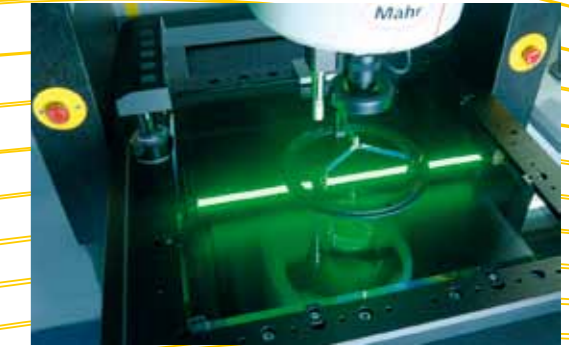
Quality is no standard for us, but an active living consciousness!

Quality management system

- > certified acc. DIN ISO 9001:2008 and
- > certified acc. DIN ISO 13485:2003
- > Certificate acc. 93/42 EEC Annex II Division 3 for prosthesis
- > Certified acc. CMDCAS ISO 13485:2003 for Canada 510 (k) FDA for Nacera Z types for dental prosthesis



(Nacera quality without false in the structure) (competition with defects in blanks)



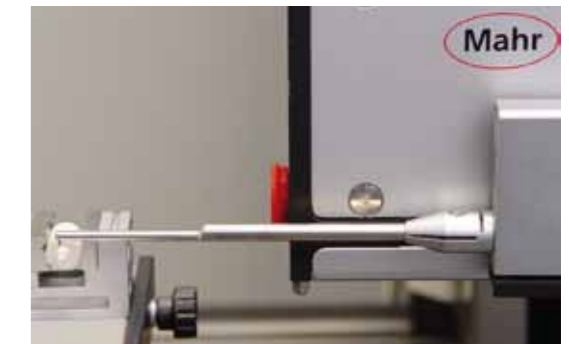
3D-coordinate measuring machine



Material testing



2D-measuring technology



Tip probing against CAD-data



> Extreme endurance, hardness and perfect fit



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Made by nature,  
optimized by DOCERAM,  
created for eternity



“Realise joint visions!”

Certified Company

DIN EN ISO 13485:2003

MOESCHTER GROUP