

**kuraray**

*Noritake*

**4.4.1.**  
S Y S T E M

REINTERPRETING THE AESTHETICS OF  
MONOLITHIC ZIRCONIA CERAMICS

**ZERO CUT-BACK, LAYERING THICKNESS 30  $\mu$ M**



# WHAT IS

# 4.4.1.

**ZERO cut-back** zirconium oxide micro-layering system in unprecedented thicknesses of tens of microns.

Move on to a higher aesthetic level: create contrasts with the internal coloring and obtain translucency and depth using opalescent effect liquid ceramic with a **minimum thickness of 30 microns**.

This also includes the **MICRO cut-back** technique which is based on the same internal coloring technique, but differs in that it uses an opalescent ceramic powder with a **minimum thickness of 0.3 mm**.



# REDEFINING AESTHETICS

4.4.1. redefines the **boundary line between monolithic and layered restorations.**

It integrates 4.4.1. ultra-thin layering into the workflow for monolithic zirconium oxide restorations and takes aesthetics to the next level.

It creates a new basis for economic sustainability using a technique that guarantees predictable results and fast execution times.



Courtesy of: CDT Marco Stoppaccioli - L'Aquila

# LAYERING THICKNESS IN TENS OF MICRONS

There is no reduction or adjustment of the restoration's anatomical design: there is ZERO cut-back for 4.4.1. ultra-thin layering.

Optimize translucency effects; adjusting saturation and brightness has never been easier to control.



# HOW CAN 30 MICRON THICKNESSES CREATE THESE OUTSTANDING EFFECTS?

The translucency, saturation and fluorescence of CZR™ Internal Stain colors can easily be adjusted using Bright Dilution to achieve effects, shading and contrasts.

CZR™ FC-Paste Stain liquid ceramic enamels create depth effects and enhance the internal coloring using incredibly thin 30 micron thicknesses.

Layering a ZERO cut-back monolithic ceramic using the 4.4.1 system makes it possible to achieve a new aesthetic goal with restorations that have the highest demand in the market.



**BEFORE SINTERING**

Internal Stain



**AFTER SINTERING**

Internal Stain

# WHAT YOU SEE IS WHAT YOU GET

Create surprisingly realistic individual internal effects with CZR™ Internal Stain: the refractive index of these colors does in fact enable assessment of the **final color even before sintering**.

This offers a great advantage even for the most experienced ceramist, who is able to replicate the individual details visible in photographs with maximum control and predictability.



Courtesy of: CDT Francesco Napolitano - Naples



**BEFORE SINTERING**  
Raw KATANA™ STML



**AFTER SINTERING**  
With Internal Stain



# OBSERVE, REPRODUCE AND COMPARE, THEN FIX THE RESULT IN THE SINTER FURNACE

Replicate the original color and its shades the way an artist transfers it to the canvas. The colors of the 4.4.1. system allow you to create a perfect copy before sintering. You will get exciting results; way above your expectations. This offers major advantages for the most experienced ceramist, and opens up opportunities to delegate your work.



# 4.4.1.

## ADVANTAGES

**ZERO cut-back micro-layered: aesthetics at a higher level**

- 30 micron thicknesses
- Easy control of translucency, saturation, brightness, and fluorescence
- Realistic color before sintering
- Easy and quick application, self-polishing
- MICRO cut-back thicknesses with 0.3 mm powders



# 4.4.1.

## LESS 4 MORE

The 4.4.1. system is based on the selection and combination of ceramics from the CZR™ Noritake line validated by internationally renowned ceramists.

Introduce the modern liquid micro-layering technique in your laboratory with a 4.4.1. assortment of 9 colors that can be used for the ZERO cut-back and MICRO cut-back techniques.

- CZR™ Internal Stain 4 internal colors: A+, Incisal Blue, Earth Brown, Mamelon Orange 2
- CZR™ FC Paste Stain with 4 translucents: A+, Clear Glaze, Grayish Blue, Mamelon Orange 2
- 1 translucent opalescent CZR™ Luster LT1 in powder form
- 1 liquid CZR™ Internal Stain
- 1 body Bright Dilution CZR™ Internal Stain



CZR™ Internal Stain



CZR™ FC Paste Stain

## ZERO CUT-BACK 4.4. TECHNIQUE

INTERNAL EFFECTS providing optical illusions, saturation control and contrasts made with CZR™ Internal Stain emulsions adjusted using body Bright Dilution.

Overlay self-polishing glass emulsions and CZR™ FC Paste Stain and create depth effects enhancing the internal coloring: the result will surprise you.



Video Tutorial



CZR™ Internal Stain



CZR™ Luster Porcelain

## MICRO CUT-BACK 4.1. TECHNIQUE

The MICRO cut-back is based on the same internal coloring technique, but differs in the use of a high-brightness opalescent CZR™ ceramic powder for refined natural effects and textures in a minimum thickness of 0.3 mm.



Video Tutorial



Courtesy of: CDT Marco Stoppaccioli - L'Aquila

## ZERO CUT-BACK: 4.0. TECHNIQUE

CZR™ FC Paste Stain translucent emulsions alone create natural effects of extraordinary beauty when used in combination with the KATANA™ STML and UTML zirconium oxide formulations. Even after sintering, bodies with CZR™ FC Paste Stains retain the surface texture impressed on the emulsions with the brush.



Courtesy of: CDT Marco Stoppaccioli - L'Aquila

## TISSUE



## THE BEAUTY OF WHITE AND PINK

For gingival reproductions of natural beauty and brightness, CZR™ Tissue LF powders (low-temperature) create the best white aesthetic frame.

Tissue LF powders are the easiest and most effective solution to create bright and brilliant shades for a perfect pink color.

# SINTERING PARAMETERS 4.4.1. TECHNIQUE

SINTERING PLAN 4.4.1.	INTERNAL STAIN	FC PASTE STAIN	LUSTER PORCELAIN	PINK TISSUE LF
Dry-Out Time (MIN)	5	5	10	10
Predrying Temperature °C	450	450	450	450
Start Vacuum °C	450	450	450	450
Heat Rate °C/MIN.	45	45	45	45
Vacuum Level (KPA)	96	96	96	96
Release Vacuum °C	899	754	934	839
High Temperature °C	900	755	935	840
Hold Time (MIN)	-	1	1	1
Cool Time (MIN)	4	4	4	10

The temperatures in the Table are indicative and may vary depending on the oven.  
For sintering of extended bridges change the curing time, gradient and cooling time.

# THE FASTEST AND MOST EFFICIENT TRAINING EVER

It does not take much to know and understand the 4.4.1. technique.  
You will need to know a few tips and tricks and the good news does not end there: our demonstrations and "ON AIR" practical courses offer you an interactive model that allows you to interact with the tutor more effectively while staying in your laboratory.  
From the next day onwards you can start using the 4.4.1. technique.

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**ON AIR PRACTICAL COURSE: Find out how its benefits  
work and the 2021 calendar**

[www.kuraraynoritake.eu/en/441courses](http://www.kuraraynoritake.eu/en/441courses)

[www.kuraraynoritake.eu/en/calendar](http://www.kuraraynoritake.eu/en/calendar)



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**WEBINAR WITH LIVE DEMO: See calendar 2021**

[www.kuraraynoritake.eu/en/webinars](http://www.kuraraynoritake.eu/en/webinars)



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