



7 MISTAKES TO AVOID WHEN CREATING NATURAL-LOOKING RESTORATIONS

WITH KATANA™ Zirconia YML
AND CERABIEN™ MiLai

By Jade Sidou Trabuc, CDT

Lifelike results: restoration of a micro-layered lateral incisor using CERABIEN™ MiLai ceramic. Internal characterization and minimal layering were performed to reproduce a natural shape, harmonious translucency, and realistic surface texture. Powders used: CCV2 and LTx, internal staining for effects, and surface stains to reproduce details and harmonize the smile.

7 MISTAKES TO AVOID TO ACHIEVE A NATURAL RESULT

Aesthetic failures in ceramic restorations are almost never the fault of the material itself. In ten years of laboratory practice, I have rarely seen a restoration fail because of the zirconia or the ceramic material. What I observe instead is a series of recurring mistakes – often invisible during the fabrication process – that ultimately compromise the final result under natural lighting conditions or during intraoral evaluation.

KATANA™ Zirconia YML and CERABIEN™ MiLai (Kuraray Noritake Dental Inc.) are materials with remarkable optical properties. Their interaction with light closely resembles that of natural dentition, provided that the entire fabrication process is carried out consistently. The quality of a restoration is not determined by the number of effects applied; rather, it depends on understanding the principles that govern the perception of shade, translucency and surface texture.

Born from my daily experience in the laboratory, this article presents the seven most common mistakes I have observed – both in my own work and among fellow technicians – when fabricating micro-layered restorations. For each of them, I explain why it occurs, what its optical consequences are, and which practical solution can be implemented immediately.



Mistake n°1

- Choosing the wrong translucency from the start
- Definitely needs to be one mistake only

Mistakes n°2 & 3

- Copying a photograph instead of understanding the natural tooth
- Neglecting the impact of clinical preparation

Mistakes n°4 & 5

- Correcting shade with ceramic
- Excessive contrast

Mistakes n°6 & 7

- Neglecting polishing
- Evaluating under a single light source



FRAMEWORK, OPTICAL INTERPRETATION AND CLINICAL PREPARATION

Mistake n°1

Choosing the wrong translucency from the start

Why it happens: The selection of KATANA™ Zirconia YML is often driven by habit or used as a default choice because of its outstanding versatility in terms of mechanical strength, without considering the actual clinical situation – namely, the colour of the underlying substrate (light or dark abutment, cast post-and-core/inlay core). The translucency/opacity level of KATANA™ Zirconia (UTML, STML or HTML PLUS) should be selected according to the shade of the prepared abutment, the available reduction thickness and the brightness of the adjacent teeth.

Consequences: A framework that is too translucent over a dark abutment will create a deep greyish effect that cannot subsequently be corrected with ceramic layering. Conversely, an excessively opaque framework blocks the transmission of light, resulting in a dull, chalky and lifeless appearance.

Solution: Always assess the shade of the prepared abutment before ordering the disc. Use the KATANA™ Zirconia YML selection guides, which correlate abutment value, available reduction thickness and the target shade. When working with lithium disilicate over C3 or D4 abutments, favour ML or HT blocks to preserve brightness without allowing the underlying darkness to influence the final surface appearance.

Mistake n°2

Copying a photograph instead of understanding the natural tooth

Why it happens: The temptation to reproduce exactly the shade photograph provided by the clinician is strong. However, a photograph is an interpretation of light, not light itself. It flattens volumes, exaggerates certain reflections and eliminates subtle transitions.

Consequences: Effects are reproduced without understanding their origin. An incisal halo visible in a photograph may simply be an optical illusion created by the angle of the flash. Attempting to replicate it in ceramic may result in an artificial and static appearance.

Solution: Learn to read a tooth rather than copy it. Analyse the distribution of the developmental lobes, the direction of light in the photograph, and distinguish genuine areas of translucency from simple reflections. With CERABIEN™ MiLai, we work by considering how light circulates within the restoration, rather than focusing solely on its surface appearance.

Mistake n°3

Neglecting the impact of clinical preparation

Why it happens: The dental technician works from the impression or digital model provided by the clinician. It is not always possible to reject an under-reduced or irregular preparation, particularly when working under tight deadlines.

Consequences: Insufficient tooth reduction forces the technician to fabricate a framework that is too thin, leaving inadequate space for CERABIEN™ MiLai ceramic layering. A discoloured preparation, or a non-opaque post-and-core restoration, compromises the entire optical chain: even the finest ceramic cannot compensate for an opaque, greyish underlying substrate.

Solution: Establish a systematic communication protocol with the clinician, including a space assessment form (facial, occlusal and interproximal clearance), photographs of the abutment shade taken under natural light and, whenever possible, under polarized lighting. Never hesitate to request preparation modifications in writing. A well-documented fabrication report protects the dental technician and contributes to a better clinical outcome.

Tip: Before starting a complex case, assessing the abutment shade, the available restorative space and the lighting conditions allows you to anticipate most aesthetic challenges.

CERAMIC CANNOT COMPENSATE FOR EVERYTHING

Mistake n°4

Trying to correct shade with ceramic alone

This is one of the most common – and most time-consuming – mistakes. It stems from a misconception: that layering ceramic is a universal shade-correction tool. In reality, the final colour of a micro-layered restoration is the result of an equation with four variables – framework, abutment, cement shade and ceramic – and modifying one without taking the others into account is bound to fail.

In practical terms: if the selected KATANA™ Zirconia YML framework is too light for a C4 abutment, applying a more saturated CERABIEN™ MiLai ceramic on the surface will produce a restoration with two different appearances – too warm in reflected light and too grey in transmitted light. Light reflection and light transmission do not behave in the same way, and the human eye perceives both simultaneously.

Practical solution: Establish the complete optical chain before you begin. Know the shade of the cement planned by the clinician (or ask for this information specifically), evaluate the framework under transmitted light before layering, and build the restoration with the overall value in mind rather than focusing solely on the surface shade.

Mistake n°5

Creating excessive contrast between ceramic effects

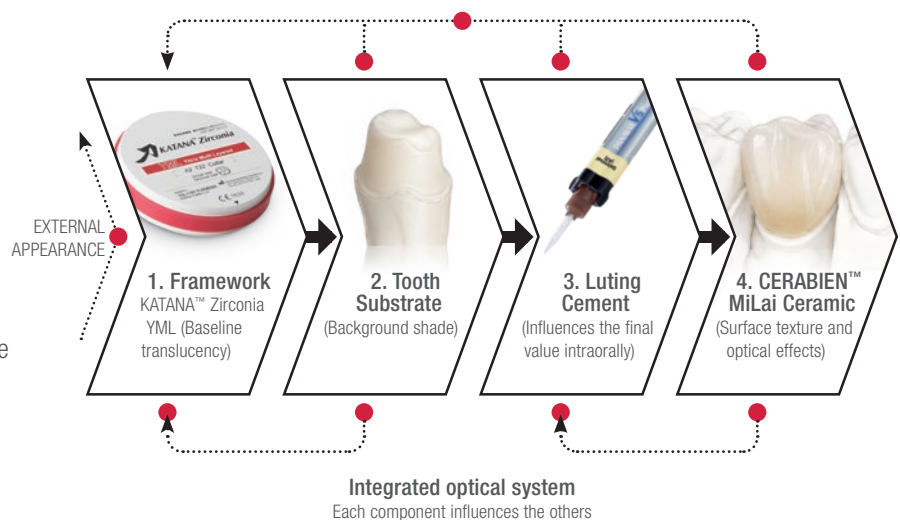
The temptation to use every available effect is understandable. CERABIEN™ MiLai ceramics offer an exceptionally rich selection of opalescent, fluorescent, mamelon, and incisal effect materials. Precisely because of this diversity, over-characterization can easily occur.

Natural teeth exhibit subtle optical phenomena. Internal features such as mamelons, halos, and areas of translucency are generally discreet and become noticeable only at close range. The natural appearance of a restoration does not depend on the intensity of these effects, but rather on the continuity and harmony of the transitions between the different ceramic masses.

A restoration with overly pronounced contrasts is immediately perceived as artificial, even by a nonprofessional observer, because it attracts attention instead of blending seamlessly into the dentition.

Practical recommendation:

Use mamelon characterizations sparingly and evaluate the restoration regularly from a minimum distance of approximately 50 cm during the layering process. This macroscopic assessment helps verify the overall balance of the optical effects and prevents excessive contrast that could compromise the restoration's natural appearance.



POLISHING, SURFACE TEXTURE, AND LIGHT MANAGEMENT

Mistake n°6

Underestimating the importance of polishing and surface finish

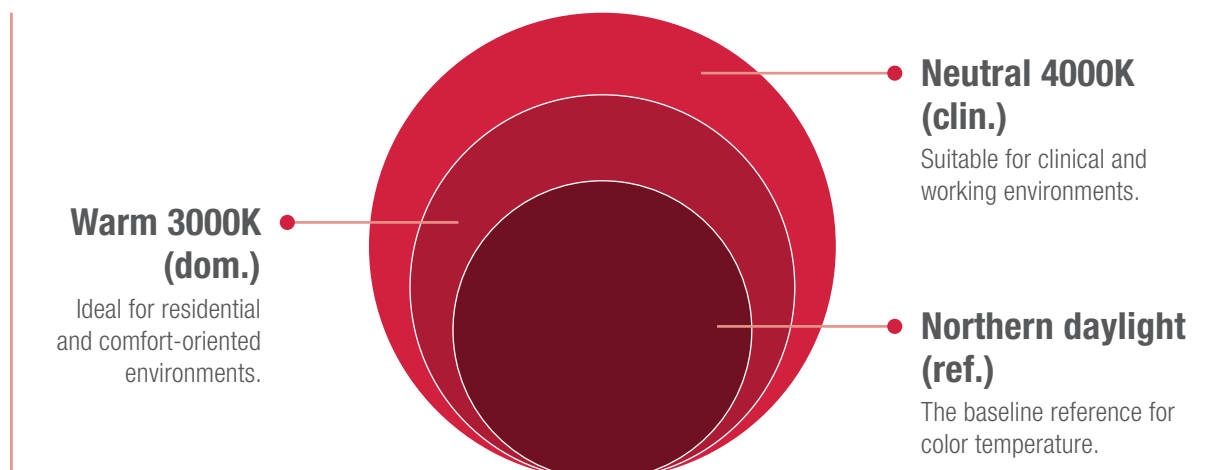
The surface condition of a ceramic restoration is one of the most critical factors influencing its final optical appearance – and one of the most frequently overlooked. Surface texture acts as an interface between incident light and the observer.

An excessively smooth surface reflects light specularly, creating bright highlights that may reveal subtle shade imperfections. Conversely, an overly rough surface scatters light in an uncontrolled manner, lowering the perceived value and accentuating chromatic irregularities. With CERABIEN™ MiLai ceramics, glazing plays a particular role: it homogenizes the micro-textures generated during the layering process and contributes to the perception of depth. A glaze layer that is either too thick or too thin alters the hierarchy of the visual layers. When properly mastered, post-firing manual polishing can even surpass glazing in terms of naturalness, as it enables the reproduction of differentiated anatomical textures – smoother in the cervical area and more textured in the incisal region.

Practical solution:

Sequence the polishing procedure according to the different anatomical areas. Use silicone polishers with progressively finer grit sizes while maintaining light, constant pressure. For monolithic restorations fabricated from KATANA™ Zirconia YML, complete the polishing protocol with a 1- μ m diamond paste to achieve a surface smoothness comparable to that of natural enamel. When working with CERABIEN™ MiLai layered restorations, create the surface texture before glazing using a fine rotary instrument, and verify the surface condition prior to the final firing cycle.

Polishing tip: I always keep an untreated extracted natural tooth on my workbench as a reference for surface texture. Before validating the final polish, I compare the restoration with this tooth under grazing light. It is a simple, cost-free, and remarkably effective method for assessing the quality and naturalness of the surface finish.



Mistake n°7

Evaluating your work under a single light source

Dental laboratories are often equipped with cool white fluorescent lighting – practical for daily work, but misleading when evaluating a restoration. Cool light tends to overestimate value (brightness), suppress red and yellow hues, and diminish the perception of translucency. A restoration that appears ideal under these conditions may look gray or dull in natural daylight, and excessively warm under the incandescent lighting commonly found in residential environments.

This phenomenon, known as metamerism, is particularly critical with highly fluorescent ceramics such as CERABIEN™ MiLai. Fluorescent pigments respond differently depending on the spectral composition of the light source: a highly fluorescent restoration may appear exceptionally vibrant under UV-rich natural light or ultraviolet illumination, yet much more ordinary under filtered artificial lighting.

Ignoring this optical behavior can lead to restorations whose appearance changes unexpectedly once placed intraorally.

Practical solution:

Implement a three-light evaluation protocol consisting of natural daylight (diffused northern light), warm artificial light (3000 K), and neutral fluorescent or LED lighting (4000 K).

Under each lighting condition, assess the restoration first in isolation and then in context, positioned on the model and adjacent to the neighboring teeth.

The variations in optical behavior observed under these different light sources will reveal more about the quality and integration of the restoration than any other evaluation method.

Lighting tip: In my laboratory, I have a small north-facing window with no direct sunlight. It serves as my primary lighting reference. Every restoration is evaluated under this natural diffused light before leaving the lab. Those two minutes of inspection have saved me from many unnecessary remakes and adjustments.

- This three-light evaluation protocol makes it possible to detect metamerism before delivery, anticipate the restoration's behavior under the various lighting conditions encountered by the patient, and validate the fluorescence of the ceramic under different spectral conditions.

CONCLUSION

OPTICAL MASTERY BEFORE OPTICAL EFFECTS

After years of working with KATANA™ Zirconia YML and CERABIEN™ MiLai, one conviction remains unchanged: it is not the materials that limit the outcome, but our understanding of how to use them. These seven mistakes are not professional failures – they are logical pitfalls that every dental technician encounters on the path to excellence. Identifying, naming, and understanding them is already half the journey.

What distinguishes an average restoration from an exceptional one is rarely the complexity of its layering. More often, it is the consistency of the decisions behind it: selecting the appropriate zirconia translucency and opacity according to the clinical situation; accurately interpreting the optical characteristics of the natural dentition; maintaining an effective dialogue with the clinician regarding tooth preparation and cement selection; exercising restraint in the use of effects; applying meticulous polishing protocols; and adhering to a disciplined lighting evaluation procedure. These are simple principles, yet their systematic application has the power to elevate the overall quality and consistency of a laboratory's work.

Optical understanding

Study light, morphology, and transitional areas before touching a brush. A successful restoration begins with observation – not with stratification.

Workflow consistency

The framework, underlying tooth substrate, luting cement, and ceramic restoration must be considered as an integrated system. Each component affects the optical and mechanical behavior of the others, and no single corrective measure can fully compensate for a weak link within the restorative chain.

Restraint with optical effects

Internal effects should enhance naturalness rather than attract attention. In ceramic esthetics, subtle transitions are more important than the intensity of individual characterizations.

Rigorous evaluation

Evaluate the restoration under multiple lighting conditions, at different viewing distances, and within its clinical environment. A rigorous validation protocol constitutes the final safeguard before delivery and definitive placement.

After years of experience, I have found that CERABIEN™ MiLai, with its exceptional chromatic richness and optical behavior closely resembling that of natural dental tissues, reveals its full potential only when used with discernment. It is unforgiving of excess – but generously rewards mastery. This is precisely why, in my view, it is one of the most faithful layering systems available today, capable of adapting equally well to single-unit and multi-unit restorations. Its versatility and optical consistency allow the ceramist to achieve highly natural results while maintaining complete control over the restorative process.

A woman with dark hair, wearing a black blazer over a white collared shirt, stands with her arms crossed. She is looking slightly upwards and to the left. The background is a vibrant red with a large, glowing, orange-yellow sphere that has a textured, almost liquid surface, resembling a planet or a large light source. The lighting is dramatic, highlighting the woman's face and the texture of the background.

*“A natural restoration should not draw attention to itself.
It should simply feel right. It is optical principles – not
the quantity of effects that create the illusion of life.”*

Jade Sidou Trabuc

About the author

Jade Sidou Trabuc is a dental technician and founder of Le Sourire Français laboratory, specializing in aesthetic fixed prostheses. Passionate about dental ceramics, Jade strives to combine precision, natural appearance, and digital technologies in each of her creations. A gold medalist at WorldSkills France and named Best Apprentice in France, she has also been a Key Opinion Leader for Kuraray Noritake since 2026. Jade is committed to advancing her profession by sharing her passion for dental aesthetics and ceramic techniques. Her goal is to promote French expertise and contribute to the development of aesthetic dental prosthetics.

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ハタケカタナ®ジルコニア

 **KATANA™ Zirconia**

YML Yttria Multi Layered

[A2 T14 Collar]

Incisal side
Occlusal side



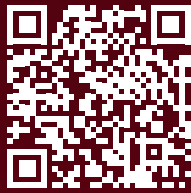
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クラレノリタケデンタル株式会社
新潟県胎内市豊敷町2-28

 **Kuraray Noritake Dental**
300 Higashi-yama, Miyoshi-cho
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Kuraray Europe GmbH, BU Medical Products, Philipp-Reis-Str. 4, 65795 Hattersheim am Main, Germany
+49 (0)69-30 535 835, dental.eu@kuraray.com, www.kuraraynoritake.eu