



VERSIONE 2.03

Natural
CERAMIC
SYSTEM

DENTAL CERAMIC

ITALIAN STYLE

CE 0546

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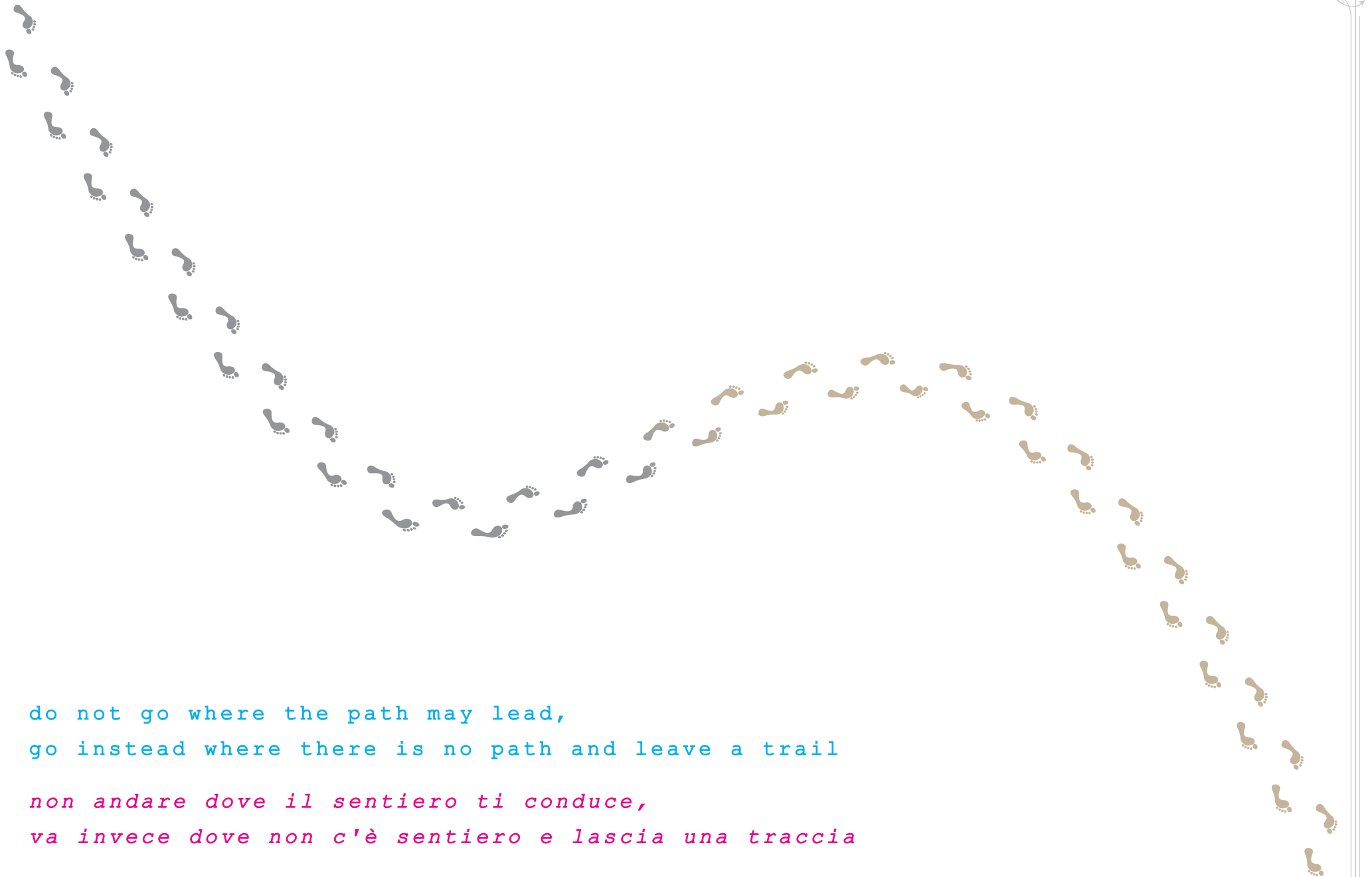
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CRYSTAL

SPECIAL PASTE CERAMIC FOR ZIRCONIA, LITHIUM SILICATE AND METAL-CERAMIC

CRYSTAL LIVE! & CRYSTAL GUM



do not go where the path may lead,
go instead where there is no path and leave a trail

*non andare dove il sentiero ti conduce,
va invece dove non c'è sentiero e lascia una traccia*

Designed by Tressis Italia in Conegliano 



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Natural Ceramic System

For over 15 years it has been offering ceramic solutions of the highest quality, introducing innovative ceramic tools to the market:

- 2007 the Natural Ceramic System is born;
- 2009 THE ONE was introduced, the first mono-mass for layering in the variants for metal, both with high and low fusion, and for zirconia.
- 2015 the materials for micro-layering and universal super colors in paste are developed.
- 2020 Crystal has arrived, the latest creation by Tressis Italia, which summarizes all the experience gained in micro-layering on zirconia and lithium silicate; CRYSTAL offers the possibility of characterizing metal-ceramics with the same material.

1. CRYSTAL LIVE! & CRYSTAL GUM

SPECIAL GEL-CERAMIC FOR MONOLITHIC ZIRCONIA, STRATIFIED ZIRCONIA,
LITHIUM SILICATE AND METAL-CERAMIC, ALSO AFTER THE GLAZE FIRING

1.1 PRODUCT DESCRIPTION

LAYERED AESTHETICS ON MONOLITHIC ZIRCONIA & LITHIUM SILICATE

Natural Ceramic System is the dynamic ceramic system created by Tressis Italia which includes the CRYSTAL project, special ceramic gel for micro-layering. Specifically, the CRYSTAL system consists of two kits: CRYSTAL LIVE! masses to micro-stratify the different areas of the tooth and CRYSTAL GUM masses to characterize the false soft tissues.

Both kits are part of the Natural CRYSTAL family for micro-layering and creating special effects on: monolithic zirconia, layered ceramic on zirconia, milled and pressed lithium silicate, metal ceramic.

With the ceramic masses of the CRYSTAL system you can achieve a high aesthetic effect and special effects such as emphasizing incisal areas, characterizing pits, creating crack-lines, outlining mamelons etc.

With CRYSTAL it is possible to obtain excellent results, completely comparable to traditional layered ceramic, with very thin thicknesses (0.1-0.2mm).

CRYSTAL masses in gels have an ideal consistency and great stability, this allows for complex effects to be built. Furthermore, on brush-modeled surfaces it is possible to increase the aesthetic effect with an absolutely natural surface texture.

The firing temperature of the CRYSTAL masses is low and does not change the color stability of the zirconia, nor the precision of the closures made with integral ceramics and lithium silicate.

CRYSTAL gives beauty to restorations with just one firing.

CRYSTAL LIVE! is compatible with:

- Monolithic Zirconia;
- Natural ZIR layered on zirconia;
- Natural ZIR pressed on zirconia and / or integral;
- Natural DSL lithium silicate milled and pressed;
- Natural HT layered on alloy.

CRYSTAL GUM is compatible with:

- Monolithic Zirconia;
- Natural ZIR layered on zirconia;
- Natural ZIR pressed on zirconia and / or integral;
- Natural DSL lithium silicate milled and pressed;
- Natural HT layered on alloy.

ADVANTAGES

- PREDICTABLE AND RELIABLE RESULTS EVERY TIME
- VERY EASY TO MANAGE GEL MASSES WITH BOTH BRUSH AND SPATULA
- SAVING MONEY THANKS TO VERY FAST PROCESSING AND COOKING
- A SINGLE MATERIAL TO CREATE SPECIAL EFFECTS ON:
 - MONOLITHIC ZIRCONIA
 - NATURAL ZIR LAYERED ZIRCONIA
 - LAYERED CERAMIC ON METAL (EVEN AFTER GLAZE FIRING) NATURAL HT
 - NATURAL DSL LITHIUM SILICATE
- HIGHLY FLUORESCENT CERAMIC MATERIALS
- SPECIFIC ULTRA-FLUORESCENT GEL GLAZE FOR MONOLITHIC ZIRCONIA
- NATURAL REFRACTION AND DIFFUSION OF LIGHT ALREADY WITH A THICKNESS OF ONLY 0.1MM
- VERY HIGH STABILITY IN FIRINGS
- NO SHRINKAGE OF MATERIAL DURING FIRING
- SIMPLE COLOR MANAGEMENT, WHAT YOU SEE IS WHAT YOU GET AFTER COOKING
- FULL COMPATIBILITY WITH NATURAL CERAMIC SYSTEM CERAMICS
- FULL COMPATIBILITY WITH NATURAL STAINS POWDERS AND PASTES

1.2 TECHNICAL DATA

CRYSTAL LIVE! and CRYSTAL GUM comply with all applicable standards for dental ceramics (EN ISO 6872, EN ISO 10993-5). All limits are undercut and the thresholds are largely exceeded.

	TYPE	CLASS	CTE 2X FIRINGS (25 - 500) °C	CTE 4X FIRINGS (25 - 500) °C	TG* 2x / 4x FIRINGS	CHEMICAL SOLUBILITY		PROVA PIEGATURA 3 PUNTI		RADIO ACTIVITY		CITOTOXICITY	
			[x10 ⁻⁶ K ⁻¹] ± 0.5	[x10 ⁻⁶ K ⁻¹] ± 0.5	[°C] ± 20	CERAMIC CRYSTAL	ACCORDING ISO 6872 ISO 10993	CERAMIC CRYSTAL	ACCORDING ISO 6872 ISO 10993	CERAMIC CRYSTAL	ACCORDING ISO 6872 ISO 10993	CERAMIC CRYSTAL	ACCORDING ISO 6872 ISO 10993
			[µg / cm ²]	[µg / cm ²]	[MPa]	[MPa]	[Bq · g ⁻¹ U ²³⁸]	[Bq · g ⁻¹ U ²³⁸]					
CRYSTAL LIVE!	1	1	9,5	9,5	495	19 - 35	< 100	145 - 150	≥ 50	COMPLIANT **	< 1	COMPLIANT ***	NOT CITOTOXIC
CRYSTAL GUM	1	1	9,5	9,5	495	19 - 35	< 100	145 - 150	≥ 50	COMPLIANT **	< 1	COMPLIANT ***	NOT CITOTOXIC

Values tested in accordance with ISO 6872 and ISO 10993-5; * for TG below 500 ° C, the CTE value [25 ° C-TG] is specified.

** Subject of report 170231-20-A, 17/02/01. *** Subject of the analysis report 131284-20-A, 13-04-03.

1.3 INSTRUCTION FOR USE

- do not dry / drain any liquid present in the jar; mix the material inside the jar until a creamy and soft paste is obtained;
- use a glass, zirconia or agate spatula to mix the CRYSTAL masses in the jars; do not use metal spatulas;
- CRYSTAL gels have a special formulation, do not use water and / or Natural MODELING LIQUID to dilute them: use the special Natural CRYSTAL LIQUID liquid or Natural STAINS & GLAZE LIQUID;
- always use a clean brush to work with CRYSTAL gels;
- for better conservation it is recommended to store in a dry place, away from heat sources;
- CRYSTAL gels, due to their formulation, can tend to dry out over time: if the gel is too dry, it is possible to restore the original creaminess by adding a few drops of Natural CRYSTAL LIQUID or Natural STAINS & GLAZE LIQUID liquid and mixing the gel vigorously in the jar;
- if properly stored, the material does not expire.

2. CRYSTAL LIVE!

with CRYSTAL LIVE! gels you can obtain a sensational aesthetic result in less time and more easily.

The CRYSTAL system was created to obtain fluorescence, translucency and chromaticity already with minimum thicknesses.

Furthermore, the low processing temperature does not change the characteristics of the surface, allowing excellent results already with one or two firings.

2.1 CRYSTAL LIVE! SYSTEM COMPOSITION

The CRYSTAL LIVE! is formed from:

- 4 structure masses LIVE! 1, LIVE! 2, LIVE! 3, LIVE! IWS;
- 2 special highly opaque masses for mamelons LIVE! MAMELON CREAM and VANILLA;
- 18 dentin masses in A-D coloring, from A0 to D4;
- 4 intensive masses of the incisal area LIVE! ENAMEL S1, S2, S3, S4;
- 6 transparent masses LIVE! TRANSPA OPAL, CLEAR, PINK, BLUE, ORANGE and SICILY;
- 1 ultra-fluorescent glaze CRYSTAL GLAZE FX.

These masses can be mixed with all Natural STAINS universal super-colours, both in powder and paste form.

LIVE! IWS, 1, 2, 3: masses for micro-stratification to be used either pure or mixed with Natural STAINS super-colours:

- LIVE! IWS: low transparency, very high translucency, maximum value, opacity approx. 95%;
- LIVE! 1: low transparency, high translucency, very high value, opacity approx. 75%;
- LIVE! 2: medium transparency, high translucency, high value, opacity approx. 45%;
- LIVE! 3: low transparency, medium translucency, intermediate value, opacity approx. 25%.

LIVE! MAMELON: highly opaque and fluorescent masses for the creation of characterizations, mamelons, light points, etc:

- CREAM: high opacity, high fluorescence, cream color;
- VANILLA: high opacity, high fluorescence, vanilla color.

LIVE! ENAMEL: enamel masses for the incisal area (upper third), to increase the aesthetic result of the enamel:

- S1: high luminosity, high value, ideal for very light and/or very young colours;
- S2: intermediate luminosity, high value, ideal for adult elements in colors A and B;
- S3: low luminosity, intermediate value, ideal for adult elements in shades C and D;
- S4: low luminosity, low value, ideal for older elements or areas in contrast with other enamel masses.

LIVE! TRANSPA: masses for micro-stratification of effects both in the incisal areas (upper third) and in the collar areas (lower third), can be mixed with Natural STAINS stains to create areas of greater depth and special effects:

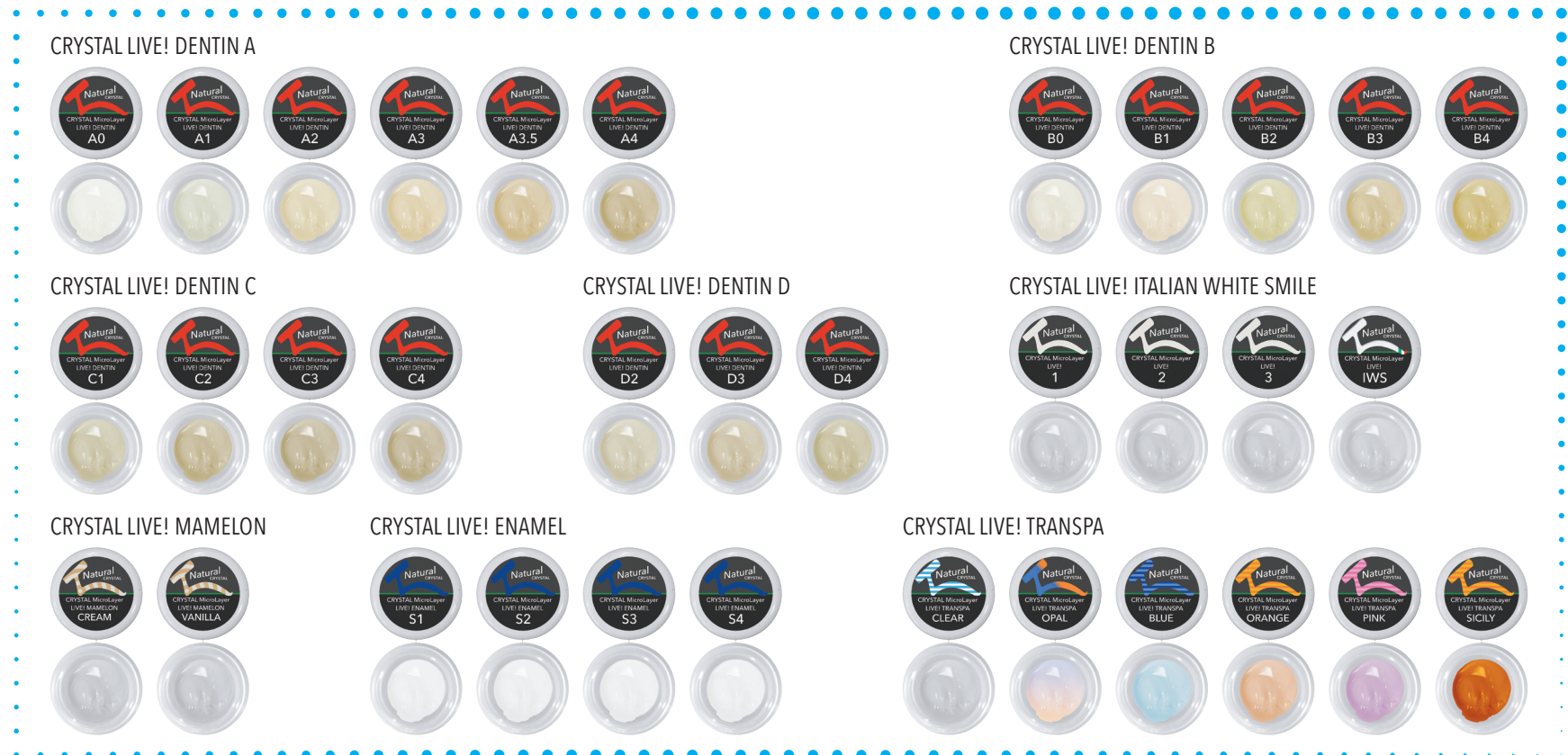
- OPAL: bright and brilliant transparent, highly opalescent;
- CLEAR: bright and brilliant transparent, achromatic and transparent;
- ORANGE: intermediate transparency, high translucency, orange transparent;
- BLUE: intermediate transparency, medium translucency, blue transparent;
- PINK: intermediate transparency, medium translucency, transparent pink;
- SICILY: intermediate transparency, low translucency, very saturated orange transparent;

LIVE! DENTIN: these are masses for the dentin area (middle third), they can be used both to modify the base color and to characterize particular areas of the restoration:

- A-D highly translucent and fluorescent dentin masses available in all the traditional A-D shades with the addition of the off-scale A0 and B0;

CRYSTAL LIVE! masses are characterized by:

- very high stability both in modeling with a brush and in firings;
- possibility of creating a surface characterized by micro-stratification;
- refraction of light very similar to natural teeth even with a minimum thickness (0.1-0.2 mm);
- low firing temperature to maintain the detail of the surface texture.



2.2 CRYSTAL LIVE! FIRING CHART

FIRING PROGRAM NAME	DRYING TIME	CLOSING TIME	START TEMPERATURE	HEAT RATE	FINAL TEMPERATURE	HOLDING TIME	VACUUM START	VACUUM END	OPENING TIME	NOTE
	min	min.	°C	°C/min.	°C	min.	°C	°C	min.	
LIVE! 1 st and 2 nd ZIRCONIA	03:00	03:00 - 06:00	400	45	770	02:00	670	770	05:00	Firing program for MONOLITHIC ZIRCONIA structures, the final temperature must be adjusted to obtain a satin and shiny surface, without bleaching the zirconia
LIVE! 1 st and 2 nd LITHIUM SILICATE	03:00	03:00 - 06:00	400	45	770	02:00	670	770	05:00	Firing program for LITHIUM SILICATE structures, modify HOLDING TIME and FINAL TEMPERATURE according to the LITHIUM SILICATE manufacturer's instructions. DO NOT OVERHEAT.
STAINS FIXING	03:00	03:00 - 06:00	400	45	700	01:00	670	700	05:00	Blocks colors and prevents mixing; it can be done several times to achieve the final result. Conclude with CRYSTAL GLAZE FX firing.
CRYSTAL GLAZE FX	03:00	03:00 - 06:00	400	45	750	01:00	-	-	05:00	Firing to be used with CRYSTAL GLAZE FX to obtain the best gloss result. To increase / reduce the glossy effect, change the FINAL TEMPERATURE $\pm 5^{\circ}\text{C}$ at time.

This table was created using a Digital Fire F10 ceramic furnace, all the data shown are to be considered as indicative and must be evaluated and modified according to the restoration to be carried out.

Parameters such as the size of the restoration, number of elements fired together, as well as the type of furnace, age, software update, etc. are factors that must be taken into consideration before starting cooking.

After firing, the elements must be bright and shiny, much brighter if compared to a common metal-ceramic.

On MONOLITHIC ZIRCONIA, to obtain this result, the FINAL TEMPERATURE can also be varied by $\pm 30^{\circ}\text{C}$; for a correct evaluation, it is recommended to carry out several simulations with intervals of $\pm 5^{\circ}\text{C}$ at a time.

On LITHIUM SILICATE, to obtain this result you can vary the HOLDING TIME, increasing it; for a correct evaluation, it is recommended to carry out several simulations with intervals of ± 15 seconds at a time.

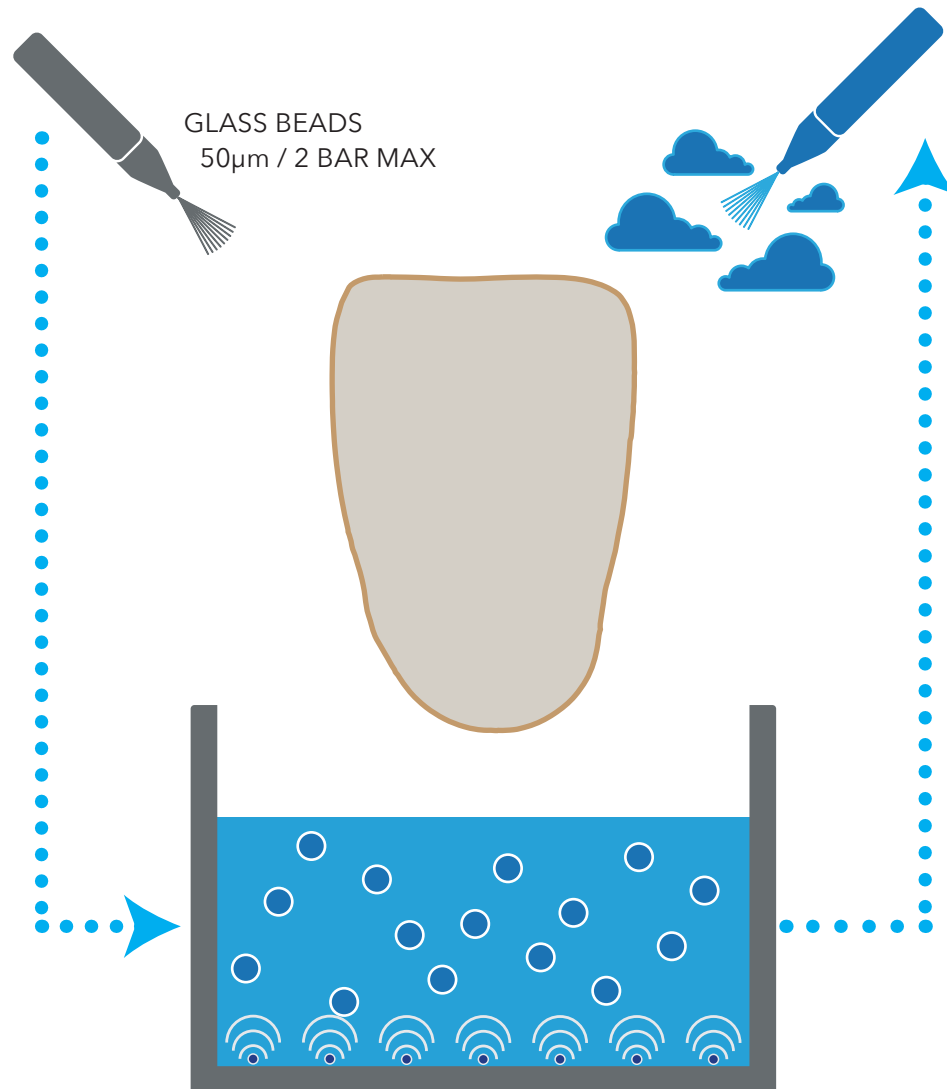
ATTENTION: on LITHIUM SILICATE do not increase the final temperature! To obtain a more glossy and brilliant surface, the maintenance phase, HOLDING TIME, can be extended as needed.

For very large restorations (circulars, very long bridges, very large elements and/or if many elements are fired together) it is recommended to increase the DRYING TIME, CLOSING TIME, and OPENING TIME to protect the zirconia elements from thermal shocks.

For some types of oven it is necessary to set the END OF VACUUM temperature 1°C lower than the FINAL TEMPERATURE, so as to carry out maintenance, i.e. the HOLDING TIME, in the atmosphere.

IMPORTANT NOTE: Natural CRYSTAL ceramic is a special gel glass ceramic for micro-stratification. To obtain the best results, pay close attention to the vacuum start and end phases, adjusting them as shown in the table.

2.3 PREPARATION OF THE FRAMEWORK



MONOLITHIC ZIRCONIA:

- prepare the zirconia framework according to the manufacturer's instructions;
- after sintering, lightly sandblast with 50µm glass beads (recommended product: **T-GLASS 50**) at 2 atmospheres (MAX);
- clean with distilled water in an ultrasonic bath;
- clean gently with a steam jet.

LAYERED ZIRCONIA

PRESSED ON ZIRCONIA

LAYERED METAL-CERAMIC:

- gently sandblast the surface with aluminum oxide Al_2O_3 110µm (suggested product: **HALDOUR 110**) at 2 atmospheres;
- clean with distilled water in an ultrasonic bath;
- clean gently with a steam jet.



AESTHETICS AND FLUORESCENCE

- The micro-layering made with Natural CRYSTAL LIVE! on monolithic zirconia elements make the zirconia highly aesthetic and fluorescent.
- The naturalness of the colors and the liveliness of the elements is natural and perfectly integrated into the oral cavity.
- Fluorescence, a fundamental property for a highly aesthetic effect, guarantees a lively and vital aspect to the restoration even in low light conditions, ensuring that the prosthesis has the same visual behavior as the natural elements.

MADE BY:



NUNZIO ROSA
Laboratorio RDB
CASALE DI SCODOSIA - ITALIA

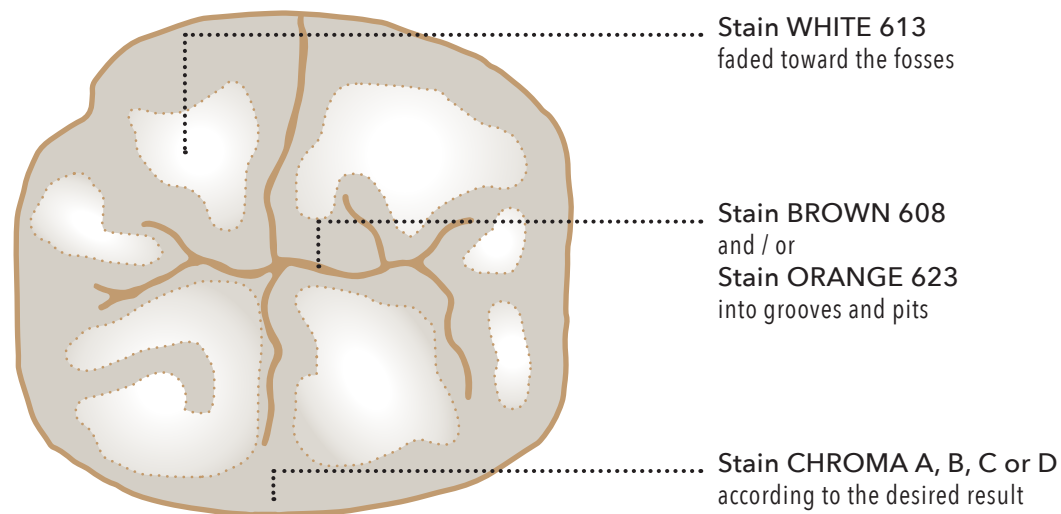
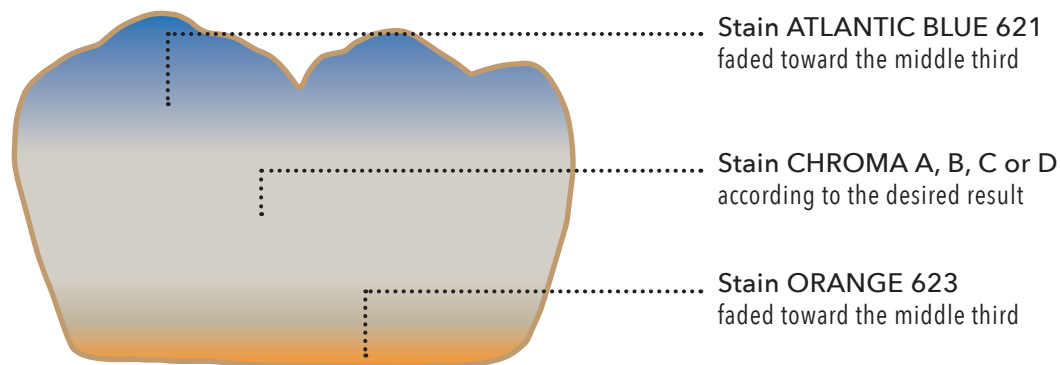
2.4 STAINING WITH CRYSTAL LIVE! AND STAINS

Coloring with CRYSTAL gel masses and Natural STAINS super-colors in very thin spaces, is very fast and simple: great aesthetic results can be achieved with just a few steps.

There are two techniques to create a unique and perfectly integrated restoration in the patient's mouth:

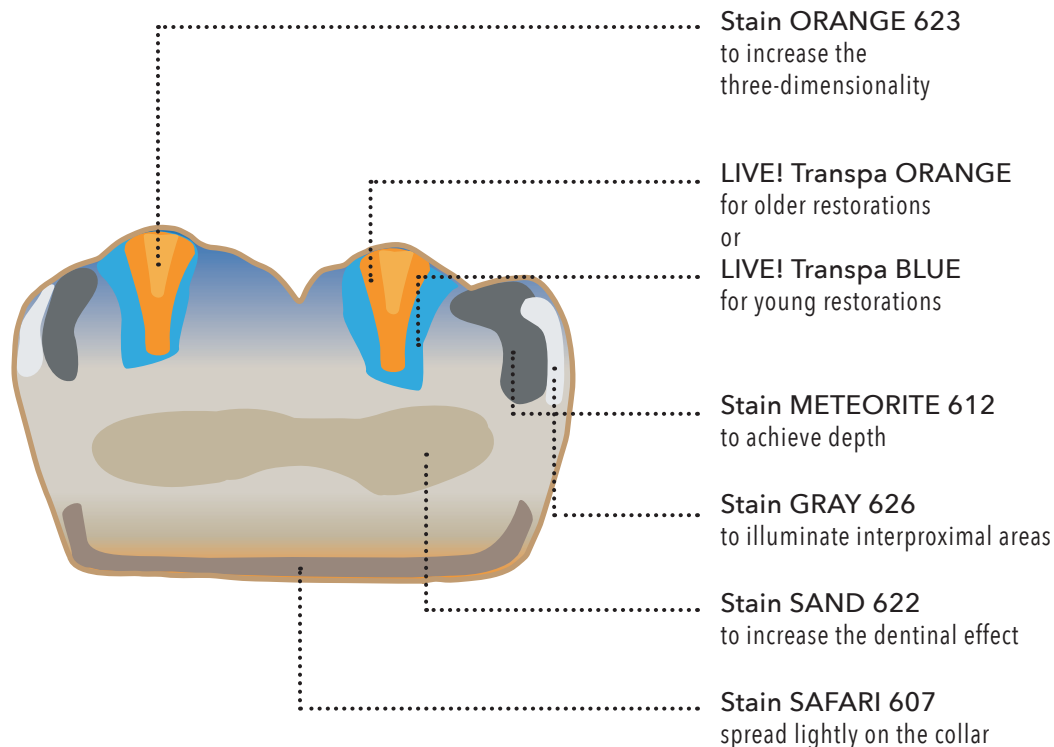
- "FAST" with a single firing a good aesthetic result is obtained;
- "STEP" with more firings the perfect individualization of the restoration is achieved, down to the smallest detail.

2.4.1 MOLAR STAINING - FAST



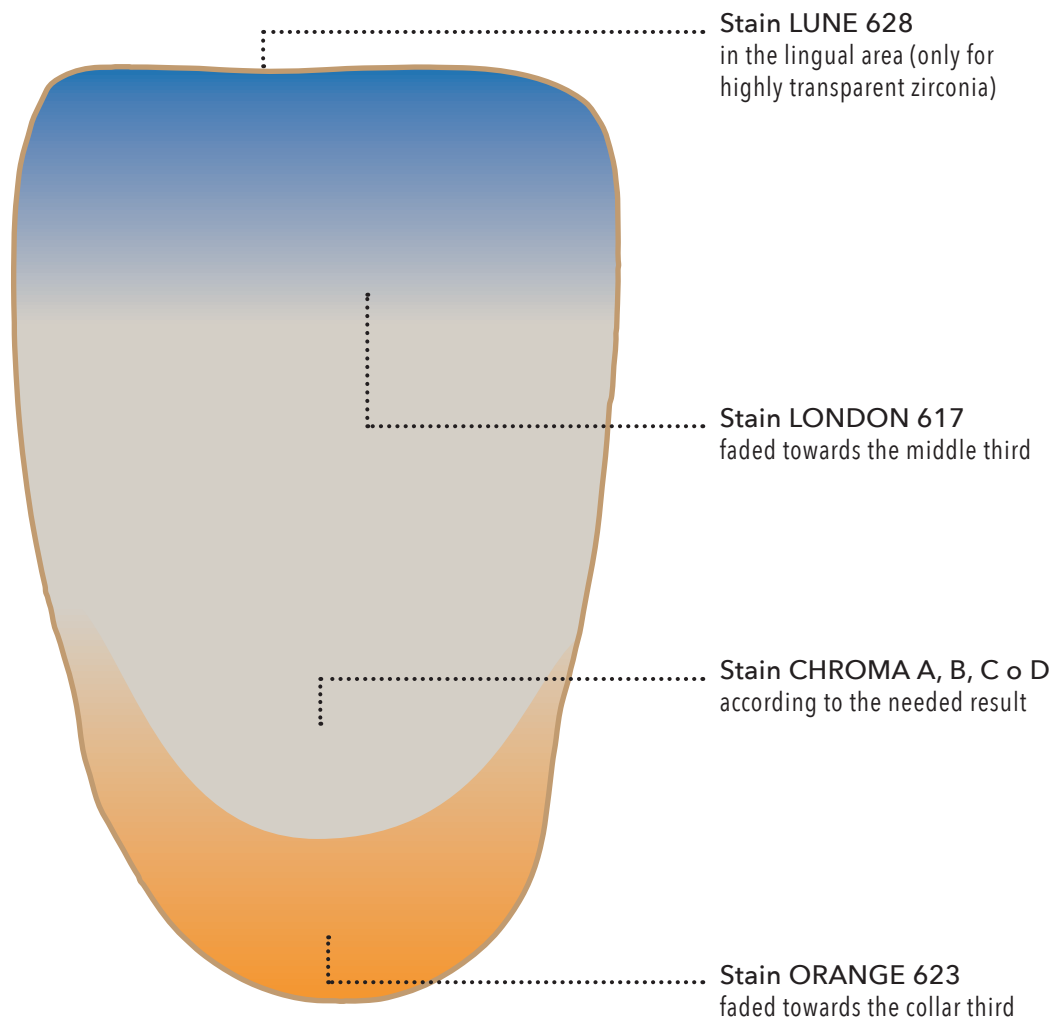
- PREPARATION:
- - mix the CRYSTAL gels and the STAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
- - spread a thin layer of MAC 01 on the element and blow lightly with air to dry the excess liquid;
- VESTIBULAR area COLORING:
- - color the cervical and dentinal area (1st and 2nd medium) blending towards the incisal area (3rd medium) with CROMA STAIN A, B, C or D according to the specific case;
- - if necessary, characterize the collar area with an intense color, for example STAIN 623 ORANGE, fading slightly;
- - coloring the incisal area (3rd medium) with a saturated color to increase the enamel effect, for example ATLANTIC BLUE 623;
- COLORING OCCLUSAL area:
- - coloring the cusps of the element with a very bright color , for example WHITE 621;
- - blend the base of the cusps with CROMA STAIN A, B, C or D depending on the case;
- - it is possible to characterize the pits area with a more saturated color and / or by mixing the CROMA STAIN used with ORANGE 623 or BROWN 608;
- FIRING:
- - cook according to the table; if the result is satisfactory, there is no need to glaze!

2.4.2 MOLART STAINING - STEP



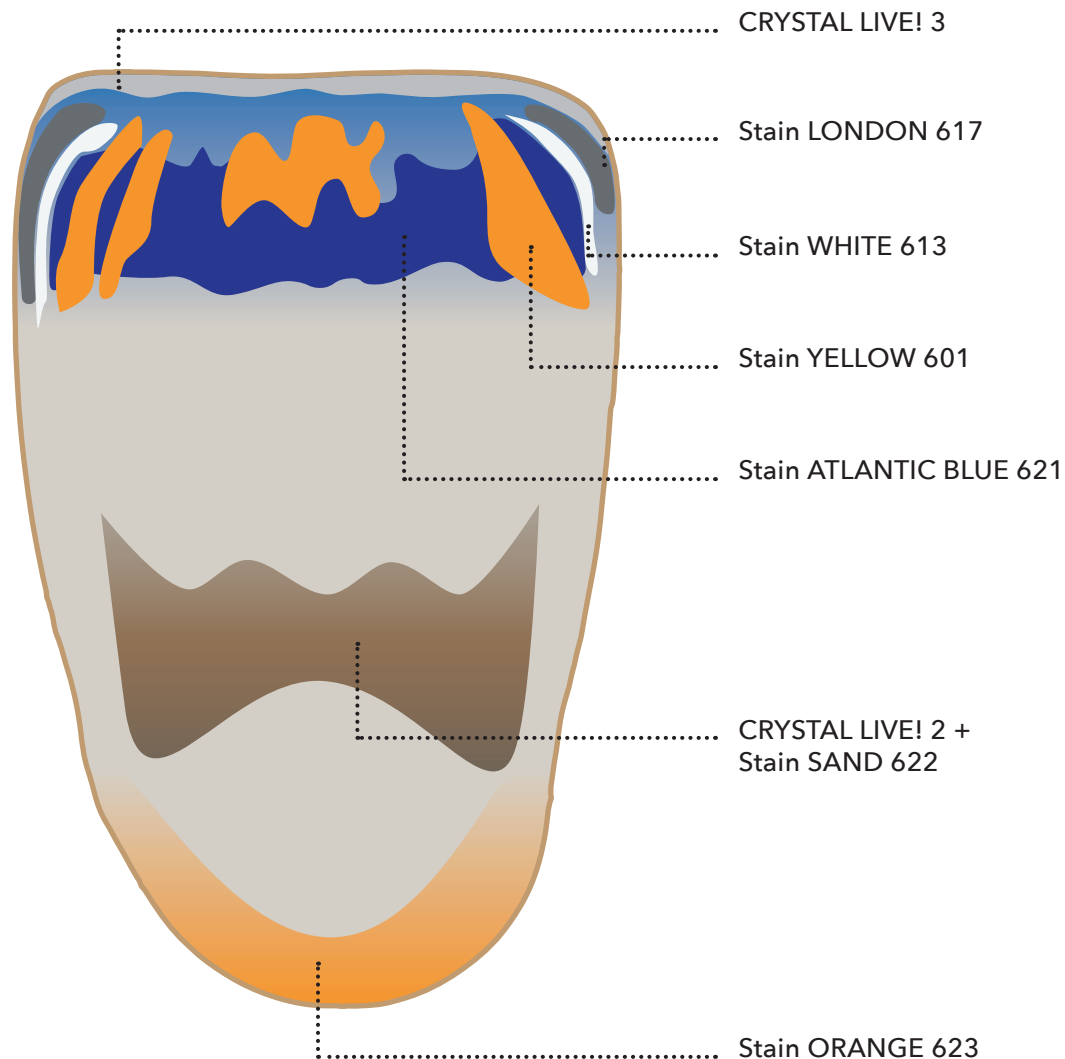
- PREPARATION:
- - mix the CRYSTAL gels and the STAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
- - spread a thin layer of STAINS & GLAZE LIQUID on the element and blow lightly with air to dry the excess liquid;
- VESTIBULAR AND OCCLUSAL COLORING:
- - perform the staining in the occlusal and labial areas as described in point 2.4.1 FAST MOLAR;
- - PERFORM THE COLOR FIXING FIRING as shown in the table;
- COLOR VESTIBULAR CHARACTERIZATION:
- - coloring the cervical area by characterizing the cervical border with the specific super-colors of the case, for example SAFARI 607;
- - accentuate the central area with a specific contrasting color, for example, you can use the Natural STAIN SAND 622 color;
- - color the incisal area (3rd medium) with contrasting colors to emphasize the enamel effect, for example METEORITE 612; GRAY 626 to illuminate specific areas; can also be used LIVE! ORANGE and LIVE! BLUE to create intercuspidal contrasts;
- FIRING:
- - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.4.3 INCISIVE STAINING - FAST



- **PREPARATION:**
 - - mix the CRYSTAL gels and the STAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
 - - spread a thin layer of STAINS & GLAZE LIQUID on the element and blow lightly with air to dry the excess liquid;
- **VESTIBULAR AND OCCLUSAL COLORING:**
 - - perform the staining in the occlusal and labial areas as described in point 2.4.1 FAST MOLAR;
 - - use a COLOR FIXING FIRING as shown in the table;
- **COLOR VESTIBULAR CHARACTERIZATION:**
 - - coloring the cervical area by characterizing the cervical border with the specific stain for the case, for example SAFARI 607;
 - - accentuate the central area with a specific contrasting color, for example, you can use the Natural STAIN SAND 622 color;
 - - color the incisal area (3rd medium) with contrasting colors to emphasize the enamel effect, for example METEORITE 612; GRAY 626 to illuminate specific areas; can also be used LIVE! ORANGE and LIVE! BLUE to create intercuspidal contrasts;
- **FIRING:**
 - - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.4.4 INCISIVE STAINING - STEP



PREPARATION:

- mix the CRYSTAL gels and the STAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
- spread a thin layer of LIQUID STAINS & GLAZE on the element and blow lightly with air to dry the excess liquid;

VESTIBULAR COLOR:

- perform the staining in the occlusal and labial areas as described in point 2.4.3 FAST FRONTAL;
- Use a COLOR FIXING FIRING as shown in the table;

COLOR VESTIBULAR CHARACTERIZATION:

- color the transition area between 1st and 2nd middle with LIVE! 2 pure and / or mixed with a dentinal stain, for example SAND 622;
- color the incisal area with LIVE! 3 to which we associate different colors to create the typical effects of layered teeth: YELLOW 601 to create the mamelon effect, LONDON 617 to emphasize the 2nd / 3rd medium transition and the enamel effect, ATLANTIC BLUE 621 in the inter-proximal areas, WHITE 613 to increase the effect of movement and torsion in the lateral areas;

FIRING:

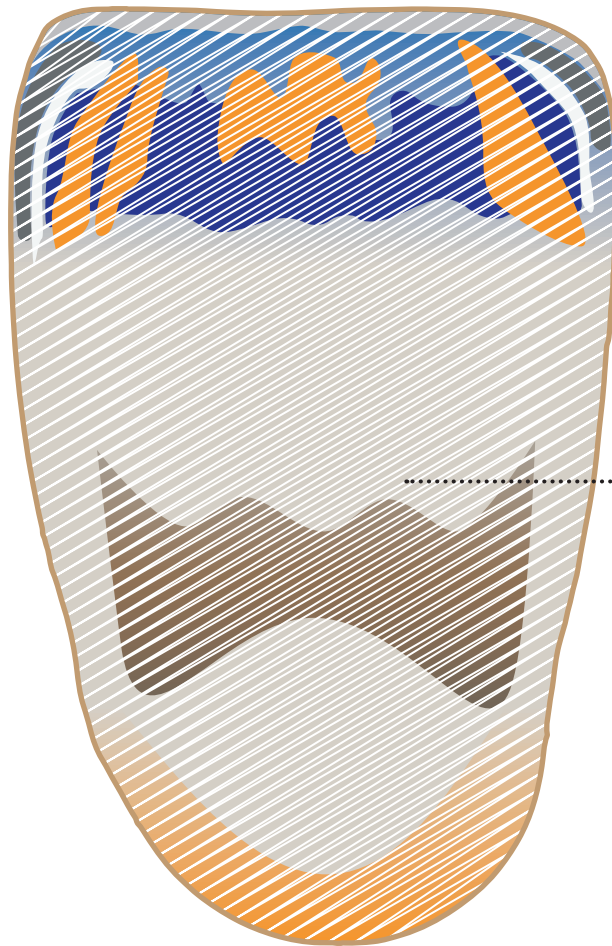
- fire according to the table; if the result is satisfactory, there is no need to glaze!

2.5 SHINE FIRING WITH CRYSTAL GLAZE FX

The CRYSTAL method aims to create an aesthetically superior element in very little space, with the microstratification technique of very small quantities of ceramic.

To achieve the best result, choosing the correct glaze is very important.

CRYSTAL GLAZE FX is a special ultra-fluorescent gel glaze, specially created to seal colors and increase the fluorescence of the restoration.



..... CRYSTAL GLAZE FX

PREPARATION:

- mix the CRYSTAL GLAZE FX gel vigorously inside the jar using a ceramic / zirconia spatula;

POLISHING OF THE RESTORATION:

Once the coloring is complete, two different methods can be used before CARRYING OUT THE FINAL FIRING of the element:

- RAPID METHOD (1 firing only): if you have Natural AIR GLAZE FX, you can spray a light layer of glaze spray on the element and carry out the glaze firing to finish the restoration;
- HIGH FLUORESCENCE METHOD (2 or more firings): if you do not have Natural AIR GLAZE FX or you prefer to have a further control step, perform the COLOR FIXING firing as shown in the table, if you want to intervene again with the stains it is possible continue to carry out the COLOR FIXING firing as often as necessary, until the result is satisfactory. Then apply a thin layer of CRYSTAL GLAZE FX and carry out the Glaze firing as shown in the table.



WHITE AESTHETICS AND PINK AESTHETICS

The micro-layering made with Natural CRYSTAL LIVE! and Natural CRYSTAL GUM allows to obtain surprising aesthetic results both in the gum area and in the dental area, both with minimum thicknesses and when there is the need to compensate the structure and finalize the shape of the restoration.

MADE BY: MAURIZIO CECCARELLI
 Laboratorio DENTAL PRO-FILE
 FIRENZE - ITALIA



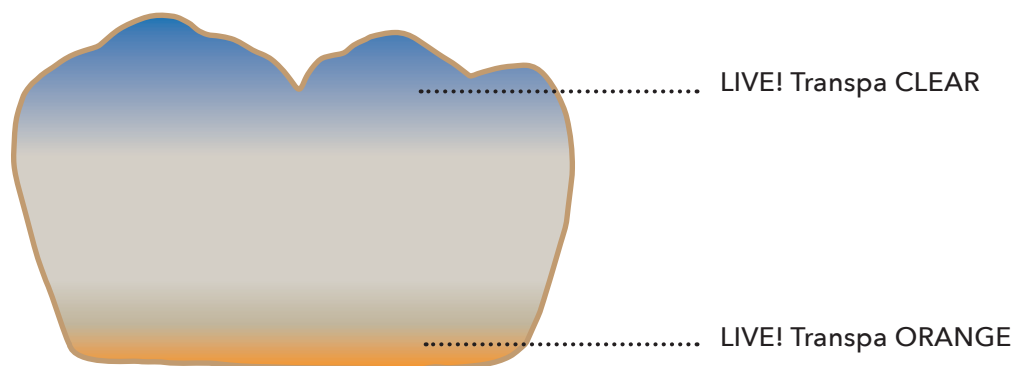
2.6 MICRO-LAYERING WITH CRYSTAL LIVE!

The micro-layering with the CRYSTAL gel masses and the Natural STAINS colors, already with reduced thicknesses of 0.2-0.1mm, allows to obtain effects of extraordinary naturalness, depth and translucency, in a simple and standardizable way.

Also in this case, to create a unique and perfectly integrated restoration in the patient's oral cavity, we have two methods available:

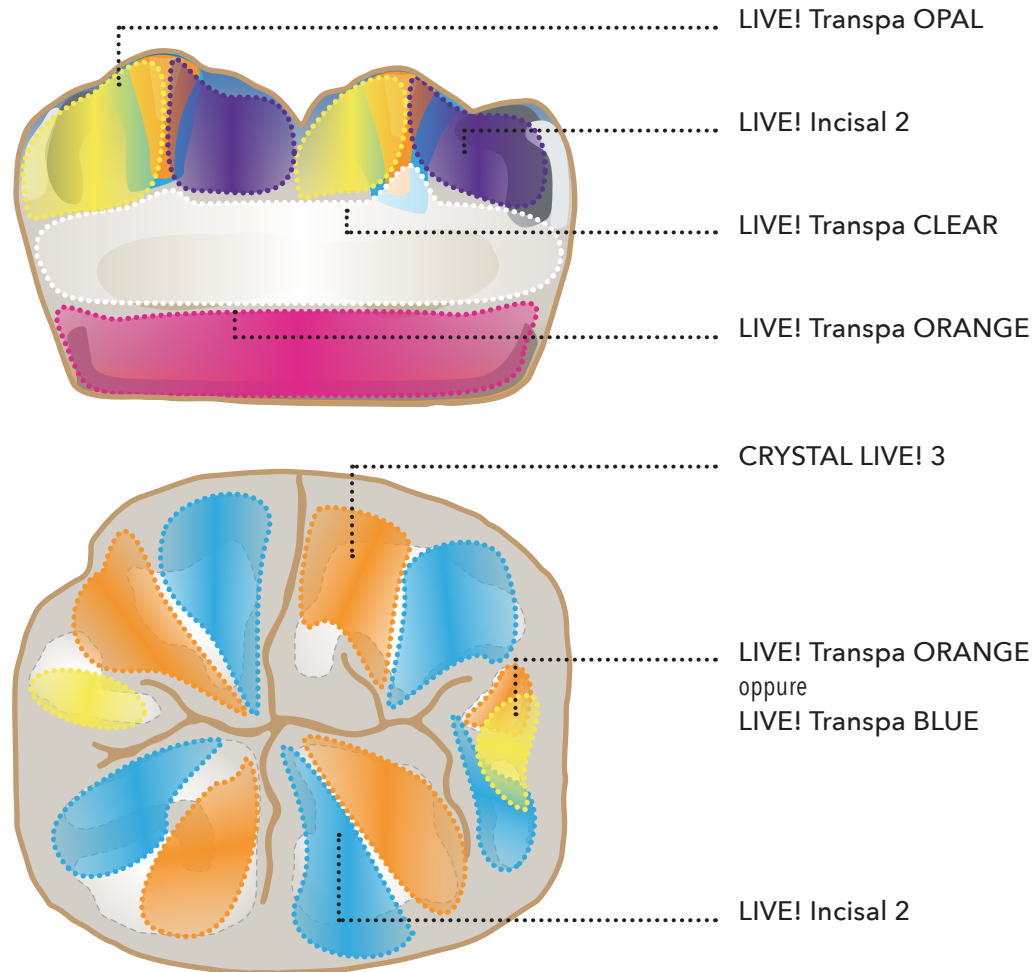
- "EASY" with a single firing a good aesthetic result is obtained;
- "ESTHETIC" with more firings the perfect individualization of the restoration is obtained, down to the smallest detail.

2.6.1 MOLAR MICRO-LAYERING - EASY



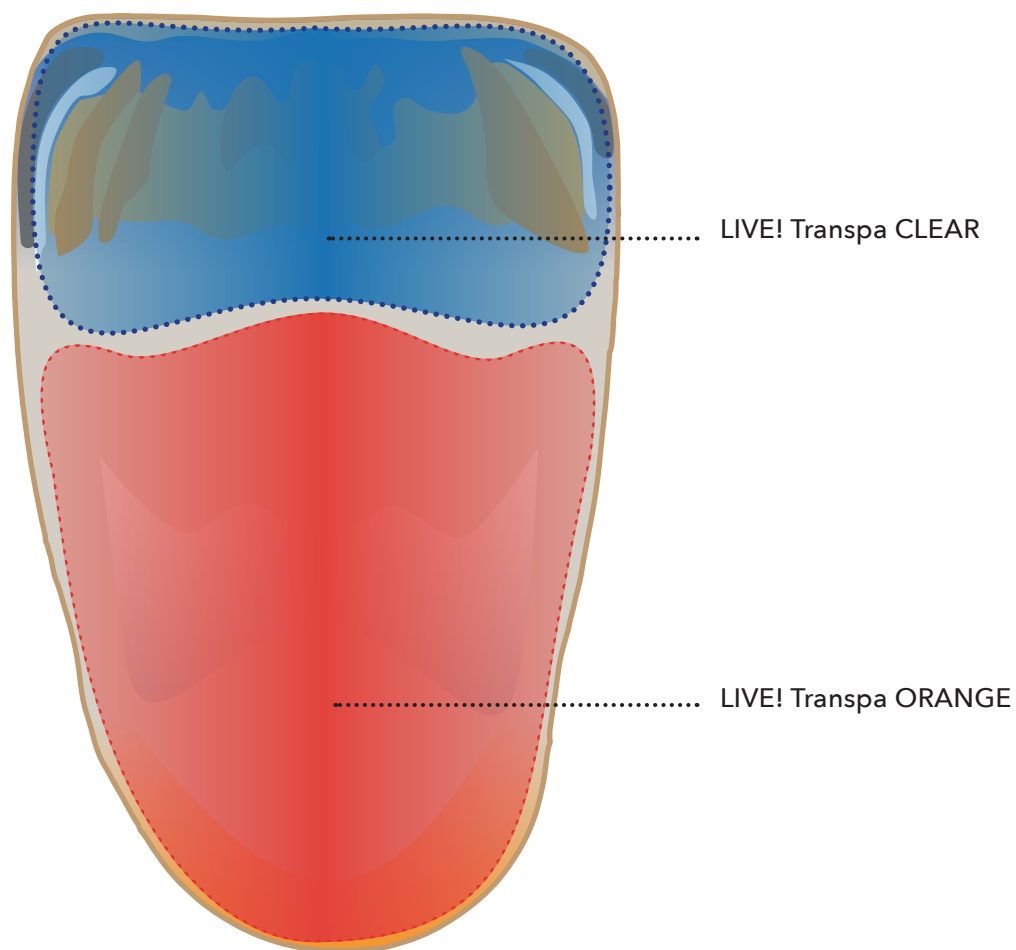
- PREPARATION:
- - perform the staining in the vestibular and occlusal area as reported in point 2.4.1;
- - carry out a COLOR FIXING firing at a low temperature;
- - mix the CRYSTAL gels vigorously inside their jar using a ceramic / zirconia spatula;
- MICRO-LAYERING the VESTIBULAR and OCCLUSAL areas:
- - spread a thin layer of CRYSTAL LIVE! ORANGE in the collar area and fading towards the body of the tooth (1st and 2nd middle);
- - spread a thin layer of CRYSTAL LIVE! CLEAR in the incisal area (3rd middle) to complete the element and on the occlusal face;
- The masses CRYSTAL LIVE! ORANGE and CRYSTAL LIVE! CLEAR layered this way will not change the aesthetic result of the colors previously placed on the element.
- - with a dry brush go to gently characterize the surface of the applied CRYSTAL gel masses, thus creating a surface texture.
- FIRING:
- - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.6.2 MOLAR MICRO-LAYERING - ESTHETIC



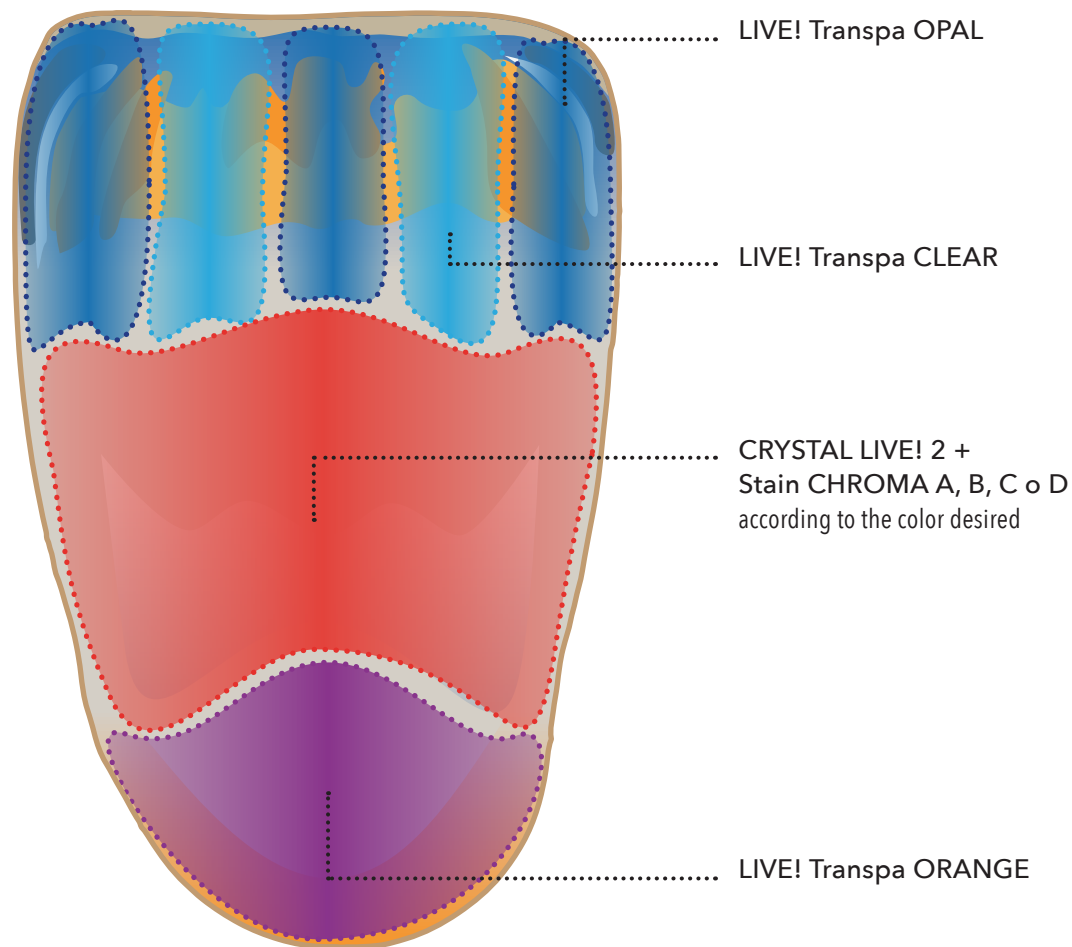
- PREPARATION:
 - perform the staining in the vestibular and occlusal area as reported in point 2.4.2;
 - carry out a COLOR FIXING firing at low temperature;
 - mix the CRYSTAL gels vigorously inside their jar using a ceramic / zirconia spatula;
- MICRO-LAYERING the VESTIBULAR area:
 - spread a layer of CRYSTAL LIVE! ORANGE in the collar;
 - blend the layer of CRYSTAL LIVE! CLEAR in the dentinal area;
 - spread a thin layer of CRYSTAL LIVE! OPAL and CRYSTAL LIVE! INCISAL in the incisal area, alternating the masses to increase the 3D effect;
- MICRO-LAYERING the OCCLUSAL area:
 - spread a thin layer of CRYSTAL LIVE! 3 and CRYSTAL LIVE! INCISAL alternating the masses on the slopes of the cusps, fading slightly towards the pits;
 - you can add some details with CRYSTAL LIVE! ORANGE and / or CRYSTAL LIVE! BLUE according to the state of wear and the age of the restoration that we are going to characterize;
 - with a dry brush go to gently characterize the surface of the applied CRYSTAL gel masses, thus creating a surface texture.
- FIRING:
 - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.6.3 INCISIVE MICRO-LAYERING - EASY



- PREPARATION:
- - perform the staining characterization in the vestibular area as reported in point 2.4.3;
- - carry out a COLOR FIXING firing at a low temperature;
- - mix the CRYSTAL gels vigorously inside their jar using a ceramic / zirconia spatula;
- MICRO-STRATIFICATION of the VESTIBULAR area:
- - spread a thin layer of CRYSTAL LIVE! ORANGE in the collar area and fading towards the body of the tooth (1st and 2nd middle);
- - spread a thin layer of CRYSTAL LIVE! CLEAR in the incisal area (3rd middle) to complete the element and on the occlusal face;
- The masses CRYSTAL LIVE! ORANGE and CRYSTAL LIVE! CLEAR layered this way will not change the aesthetic result of the colors previously placed on the element.
- - with a dry brush, gently characterize the surface of the CRYSTAL gel masses applied, thus creating a surface texture.
- FIRING:
- - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.6.4 INCISIVE MICRO-LAYERING - ESTHETIC



- **PREPARATION:**
 - - perform the staining characterization in the vestibular area as reported in point 2.4.3;
 - - carry out a COLOR FIXING firing at a low temperature;
 - - mix the CRYSTAL gels vigorously inside their jar using a ceramic / zirconia spatula;
- **MICRO-LAYERING of the VESTIBULAR area:**
 - - use the masses CRYSTAL LIVE! in the various areas according to the desired result;
 - - to increase the incisal effect it is possible to use the CRYSTAL LIVE! CLEAR material and CRYSTAL LIVE! OPAL in contrast
- The masses CRYSTAL LIVE! layered this way will not change the aesthetic result of the colors previously placed on the element.
- - with a dry brush go to gently characterize the surface of the applied CRYSTAL gel masses, thus creating a surface texture.
- **FIRING:**
 - - fire according to the table; if the result is satisfactory, there is no need to glaze!

2.7 FINISHING

Once the micro-layering firing has been completed and after the Glaze firing, the gloss and luster of the restoration can be adjusted via the bench polishing process.

Use a mixture of water and pumice stone if you are using the polishing machine (recommended for short and long bridges) or you can use a micromotor with a felt pad and diamond polishing paste (we recommend the use of the LIVE TOUCH set of very fine diamond pastes from iCeramist LINE).

3. CRYSTAL GUM

with CRYSTAL GUM gels you can obtain a sensational aesthetic result in less time and more easily than ever.

The CRYSTAL system was created to obtain fluorescence, translucency and chromaticity already with minimum thicknesses.

Furthermore, the low processing temperature does not change the characteristics of the surface, allowing excellent results already with one or two firings.

3.1 CRYSTAL GUM SYSTEM COMPOSITION

The CRYSTAL GUM system consists of:

- 5 luminous, light pink colored masses:
 - CHERRY PINK saturated pink, bright, very high value;
 - ORCHID PINK very saturated pink, bright, high value;
 - PEARL PINK light pink, very bright, high value, pearl effect;
 - SALMON PINK saturated pink, bright, high value, orange reflections;
 - VELVET PINK saturated pink, very bright, very high value;
- 4 bright, strong red intensive masses:
 - BURGUNDY RED saturated red, low brightness, intermediate value;
 - RUBY RED saturated red, bright, high value, orange reflections;
 - WINE RED very saturated red, dark, low value, violet reflections;
 - ALFA RED highly saturated red, bright, high value, deep red reflections;
- 1 bright, acromatic masse:
 - NEUTRAL acromatic, very high brightness, high value;

These masses are flanked by all the universal Natural STAINS super-colors; in particular, all the super-colors that have shades similar to the gum areas (orange, purple, brown, pink and red) are suitable for making customized mixes and shades: Chocolate 608, Violet 611, Pink 614, Deep Purple 615, Red Passion 616, Orange 623.

All CRYSTAL GUM materials are characterized by:

- very high stability both in brush modeling and in firing;
- possibility of creating a surface characterized by micro-layering;
- refraction of light very similar to natural tooth already with a minimum thickness (0.1-0.2 mm);
- low firing temperature to maintain the detail of the surface texture.



CRYSTAL GUM
NEUTRAL



CRYSTAL GUM
RED RUBY



CRYSTAL GUM
RED WINE



CRYSTAL GUM
RED BURGUNDY



CRYSTAL GUM
RED ALFA



CRYSTAL GUM
PINK CHERRY



CRYSTAL GUM
PINK ORCHID



CRYSTAL GUM
PINK PEARL



CRYSTAL GUM
PINK SALMON



CRYSTAL GUM
PINK VELVET



HIGH AESTHETICS ON ANY MATERIAL

With Natural CRYSTAL LIVE! and Natural CRYSTAL GUM it is possible to characterize, modify and customize elements and structures in every aspect.

In the photograph, characterization of the gum area of a toronto made of Natural HT ceramic layered on metal.

Realizzato da: MARIA DE LA CUESTA
Laboratorio DENTAL NORTE
OVIEDO - ESPAÑA



3.2 CRYSTAL GUM FIRING CHART

FIRING PROGRAM NAME	DRYING TIME	CLOSING TIME	START TEMPERATURE	HEAT RATE	FINAL TEMPERATURE	HOLDING TIME	VACUUM START	VACUUM END	OPENING TIME	NOTE
	min	min.	°C	°C / min.	°C	min.	°C	°C	min.	
GUM 1 st and 2 nd ZIRCONIA	03:00	03:00 - 06:00	400	45	770	02:00	670	770	05:00	Firing program for MONOLITHIC ZIRCONIA structures, the final temperature must be adjusted to obtain a satin and shiny surface, without bleaching the zirconia.
GUM 1 st and 2 nd LITHIUM SILICATE	03:00	03:00 - 06:00	400	45	770	02:00	670	770	05:00	Firing program for LITHIUM SILICATE structures, modify HOLD TIME and FINAL TEMPERATURE according to the LITHIUM SILICATE manufacturer's instructions. DO NOT OVERHEAT.
STAINS FIXING	03:00	03:00 - 06:00	400	45	700	01:00	670	700	05:00	Blocks colors and prevents mixing; it can be done several times to achieve the desired result. Conclude with CRYSTAL GLAZE FX firing.
CRYSTAL GLAZE FX	03:00	03:00 - 06:00	400	45	750	01:00	-	-	05:00	Firing to be used with CRYSTAL GLAZE FX to obtain the best gloss result. To increase / reduce the glossy effect, change the FINAL TEMPERATURE $\pm 5^{\circ}\text{C}$ at a time.

This table was created using a Digital Fire F10 ceramic furnace, all the data shown are to be considered as indicative and must be evaluated and modified according to the restoration to be carried out.

Parameters such as the size of the restoration, number of elements fired together, as well as the type of furnace, age, software update, etc. are factors that must be taken into consideration before starting cooking.

After firing, the elements must be bright and shiny, much brighter if compared to a common metal-ceramic.

On MONOLITHIC ZIRCONIA, to obtain this result, the FINAL TEMPERATURE can also be varied by $\pm 30^{\circ}\text{C}$; for a correct evaluation, it is recommended to carry out several simulations with intervals of $\pm 5^{\circ}\text{C}$ at a time.

On LITHIUM SILICATE, to obtain this result you can vary the HOLDING TIME, increasing it; for a correct evaluation, it is recommended to carry out several simulations with intervals of ± 15 seconds at a time.

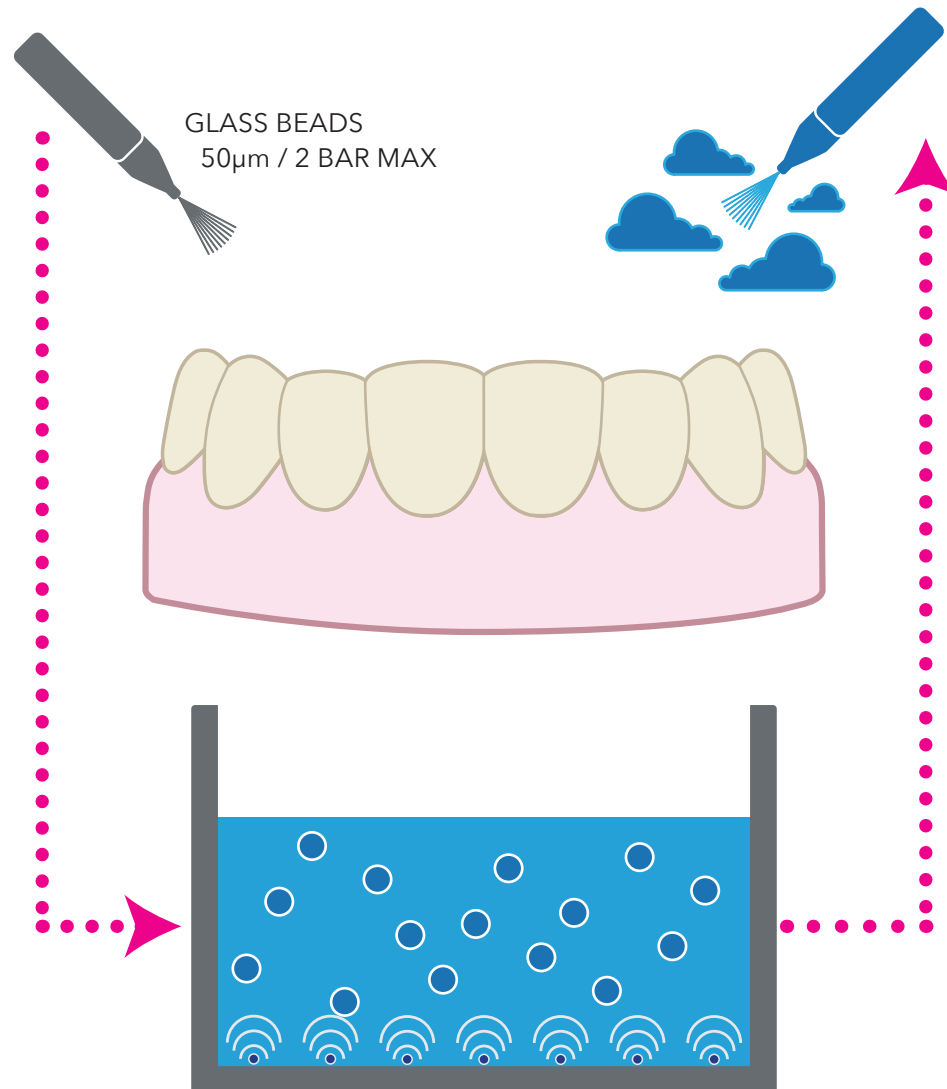
ATTENTION: on LITHIUM SILICATE do not increase the final temperature! To obtain a more glossy and brilliant surface, the maintenance phase, HOLDING TIME, can be extended as needed.

For very large restorations (circulars, very long bridges, very large elements and/or if many elements are fired together) it is recommended to increase the DRYING TIME, CLOSING TIME, and OPENING TIME to protect the zirconia elements from thermal shocks.

For some types of oven it is necessary to set the END OF VACUUM temperature 1°C lower than the FINAL TEMPERATURE, so as to carry out maintenance, i.e. the HOLDING TIME, in the atmosphere.

IMPORTANT NOTE: Natural CRYSTAL ceramic is a special gel glass ceramic for micro-stratification. To obtain the best results, pay close attention to the vacuum start and end phases, adjusting them as shown in the table.

3.3 PREPARATION OF THE FRAMEWORK



MONOLITHIC ZIRCONIA:

- prepare the zirconia framework according to the manufacturer's instructions;
- after sintering, lightly sandblast with 50µm glass beads (recommended product: **T-GLASS 50**) at 2 atmospheres (MAX);
- clean with distilled water in an ultrasonic bath;
- clean gently with a steam jet.

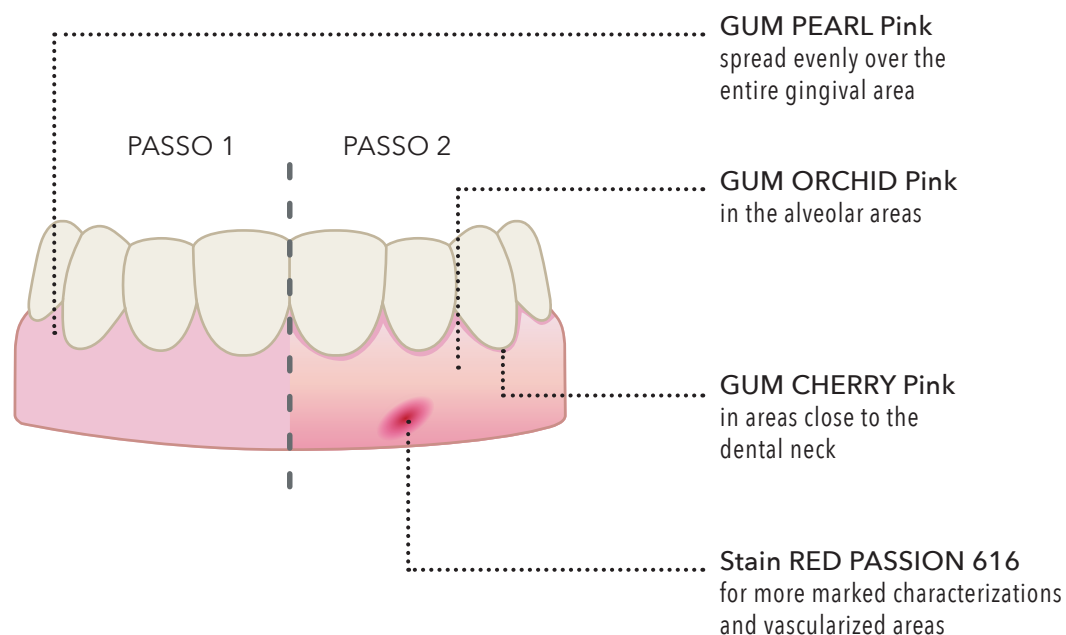
LAYERED ZIRCONIA

PRESSED ON ZIRCONIA

LAYERED METAL-CERAMIC:

- gently sandblast the surface with aluminum oxide Al_2O_3 110µm (suggested product: **HALDOUR 110**) at 2 atmospheres;
- clean with distilled water in an ultrasonic bath;
- clean gently with a steam jet.

3.4 STAINING WITH CRYSTAL GUM AND STAINS



PREPARATION:

- mix the CRYSTAL gels and the STAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
- spread a thin layer of LIQUID STAINS & GLAZE on the element and blow gently with air to dry the excess liquid;

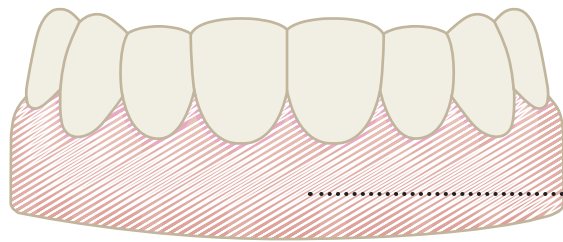
COLORING:

- STEP 1: evenly spread a light layer of CRYSTAL GUM gel ceramic in the lightest shade of those found for the restoration.
- STEP 2: characterize the papilla and alveolar areas, as well as blood vessels, blending the CRYSTAL GUM masses towards the cervical areas;
- use the lighter CRYSTAL GUM masses such as GUM CHERRY PINK near the dental necks;
- it is possible to characterize and add some nuances in the most characterized areas also with the RED PASSION 616 stains;

FIRING:

- fire according to the table; if the result is satisfactory, there is no need to glaze!

3.5 SHINE FIRING WITH GLAZE FX



GLAZE FX
spread evenly over the
entire gingival area

PREPARATION:

- mix the Natural GLAZE FX glaze paste inside its jar using a ceramic / zirconia spatula;
- spread a thin layer of LIQUID STAINS & GLAZE on the element and blow lightly with air to dry the excess liquid;

LAYERING:

- spread a small amount of Natural GLAZE FX on the entire restoration characterized with the CRYSTAL GUM materials; for this operation we recommend the use of non-fluorescent glaze paste: it is possible to use other types of fluorescent glazes, bearing in mind, however, that in the event of exposure to ultra-violet light the gingiva layered with fluorescent glaze will have an unnatural response.

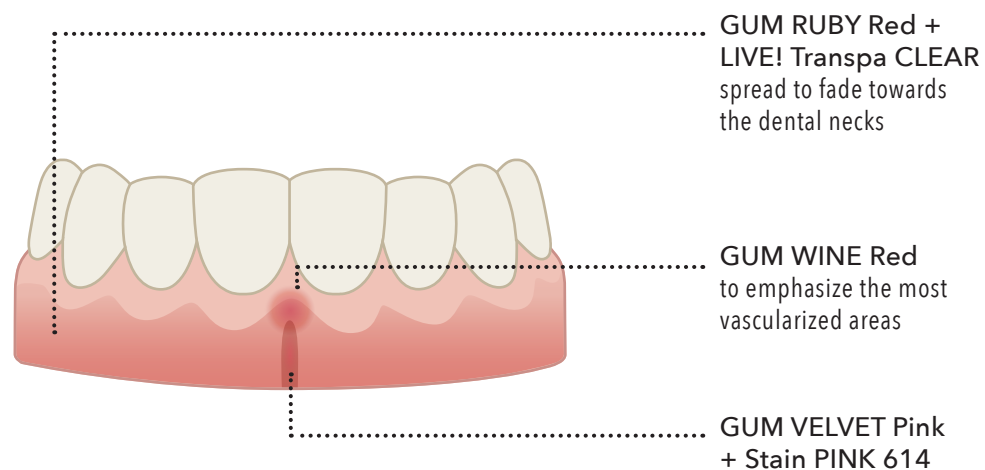
FIRING:

- fire according to the table.

WARNING:

- due the non-fluorescent nature of the soft gingival tissues, the use of non-fluorescent NATURAL GLAZE FX paste is recommended

3.6 MICRO-LAYERING WITH CRYSTAL GUM AND STAINS



PREPARATION:

- perform the staining of the gingival area as in point 3.4;
- carry out a color fixing firing following the table;
- mix the CRYSTAL gels and the S TAINS paste vigorously inside their jar using a ceramic / zirconia spatula;
- spread a thin layer of LIQUID STAINS & GLAZE on the element and blow lightly with air to dry the excess liquid;

Micro-layering of the gingival area:

- mix a small amount of CRYSTAL GUM RUBY RED with some CRYSTAL LIVE! CLEAR in 1: 1 ratio;
- layer the mix fading towards the necks of the teeth;
- the CRYSTAL GUM RED masses can be used to emphasize the most vascularized areas;
- it is possible to recreate the labial frenulum using a small amount of CRYSTAL GUM VELVET PINK adding it with a little quantity of STAIN PINK 614 in a 1: 1 ratio;
- with a dry brush, gently characterize the surface of the CRYSTAL gel masses applied, thus creating a surface texture.

FIRING:

- fire according to the table; if the result is satisfactory, there is no need to glaze!

3.7 FINISHING

Once the micro-layering firing has been completed and after the Glaze firing, the gloss and luster of the restoration can be adjusted via the bench polishing process.

Use a mixture of water and pumice stone if you are using the polishing machine (recommended for short and long bridges) or you can use a micromotor with a felt pad and diamond polishing paste (we recommend the use of the LIVE TOUCH set of very fine diamond pastes from iCeramist LINE).

4. WARNINGS

CHEMICAL COMPOSITION:

Natural CRYSTAL main components of glass-ceramic:

SiO_2 , Al_2O_3 , K_2O , Na_2O , Li_2O , SrO , B_2O_3 , CeO_2 , ZnO

Natural STAINS main components of glass-ceramic:

SiO_2 , Al_2O_3 , K_2O , Na_2O , Li_2O , CaO , SrO , B_2O_3 , ZnO , F

Pigments:

inorganic pigments with ceramic lattices;

Main components of the gel:

1,3-Butandiol, water;

REGULATORY INFORMATION:

Natural CRYSTAL meets all the requirements of the applicable regulations on medical devices and production is certified acc. ISO 13485 and annex 2 of MDD 93/42.

Classification Medical device:

according to Annex IX, rule 8 MDD 93/42 IIa

according to Annex VIII, rule 8 MDR 2017/745 IIa

UMDNS Code: 16-187 Dental Ceramics

MDR Code, MDG 2019-14: MDT 2003, MDN 1103

EN ISO 6872 classification: Type 1, Class 1

TECHNICAL WARNINGS:

For dental use only. Product to be used only by qualified personnel, after reading this instruction manual.

It is recommended to use the product in a clean environment!

The material can be contaminated with foreign elements such as dust, finishing material, other ceramics and especially by

finishing powders of Cr.Co alloys; contamination can affect the cooking result and the final result with discolourations or stains. Always keep the jars tightly closed.

Always use clean tools, brushes and non-metallic spatulas must be dry and clean before use.

WARNING: during the finishing of structures and ceramics, dust and fragments may be released, we recommend the use of adequate suction, a protective mask and goggles.



Avoid contact of the material with skin and eyes.

WARNING: firings are carried out at high temperatures, the use of protective gloves is recommended.

Given the great variety of ovens on the market, there may be differences in the firing cycles.

This factor must be taken into account and evaluated independently by the user.

All temperatures reported are indicative, it is advisable to carry out tests before starting to use the product.

ATTENTION: Crystal gels must NOT come into contact with water and / or modeling liquids, opaque, shoulder mass.

Use only Liquid Stains & Glaze and / or Liquid Crystal liquids.

It is recommended to treat the zirconia frameworks following the instructions provided by the zirconia manufacturer.

Carefully read the instructions for use provided by the zirconia manufacturer.

CONTRAINDICATIONS:

Do not mix CRYSTAL with products from other manufacturers.
Do not use on materials other than those indicated.

Structures with sharp corners and / or edges or structures not anatomically reduced.

Dental ceramic and all-ceramic restorations are not recommended for patients with bruxism and parafunction.

STORAGE:

The material can be stored at room temperature without particular limitations.

Any separation of the liquid from the paste can be mixed inside the jar.

Once the jars are opened, the gel inside them can tend to dry out over time; to restore the optimal creaminess, add a few drops of Natural Stains & Glaze liquid to the jar and mix well.

Under normal storage conditions the material has no interactions with temperature, humidity, light.

Under normal conditions, the material does not expire.

Best storage conditions: 12-38°C, humidity 40-60%.

DISCLAIMER OF LIABILITY:

We assume no responsibility for damage caused by improper use or use other than that indicated.

CRYSTAL is a material for dental use only.

Before use, it is advisable to test the compatibility of the product with the materials used in the laboratory.

We assume no responsibility for damage caused by interaction with materials not indicated and/or products of other manufacturers.

Tressis Italia takes responsibility exclusively for the correctness of the data provided within the limits established by law.

SYMBOLS PRESENT ON THE PACKAGES:

-  Manufacturer
-  Production date YYYY MM
-  Medical device
-  Production lot / batch
-  Catalogue product code
-  Unique identification of the medical device
-  WARNING: consult the instructions for use

ATTENTION: Not necessarily all the symbols mentioned are present on the product packaging at the same time.

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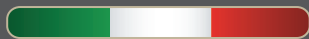
F10
FURNACES



VERSION:	2.00
MADE:	2021-03-01
ULTIMA MODIFICA:	2022-12-03



Natural
CERAMIC
SYSTEM

DENTAL CERAMIC

ITALIAN STYLE

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CRYSTAL

SPECIAL PASTE CERAMIC FOR ZIRCONIA, LITHIUM SILICATE AND METAL-CERAMIC

CRYSTAL LIVE! & CRYSTAL GUM

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