

9^o CONGRESSO
DA INDÚSTRIA
CERÂMICA DE
REVESTIMENTO



COLOROBBLIA®

SHAPING INNOVATION

 **ASPACER**
Associação Paulista das Cerâmicas de Revestimento



DIGITAL INKS

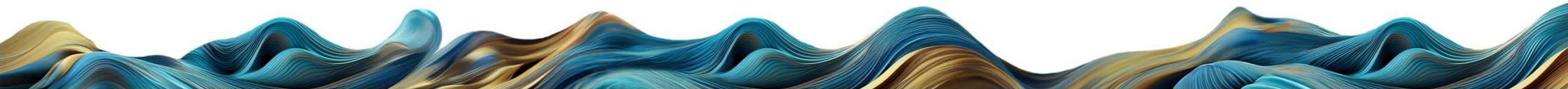


3 SERIES OF PRODUCTS FOR DIGITAL DECORATION :

ETR

SPS

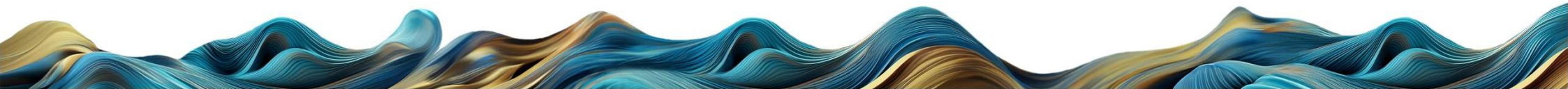
AIR



«*ETR*» Series

EXTENDED TEMPERATURE RANGE

- Composition with solvent base of plant origin
- Ink series without hazard classification
- High content in pigment
- High intensity and colour stability between batches
- Designed to achieve high productivity in the production line and in more demanding temperature conditions
- Easy cleaning of print-heads and low frequency of productive downtimes
- Suitable for all types of inkjet print-heads and ceramic digital printing machines
- Working temperature of print-heads up to 50°C



«SPS» Series

SPECIAL PARTICLE SIZE

<i>HT WHITE</i>	IKSE 00001
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<i>HT WHITE</i>	IKSE 00003
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<i>GLOSSY</i>	IKSE 20001
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<i>LT GLOSSY</i>	IKSE 20005
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<i>FULL GLOSSY</i>	IKSE 20002
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<i>HT SHINY</i>	IKSE 20007
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<i>HT SHINY</i>	IKSE 20008
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<i>LUSTER</i>	IKSE 30001
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<i>ANTI-SLIP</i>	IKSE 10005
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<i>ANTI-SLIP</i>	IKSE 10006
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<i>MULTIFUNCTION</i>	IKSE 60001
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<i>GLOSSY GLUE</i>	IKSE 80010
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<i>MATT GLUE</i>	IKSE 80009
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<i>MATT GLUE</i>	IKSE 80013
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<i>GRAFFITI WHITE</i>	IKSE 70001
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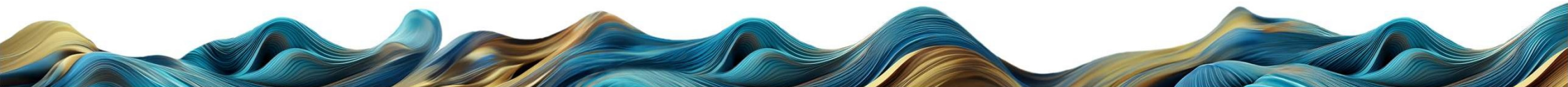
<i>GRAFFITI MATT</i>	IKSE 70002
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<i>GRAFFITI HYDROACTIVE</i>	IKSE 70003
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<i>GRAFFITI GLOSSY</i>	IKSE 70004
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<i>GRAFFITI NEUTRAL</i>	IKSE 70005
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<i>HIGH MATT TOPCOAT</i>	IKSE 10602
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COLOROBBLIA®

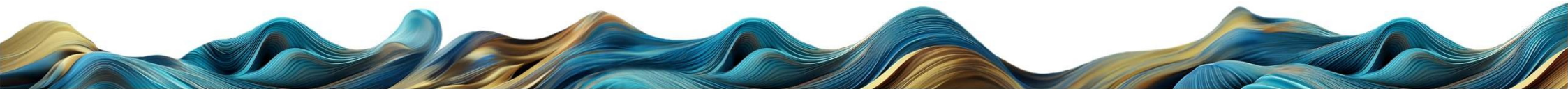
9° CICR-ASPACER, 22-24 OCTOBER 2024

GRAFFITIINKS

Carving, Rocker, Deep Ink, Open Glaze, DigiMould, Structuring Ink, Shape Ink



Hydro-Active INKS : an
«**APPLICATION
CONCEPT**» for creating
micro-reliefs



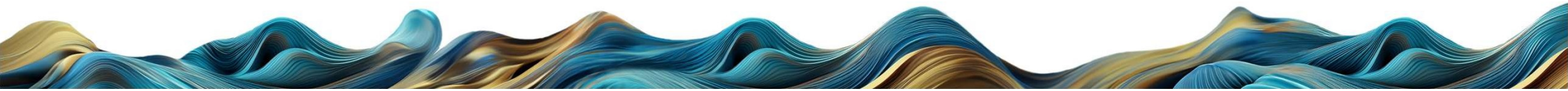
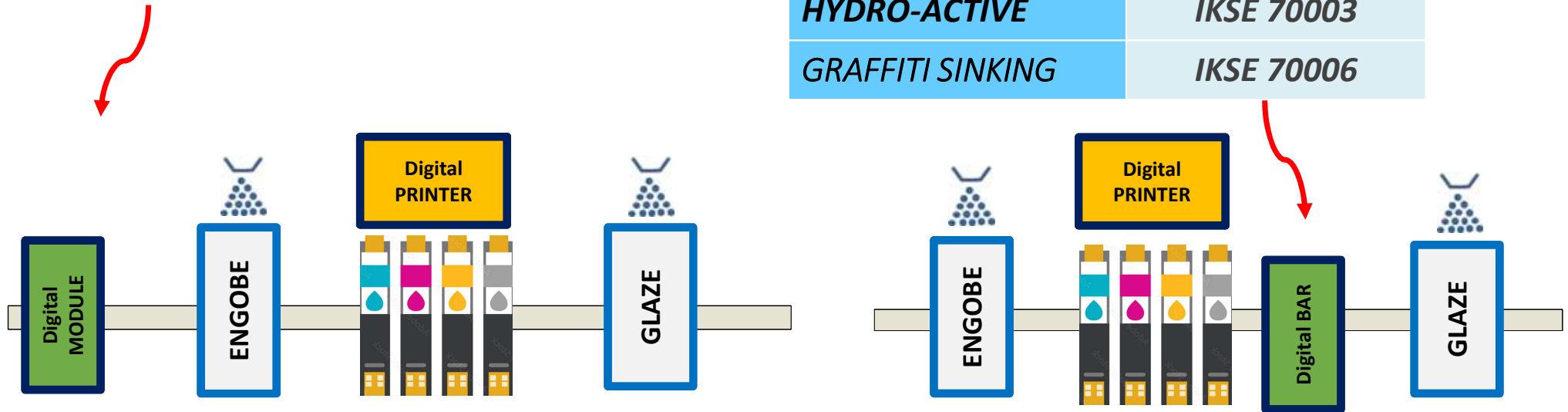
GRAFFITIINKS

“BOTTOM” application (Before Engobe)

<i>GRAFFITI WHITE</i>	<i>IKSE 70001</i>
<i>GRAFFITI MATT</i>	<i>IKSE 70002</i>

“TOP” application (After CMYK colors)

<i>GRAFFITI MATT</i>	<i>IKSE 70002</i>
<i>GRAFFITI GLOSSY</i>	<i>IKSE 70004</i>
<i>GRAFFITI NEUTRO</i>	<i>IKSE 70005</i>
<i>HYDRO-ACTIVE</i>	<i>IKSE 70003</i>
<i>GRAFFITI SINKING</i>	<i>IKSE 70006</i>



IKTE 60002 = «RECORD» Ink

Invisible ink under visible light.

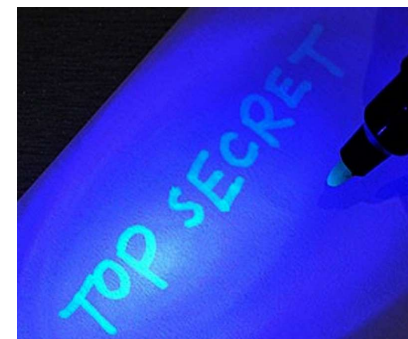
Only visible **under UV light** developing a RED color.

Born as a security measure to prevent falsifications (tickets, banknotes, official documents) and as a secret communication (espionage,...).

Over time it has opened up to other uses that allow the public to interact with the product.

Possible uses:

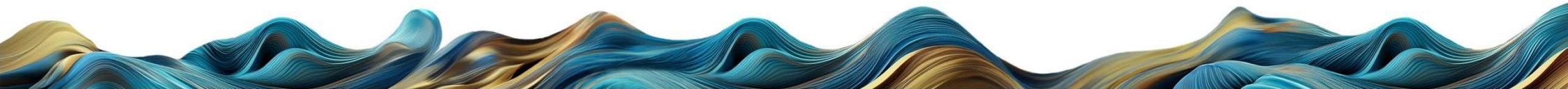
- TRACEABILITY
- SIGNALLING
- ARTISTIC



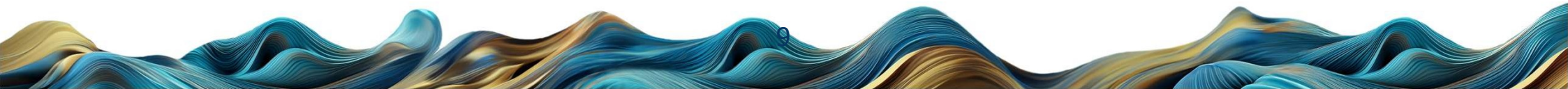
IKTE 60002 = «RECORD» Ink

Considerations for use

- As a final application or covered by transparent top coats (glaze/grit) by dry application (repellency problems under study with wet applications)
- Underglaze affects the result
- Limited effect on dark graphics
- Suitable for all kind of industrial firing conditions in tile/tableware ceramics
- Suitable for M type printheads
- Required laydown: app. 10 g/sqm



FULL DIGITAL



FULL DIGITAL

WIDE CONCEPT BASED ON A SEQUENCE OF DIGITAL APPLICATIONS

Two additional decorating **BLOCKS** are identified, one before colour decoration and one after it.

1st printer module
DIGITAL ENGOBE

2nd main digital printer
CMYK COLORS INKS

3rd printer module
DIGITAL TOPCOAT



Classic
FULL DIGITAL

OTHER DIGITAL TECHNOLOGIES CAN BE INTRODUCED IN THIS CONCEPT:

- For full covering smaltobbio/glaze
- For selective application of smaltobbio/glaze
- For glue plus grit decoration

Hybrid
FULL DIGITAL



1st PRINTER MODULE:

- At least 2 bars (10-60 gr/m2)
- Playing with 2 inks to regulate opacity and hide defects.

2nd PRINTER MODULE:

CMYK Inks

3rd PRINTER MODULE:

- At least 2 bars (10-40 gr/m2)
- Playing with 2 inks to regulate surface finishes according to firing cycles.

• **Digital ENGOBE:**

IKSE00301

IKAE00302

• **Digital White:**

IKAE00001 / IKSE00003

• **Digital Multifunction:**

IKSE41001

• **GRAFFITI White:**

IKSE70001

• **GRAFFITI Matt:**

IKSE70002

• **ETR Series**

• **SPS Series**

• **AIR EVOLUTION Series**

• **Digital Glossy:**

IKAE20002 / IKAE20007

• **Digital Matt:**

IKSE10601 / IKSE10602/ IKSE10603 / IKSE10604/ TSM41003

• **Digital Matt Shield:**

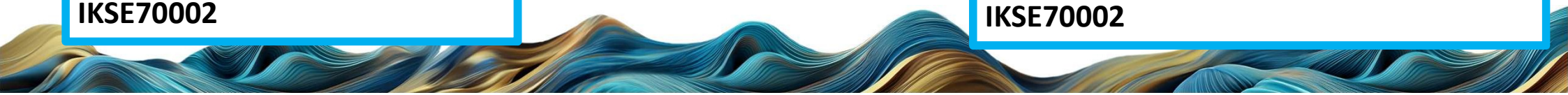
IKSE41002

• **Digital Anti-slip:**

IKSE10005

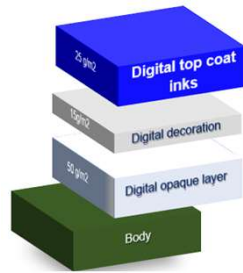
• **GRAFFITI Matt:**

IKSE70002



Classic **FULL DIGITAL**

sandwich application



FINAL PRODUCT REQUIRED TECHNICAL FEATURES :

- ❖ WHITNESS/OPACITY
- ❖ RESISTANCE TO STAIN
- ❖ CHEMICAL RESISTANCE
- ❖ NO REFLEX MATT SURFACE (GLOSSYNESS)
- ❖ COLOUR DEVELOPMENT – BEST INKS’ RANGE
- ❖ SLIP RESISTANCE
- ❖ RESISTANCE TO ABRASION (PEI)

COLOROBBLIA
DIGITALSPACE

Full Digital

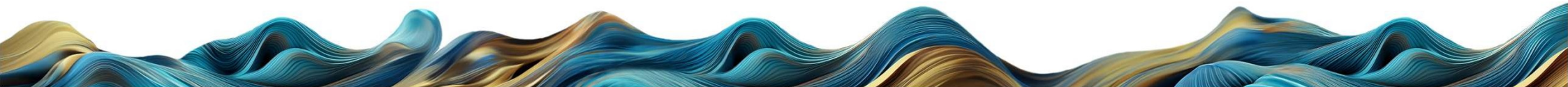
IKTP 01001 IKTP 01006 IKTP 06004 IKSP 03001 IKSP 02001 IKTP 02002 IKTP 04001 IKTP 05001 IKTP 05003

Engobe IKSE00301 Top Coat IKSE10601

Top Coat IKSE10601 + Top Coat IKSE10602 Top Coat IKSE10602

«AIR» Series

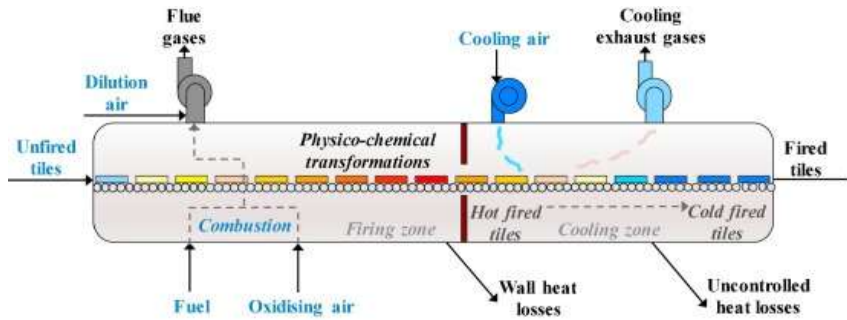
LOW EMISSION INKS



COLOROBBLIA®

AIR SERIES

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Very complex decomposition reactions greatly affected by kiln conditions.

REGULATIONS - MAIN INTEREST IN ITALY 

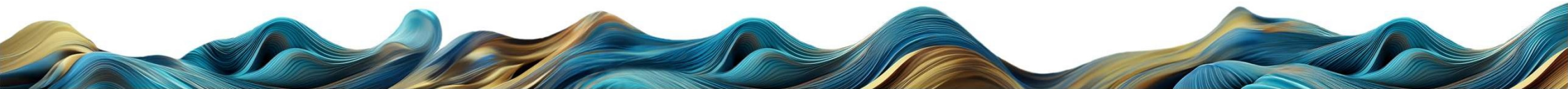


ALDEHYDES

ODORS

VOCS

FORMALDEHYDES





SOLVENT BASED INKS



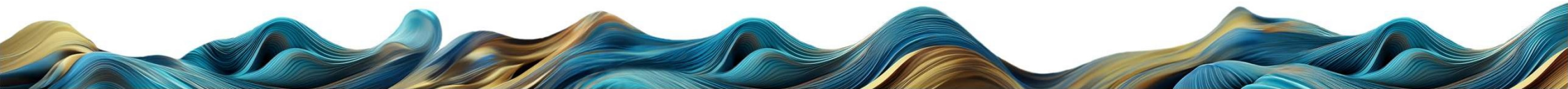
- NEW FORMULATION TO REDUCE ODOURS
- EASY TO CHANGE FROM ETR TO AIR EVOLUTION WITHOUT CLEANING DIGITAL PRINTERS
- GOOD INDUSTRIAL PERFORMANCE IN CUSTOMERS
- LIMITED REDUCTION OF BAD ODOURS, IN CASE OF HIGH LAYDOWN APPLICATIONS SUCH US GLUE INKS



WATER BASED PRODUCTS

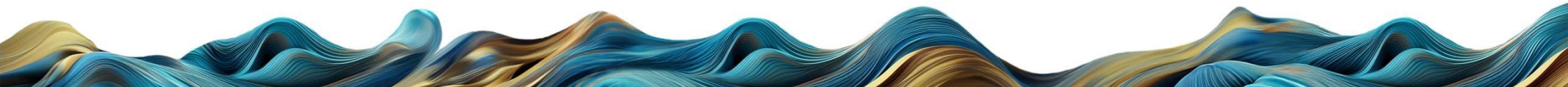


- NEW FORMULATION, MORE COMPLEX CHEMISTRY THAN SOLVENT INKS
- DIFFICULT TO CHANGE.
- NEW TECHNOLOGY NEEDED AND NO CONFIDENCE FROM THE CUSTOMER
- PRINTHEADS RELIABILITY
- LIMITATIONS IN THE GLAZING LINE RELATED TO TILE TEMPERATURE AND VAPOURS



REFERENCE LIST

 **AIR**
evolution
SOLVENT BASED INKS



«AIR» Inks RANGE

BLUE	IKAP 01001
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BLUE	IKAP 01003
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BLUE	IKAP 01004
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BLUE	IKAP 01011
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BROWN	IKAP 06001
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VULCANO BROWN	IKAP 06004
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CITRUS YELLOW	IKAP 02005
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HONEY	IKAP 02002
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BEIGE	IKAP 08002
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BLACK	IKAP 04001
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BLACK	IKAP 04008
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PINK	IKAP 09002
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GREEN	IKAP 05001
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WHITE	IKAE 00001
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WHITE	IKAE 00003
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GLOSSY	IKAE 20001
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FULL GLOSSY	IKAE 20002
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HT SHINY	IKAE 20007
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MULTIFUNCTION	IKAE 60001
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ANTI-SLIP	IKAE 10005
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GLOSSY GLUE	IKAE 80010
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MATT GLUE	IKAE 80009
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MATT GLUE	IKAE 80013
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GLOSSY	IKAE 20001
---------------	------------

FULL GLOSSY	IKAE 20002
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HT SHINY	IKAE 20007
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DIGITAL ENGOBE	IKAE 00302
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SOFT MATT TOP COAT	IKAE 10603
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GLOSSY WB GLUE	IKAE 80001
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NEUTRAL WB GLUE	IKAE 80002
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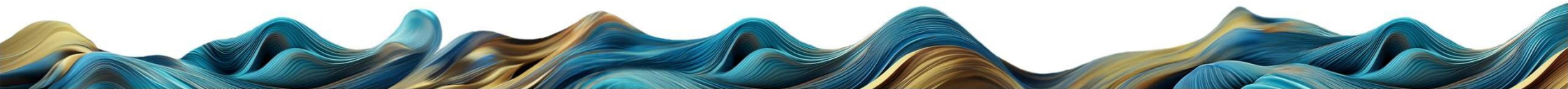
GLOSSY WB GLUE	IKAE 80005
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INDUSTRIAL EMISSIONS – Customer RESULTS



TOTAL LAYDOWN = DARK MARBLE DESIGN 25gr/m2	Odour (uOg/m3)	VOCs (mg/Nm3)	Aldehydes (mg/Nm3)
ETR Solvent Inks	HIGH	HIGH	HIGH
AIR EVOLUTION Solvent Inks	-70%	-65%	-50%



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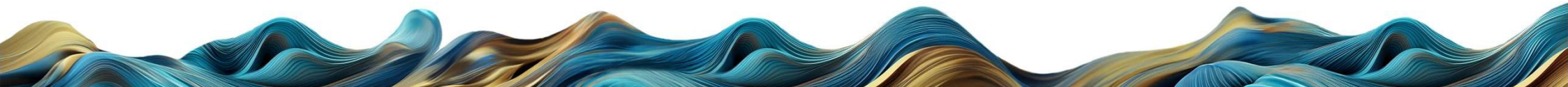


WATER BASE DIGITAL GLUE

INDUSTRIAL EXPERIENCES

MAINZU
c e r a m i c a

ABK GROUP
I N D U S T R I E C E R A M I C H E S P A



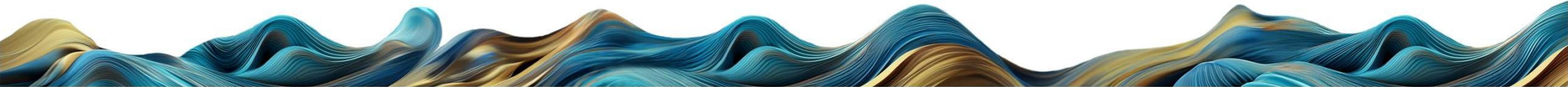
COLOROBIA®



WATER BASE DIGITAL GLUE

INDUSTRIAL EMISSIONS – Customer RESULTS

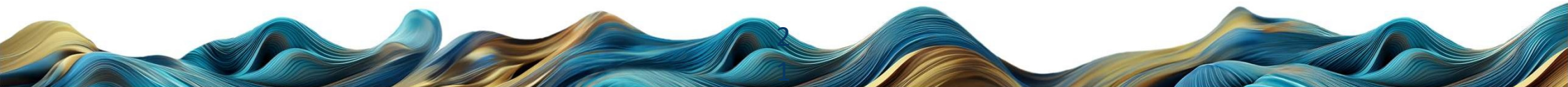
TOTAL LAYDOWN = <i>DARK MARBLE DESIGN</i> + WATER BASE DIGITAL GLUE	25gr/m2 100gr/m2	Odour (uOg/m3)	VOCs (mg/Nm3)
Solvent Glue Eco Friendly		HIGH	HIGH
WATERBASE GLUE IKAE 80001		- 70%	- 75%



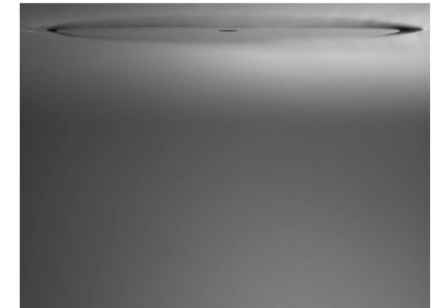
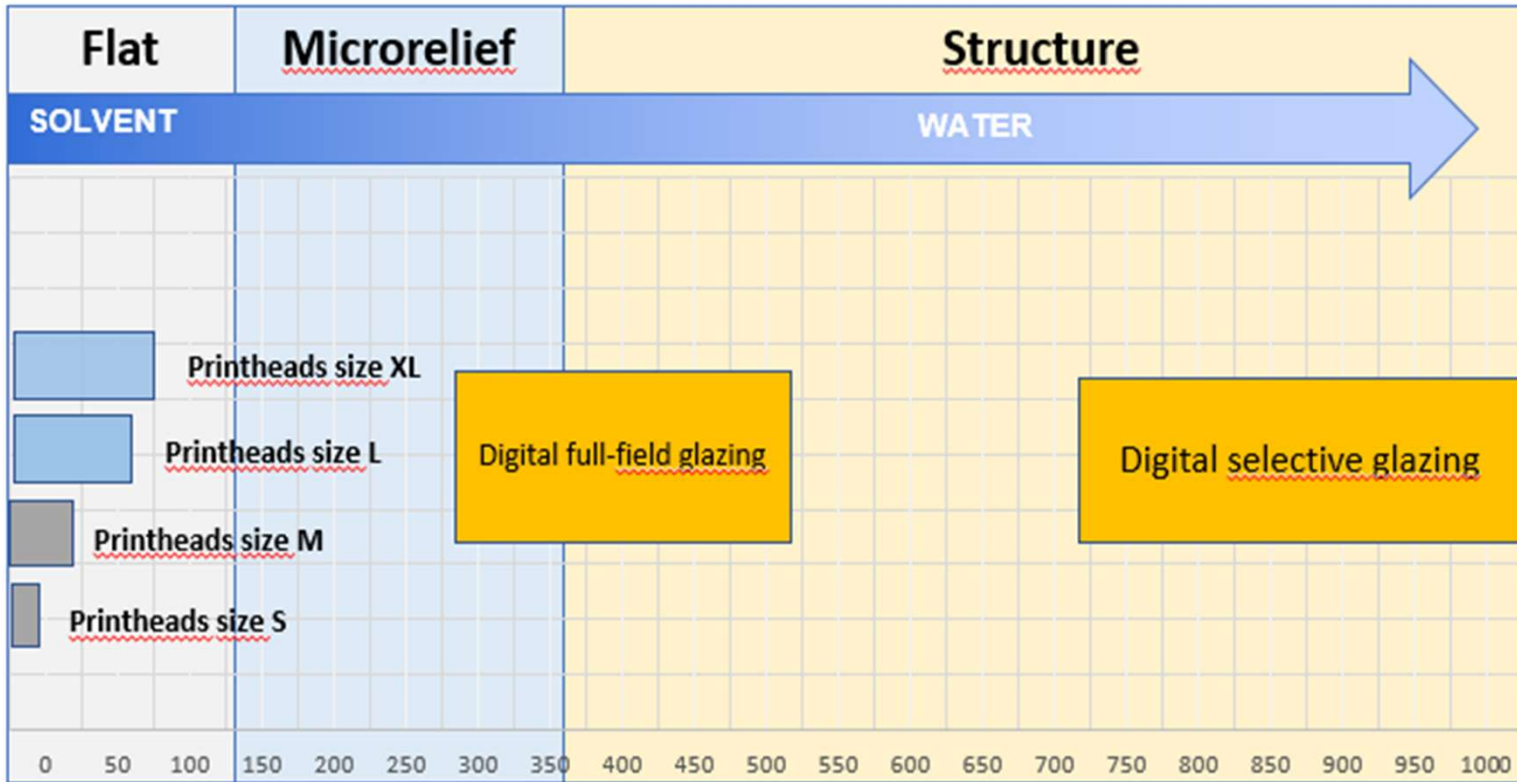
DIGITAL GLAZES



- *FULL FIELD GLAZING*
- *SELECTIVE 3D GLAZING DECORATION*



From FLAT to RELIEF Digital Liquid Systems

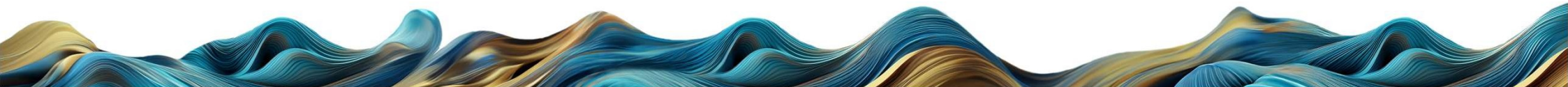


Laydown (g/m²)

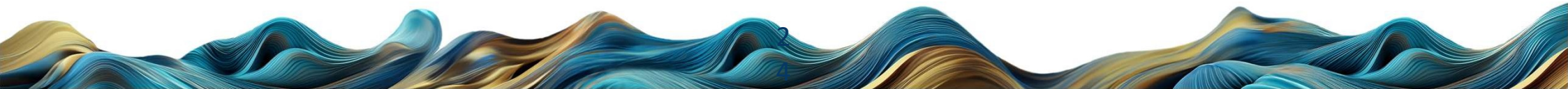




- ✓ High content in solids and water, with no hazardous compounds
- ✓ Particle size greater than 5 microns
- ✓ Suitable to be applied with different digital glazing technologies
- ✓ Working temperature of the injectors up to 45°C
- ✓ Suitable for systems with a maximum laydown capacity of up to 1000 g / m²
- ✓ Compatible with the inks of the etr and sps series, preferably with the air series
- ✓ Cleaning only with water
- ✓ Recyclable packaging
- ✓ Low environmental impact



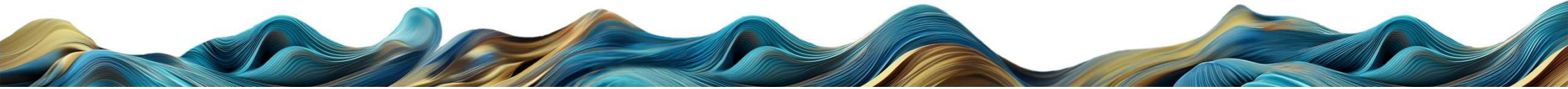
FULL FIELD GLAZING



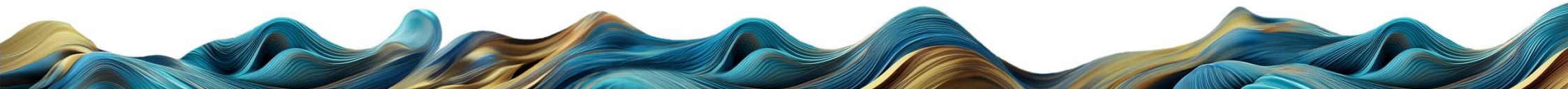
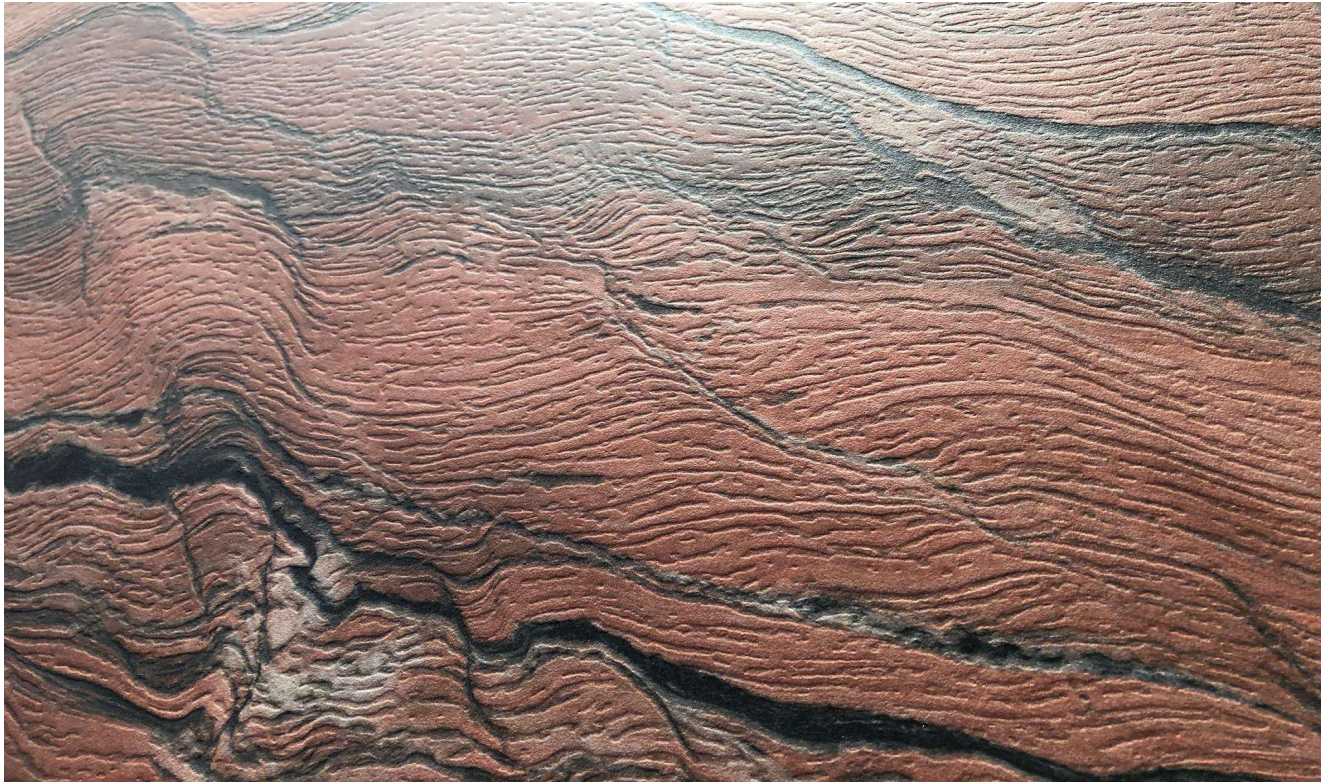
Traditional Glazing TECHNOLOGIES vs FULL FIELD DIGITAL GLAZING



	Bell/Vela	Spraying (Airless)	DOD Ceramic printhead	DOD Dosing/Spraying systems
Suction	No	Required	No	No
Water consumption & waste	Medium	High	No/Low	Low
Glaze waste	5-10%	20-30%	No	No
Particle size	<63 µm	<63 µm	<45 µm	<63 µm
Organic content	<0,5 %	1-2%	5 -15%	1-6%
Working mode	Always glazing	Always spraying	Only glazing when tile pass	Only glazing when tile pass



SELECTIVE 3D GLAZING DECORATION





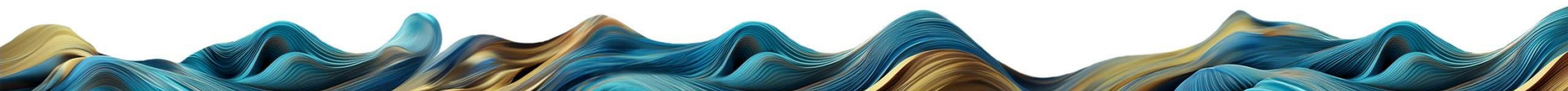
EXTRAGLAZES

THE GLAZE YOU HAVE NEVER TOUCHED BEFORE

- Sustainable **Water base** GLAZES for digital selective high laydown technologies.
- Laydown Up to **1 Kg/m²**
- PSD ≤ 45 μm**
- High valued products for exclusive projects.
- Reproduces many different structures up to 3-4 mm thickness

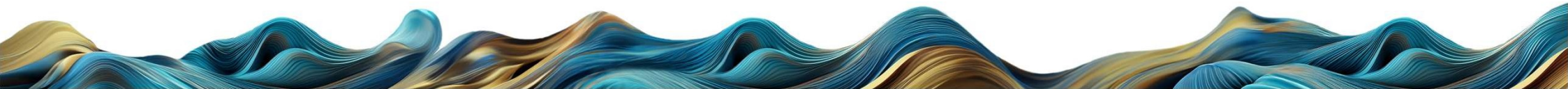
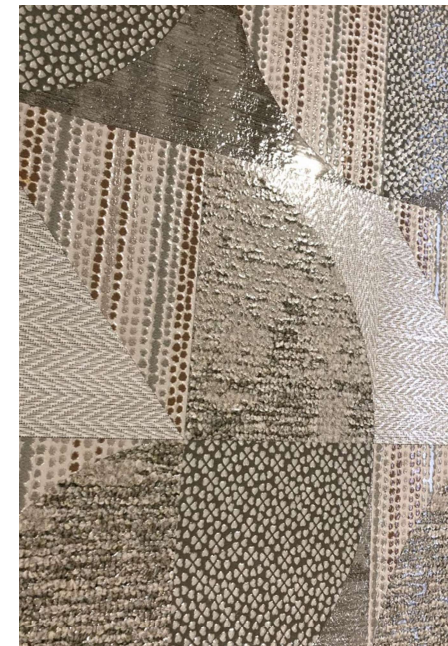
1- hard matt	CIA60P0009
2- glossy transparent	CIA60P0011
3- glossy white	CIA60P0010

REFERENCES



Selective Digital Glazing vs Press structures

Criteria	Press	3D Digital Glazing
Aesthetics	Same structures as natural products: wood, stones, cements, textiles	Same structures as natural products: wood, stones, cements, textiles
	No more that 4 structures simultaneously/ by format or design	Unlimited number of structures
Productivity	Usually structures NOT synchronized with digital graphics	Perfectly synchronized with digital graphics
	Downtime due to punch changes	No downtime for structure Changes
Flexibility	Sequence of products conditioned by press changes	Production plan without any restriction in the sequence of products.
	batch sizes conditioned by press changes	Possibility of reducing batch size, without affecting the press availability
Consumables	Moulds (punches)	Colorobbia EXTRA-GLAZES



COLOROBBLIA®

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THANK YOU



RDA  *Monari Paolo*