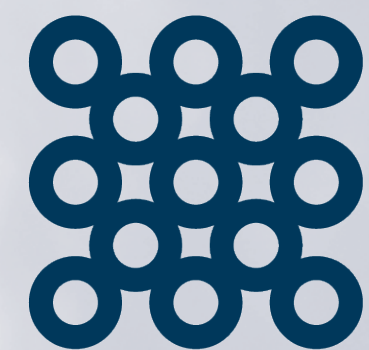


Designing
new values
in chemistry





Tenagreen

Estudo de ativos para encontrar um ponto de equilíbrio entre resistência e flexibilidade no corpo cerâmico



Our Global Presence





Company Highlights

655

M€ Net Group sales 2023

1.366

Employees worldwide

191

Year of foundation

14%

Researchers

10+

Synthesis Laboratories

20+

Application Laboratories

38

No. of operations 2023

496

Active Patents

>90%

Eco-friendly products



Sustainability Commitment

SUSTAINABILITY REPORT 2022

we are.
Governance



The Challenge and the opportunity

GOING FURTHER TOGETHER

*The knowledge, experience and sustainability culture we have gathered publishing our 4th SR is a sound basis to achieve future targets which involves both regulatory aspects, such as **The European Green Deal** with EU's climate targets for 2030 and 2050 and the yet more stringent customers and stakeholders' requirements.*

Putting together both these aspects becomes "the challenge and the opportunity" for our company, bearing always in mind the thorough balance among three primary aspects of full sustainability: environmental, social and economic.

*I would like to thank all **Lamberti people**, particularly those involved in this project, aiming at setting up a sustainable and competitive company.*

Paolo Lamberti, President and CEO

54

55



SUSTAINABLE & CIRCULAR POLICY

GOLD

2023

ecovadis

Sustainability Rating



Systemic solutions

Our technologies per market

	Cellulosics	Hydrocolloids	Acrylics	Waterbased polyurethanes	Polymeric matting agents	Oleochemicals
Agriculture	•	•	•	•		•
Ceramic and Glassware	•		•	•		•
Energy Solutions	•	•	•			•
Leather	•	•	•	•	•	•
Natural Polymers	•	•				•
Personal care		•	•		•	•
Surface Treatment	•	•	•	•	•	•
Surfactants						•
Textile Finishing and Printing	•	•	•	•	•	•

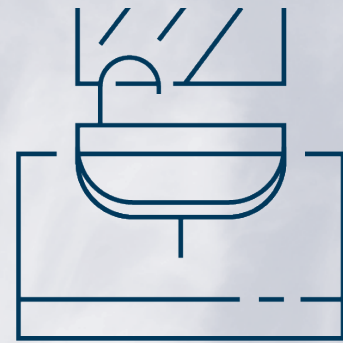


Lamberti Ceramics Division

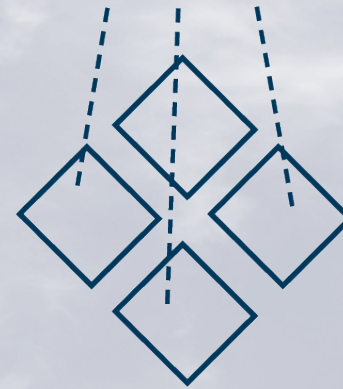
Our know-how and experience serve very different and varied industries.



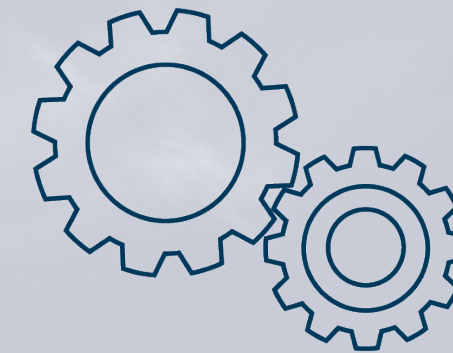
Tiles



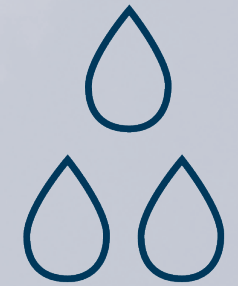
Whiteware



Glass



Technical
Ceramics



Glaze and Ink
manufacturers



Tenagreen

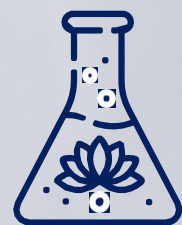
what is it and what it does?



Products designed to enhance mechanical characteristics of the body before firing.



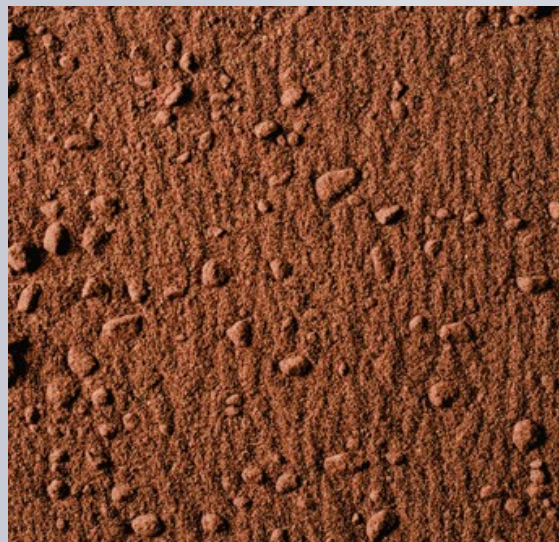
It combines production benefit for output quantity and sustainable solutions.



It's a new generation resins from Lamberti technology.



Tenagreen: which technological changes can be supported?



Replacing partially plastic clays Tenagreen can help in recover part of the plasticity if a technologist reduces the content of plastic clay; no side effect are found as variations in dimension, water adsorption or planarity.



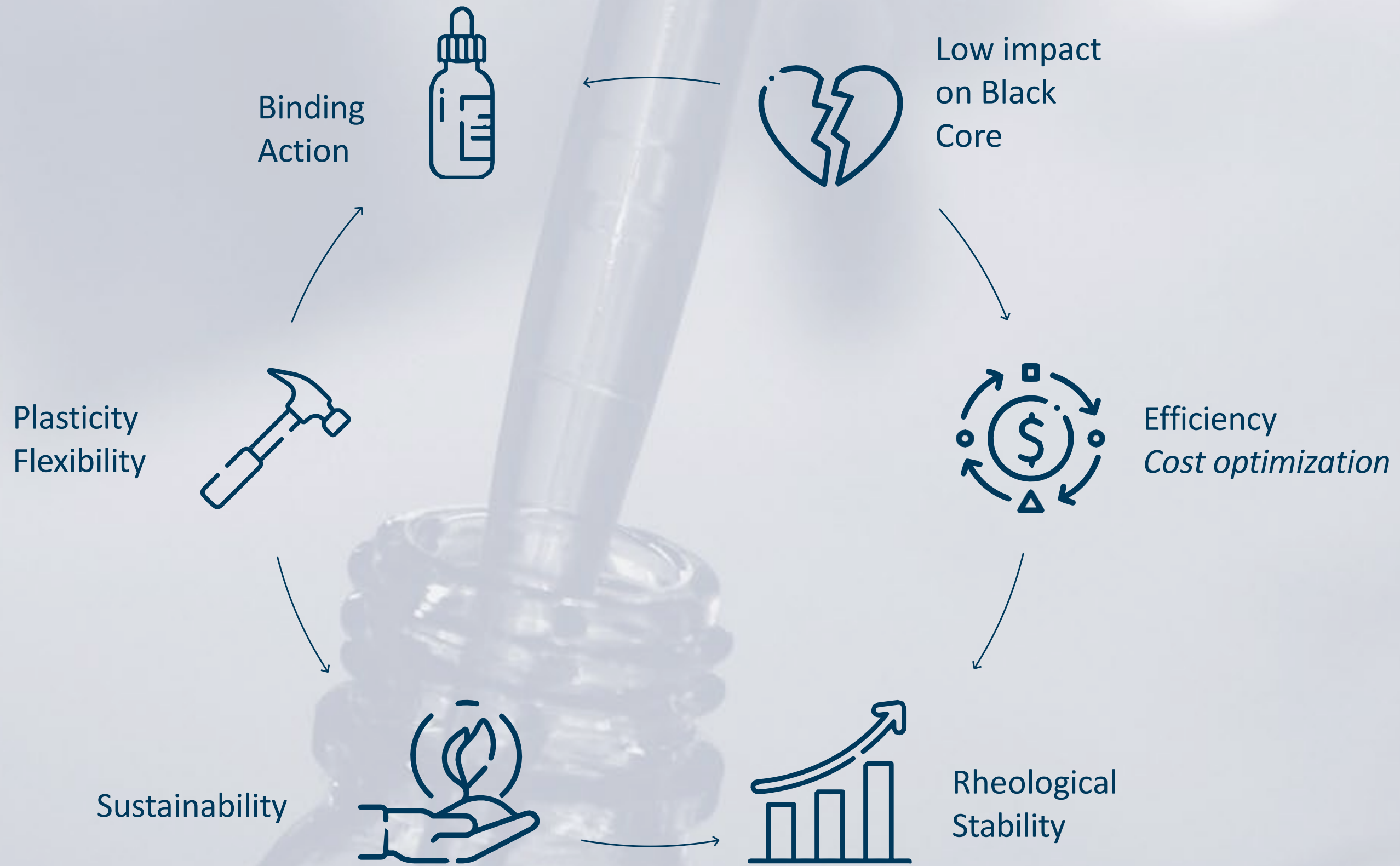
Reduce thickness Tenagreen can help this technical change; the mechanical strength downs along with the thickness if all the other working parameters are the same.



Produce Slabs The internal slab strains can be reduced by supporting the body recipe with a plasticizer.



Tenagreen Action Areas





Tenagreen: effect on ceramic process

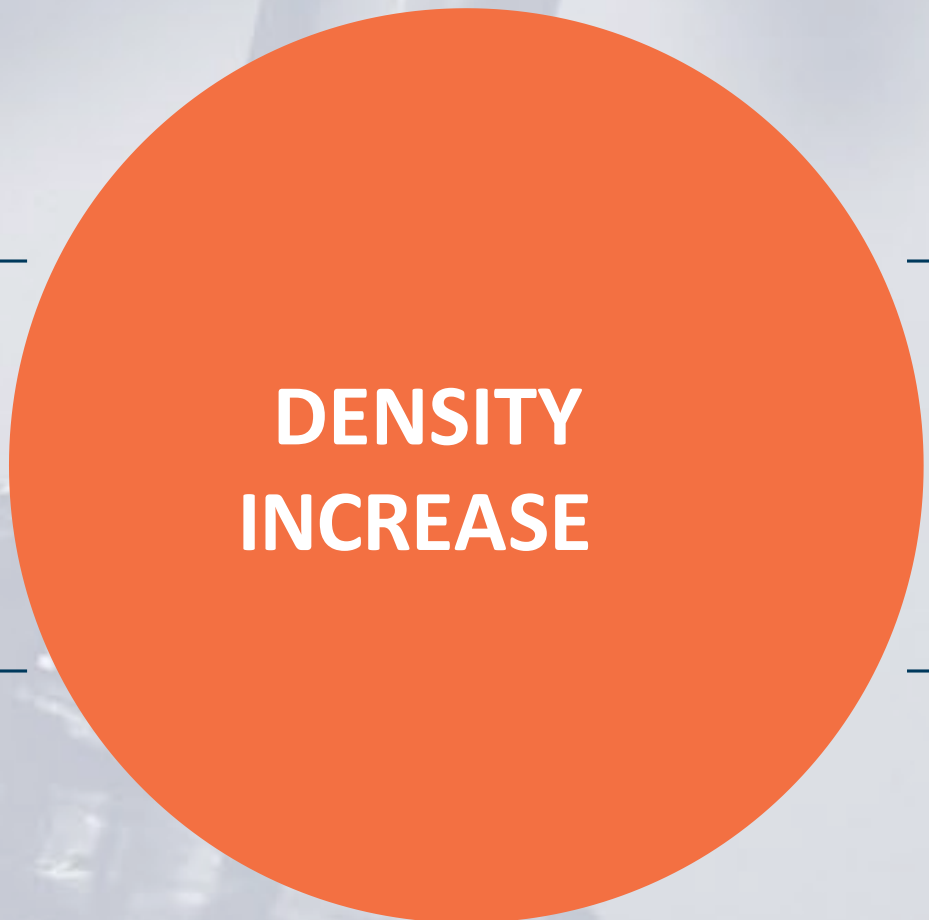
Body Slip Working Density Increasing

Water Saving

We use less water into the milling process.

CO₂ emissions decreasing

We produce less CO₂ as we decrease keeping a steady productivity.



DENSITY INCREASE

Methane CH₄ saving We use less Methane gas for the water evaporation.

Money saving

We save money as the usage of Methane gas is lower.

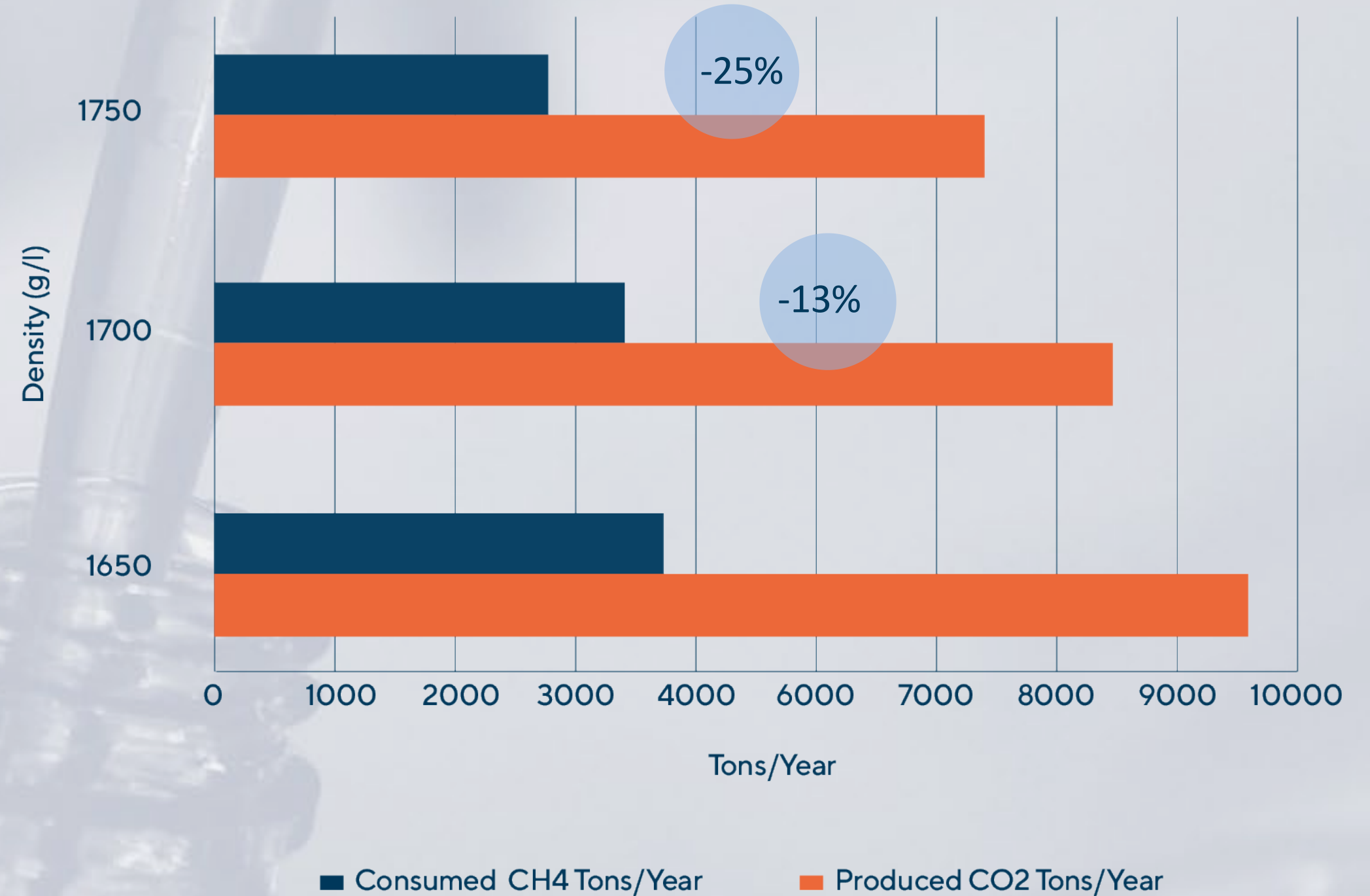


Tenagreen: effect on ceramic process

Body Slip Working Density Increasing

How density variation affects CH₄ consumption and CO₂ production

CH₄ Saving

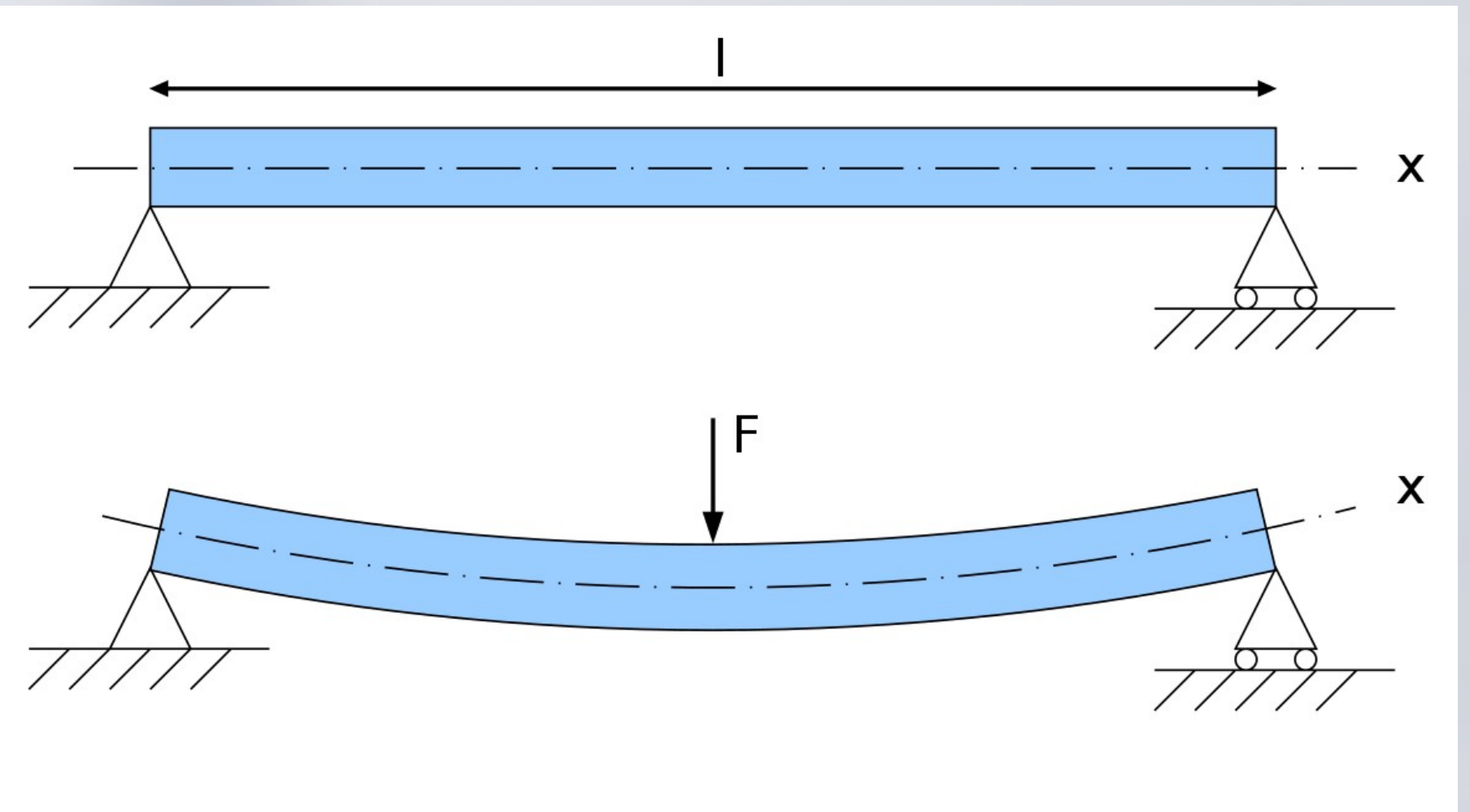




Tenagreen: effect on ceramic process

Effect on Flexibility Deformation Before Breakage

«Greater deformation of the tile reduces defects and breakages in line and during firing»





MOR

(Modulus of Rupture)

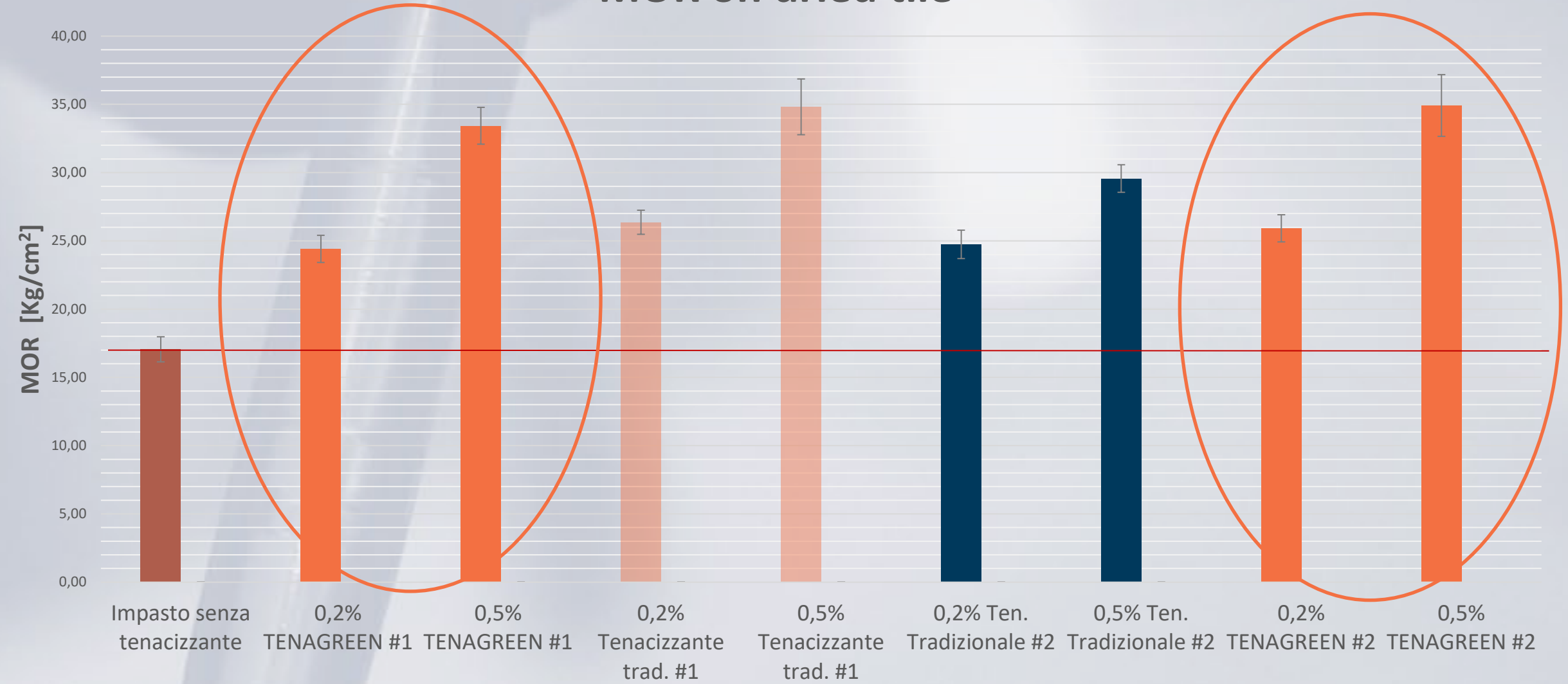
MOR on dried tile

MOR on tile dried to obtain a water content close to 0%.

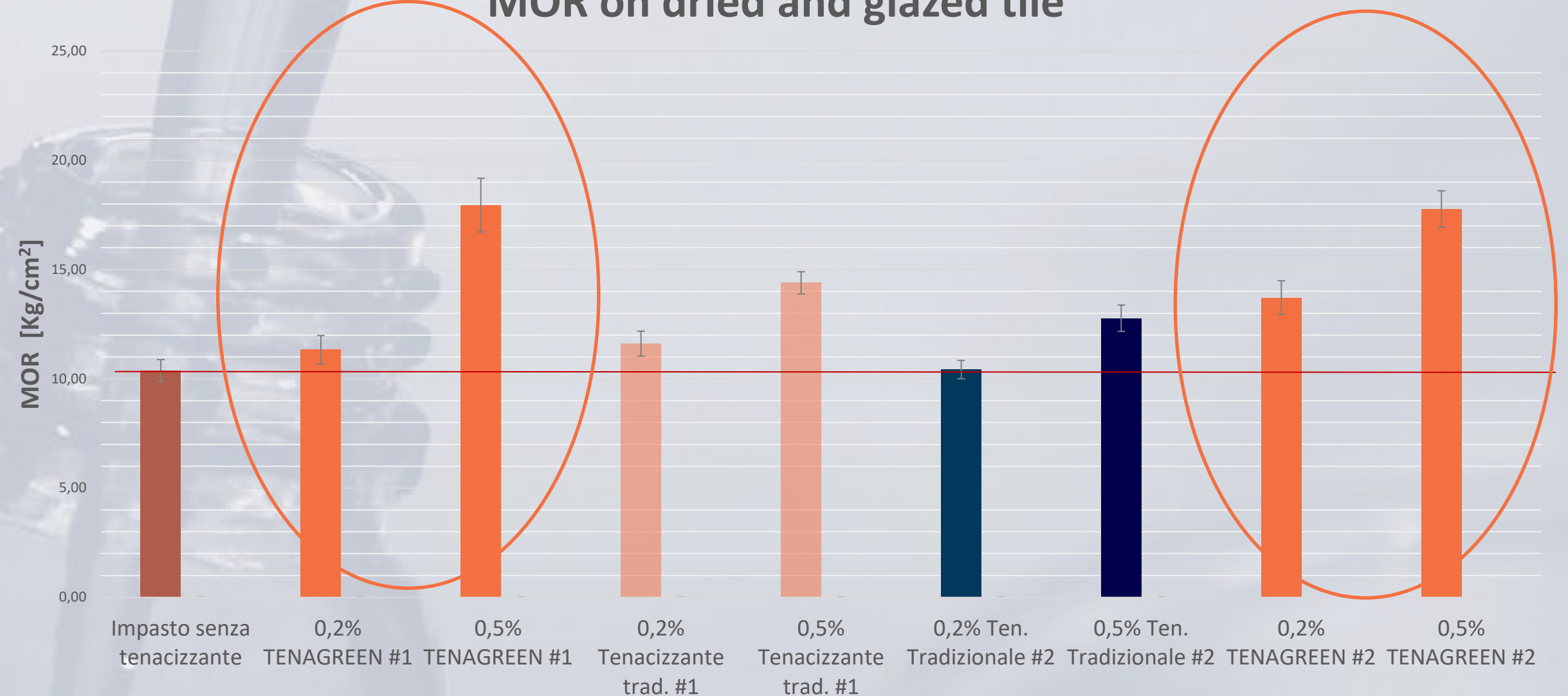
MOR on dried and glazed tile

MOR on dried and glazed tile to simulate the water absorbed in glazing line.

MOR on dried tile



MOR on dried and glazed tile

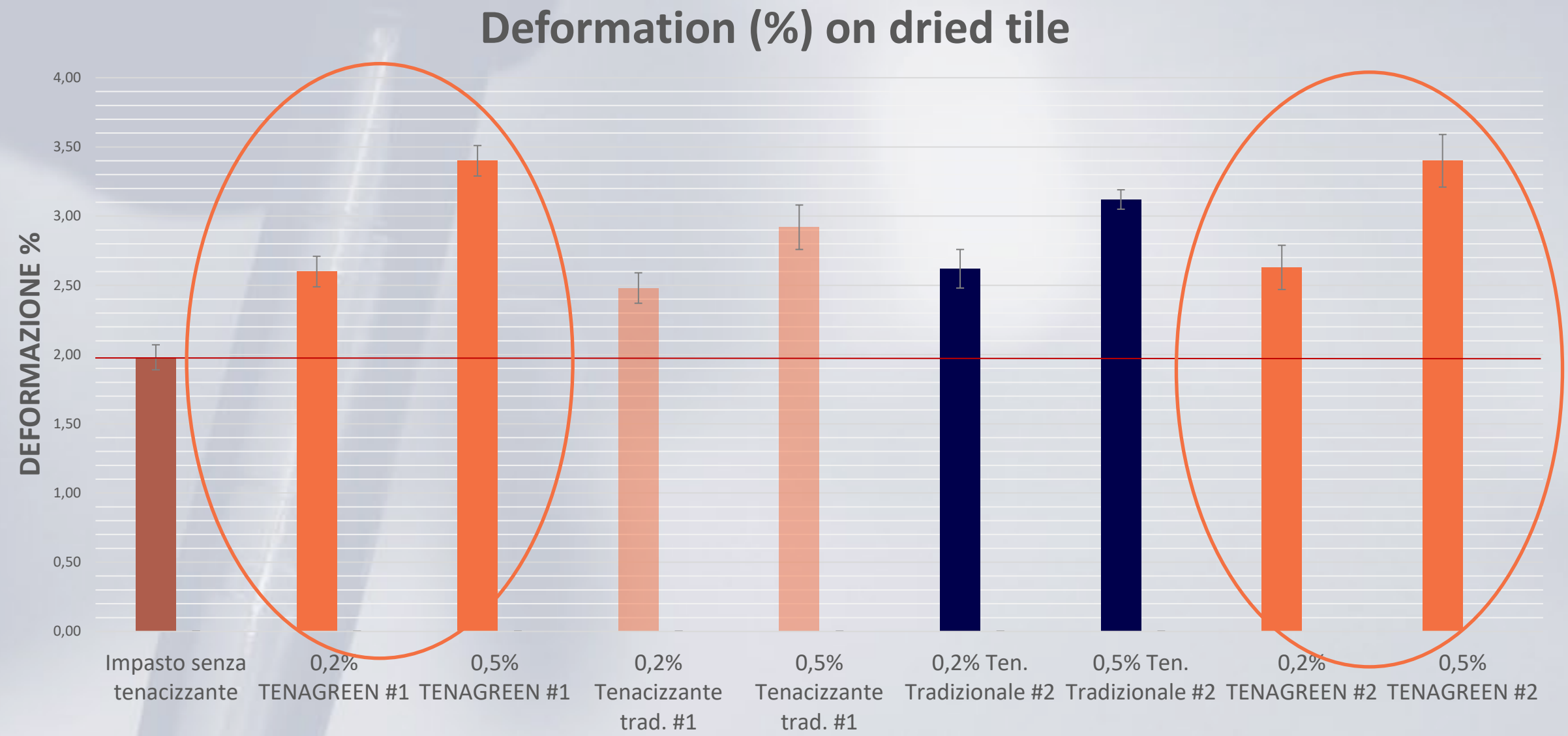




Deformation (%)

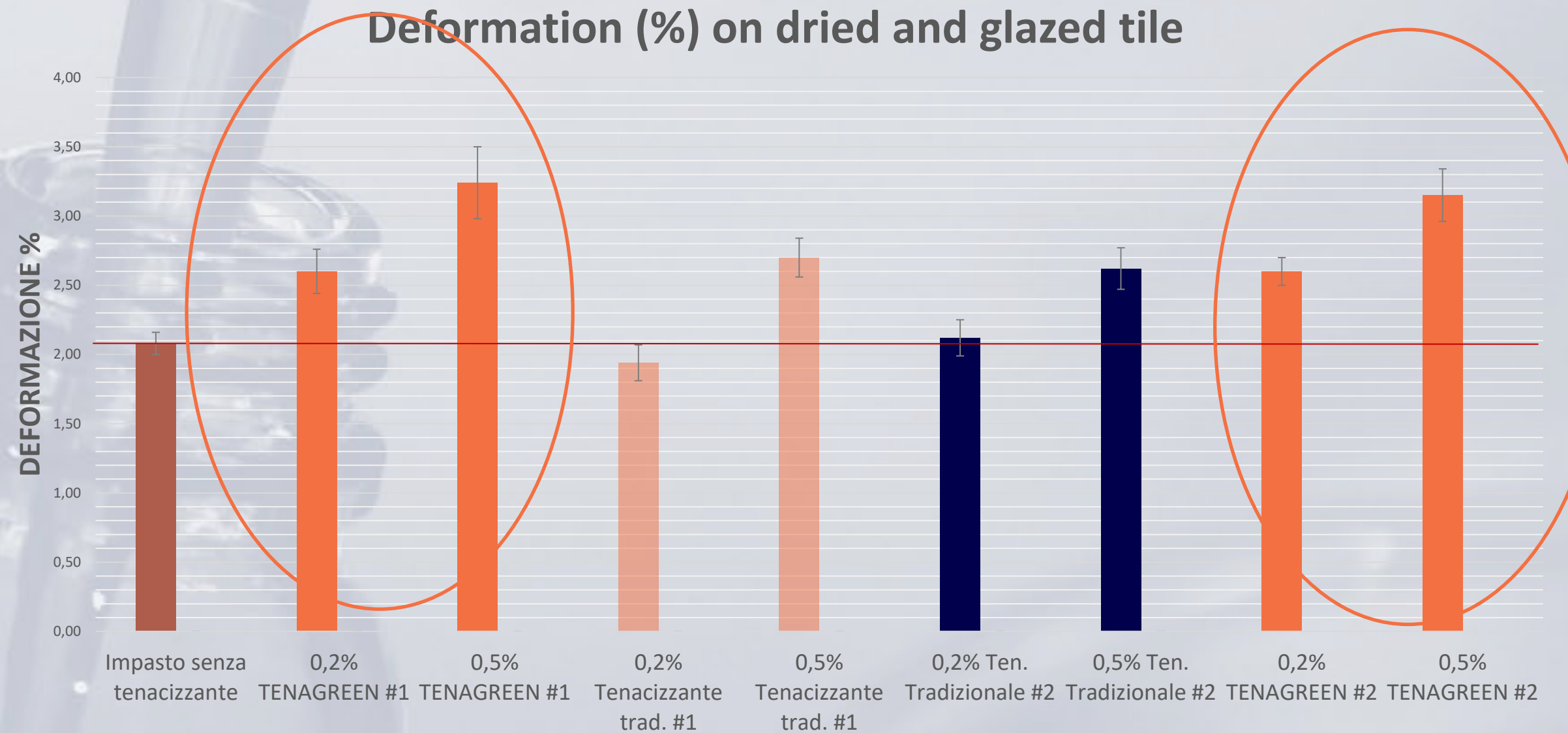
Deformation (%) on dried tile

Deformation (%) to obtain a water content close to 0%.



Deformation (%) on dried and glazed tile

Deformation (%) to simulate the water absorbed in glazing line.

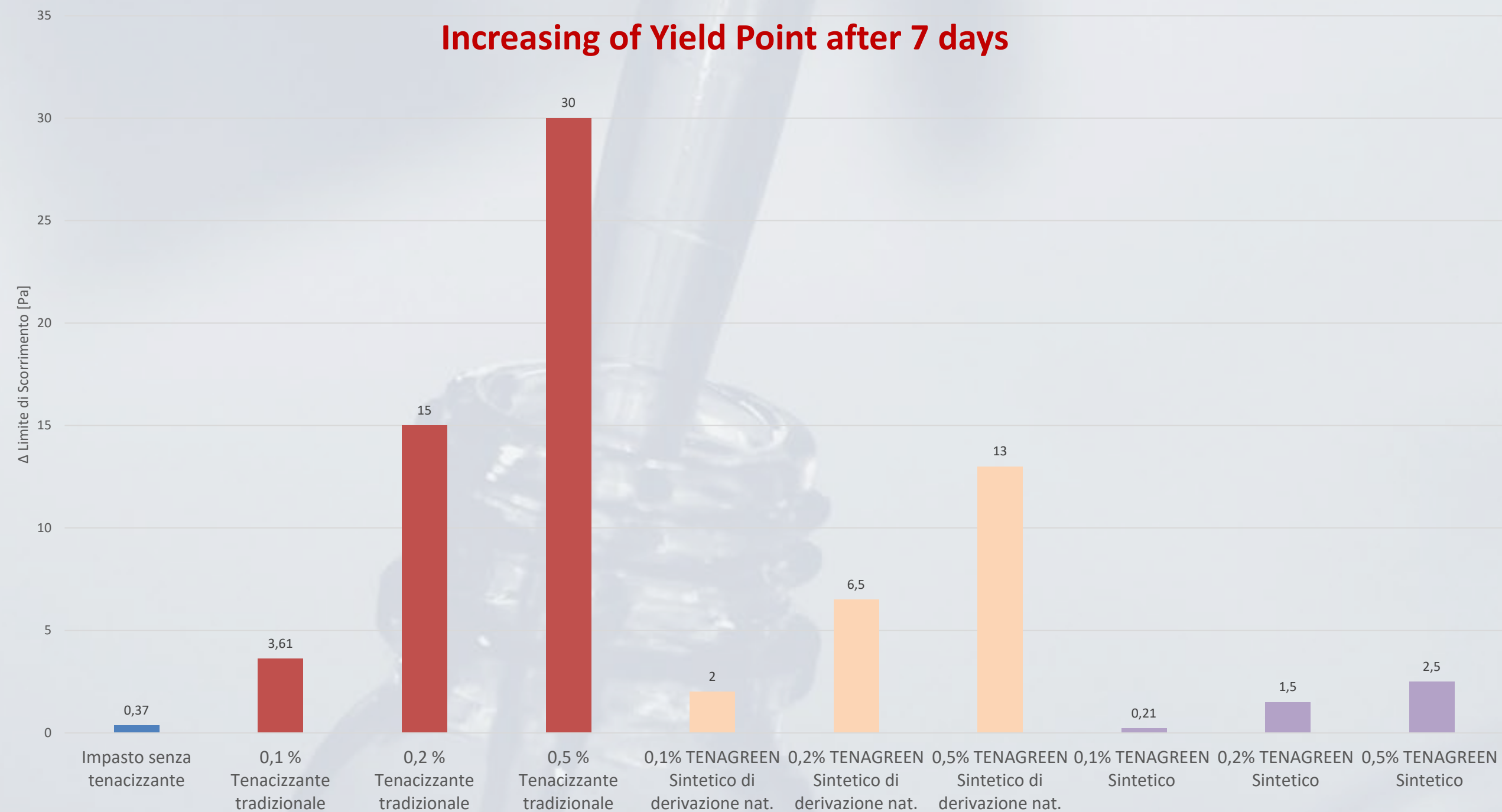




Tenagreen: effect on ceramic process

Body Slip Viscosity Stable Over The Time

«Tenagreen are chemical products resistant to bacteria and microorganisms, for this reason they guarantee rheological stability over time»





In nut shell

Body Slip Working Density Increasing

«higher productivity and cost reduction.»

Effect on Flexibility Deformation Before Breakage

«Greater deformation of the tile reduces defects and breakages in line and during firing»

Body Slip Viscosity Stable Over The Time

«Tenagreen are chemical products resistant to bacteria and microorganisms, for this reason they guarantee rheological stability over time»



Lamberti.ceramics.com