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#ichooseresponsibly

The Glossary of Responsibility of Italian Ceramics.



#ichooseresponsibly

Responsibility towards the world I live in determines every choice I make in my daily life.

Italian ceramic companies are dedicated to daily, concrete actions aimed at improving quality of life and respecting the environment.

Many companies in other countries do not share this commitment.

Italian Ceramics.

I choose responsibility.

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A,a

Air

In 2019, ceramic companies in the Sassuolo district signed a Voluntary Area Agreement with the Emilia-Romagna Regional Government to limit atmospheric emissions.

The Agreement established a quota system, allocating each manufacturing facility a maximum number of quotas, with each quota representing **1 kg** of daily emissions of nitrogen oxides and hot and cold dust.

The Agreement also sets out measures for the progressive reduction of total permitted emissions across the district.

These initiatives have led to measurable **improvements in air quality** within the Sassuolo ceramic district, as confirmed by data from Arpae (Emilia-Romagna Regional Agency for Prevention, Environment and Energy).

For further information



Maximum number of quotas of daily emissions

B,b

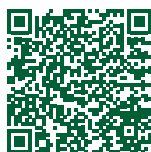
Best Available Techniques (BATs)

Best Available Techniques (BATs) are the most effective methods for minimising environmental impact and have been fully embraced by the Italian ceramic industry in its production processes.

Italian ceramic companies have invested heavily in the adoption of Best Available Techniques (BATs), going well beyond the minimum requirements.

These efforts have led to a **significant reduction** in pollutant emissions and the consumption of natural resources, thereby making a substantial contribution to environmental protection.

For further information



B,b

High energy saving buildings

Italian ceramics are a valuable ally in sustainable building.

Ceramic products play a vital role in the design of environmentally friendly buildings, enhancing both energy savings and occupant well-being.

The **insulating properties** of bricks significantly boost a building's energy efficiency.

Ventilated façades reduce energy consumption for heating and cooling, while ceramic floors facilitate uniform heat distribution.

For further information



C,c

Certifications

Italian ceramic products boast certified environmental and social sustainability.

The certifications earned by ceramic tile, sanitaryware and brick and roof tile manufacturers guarantee that their products are made with respect for the environment and people.

Each stage of the production process is evaluated by independent certification bodies, which verify **quality, safety** and **compliance** with international standards.

For further information



C,c

Circularity

The Italian ceramic industry adopts a circular approach to reduce consumption and waste in the industrial process.

Italian ceramic tile factories reuse up to **100%** of their unfired and fired waste and also incorporate waste from other industries, covering **8.5%** of their raw material requirements.

All wastewater is treated and reintroduced into the production cycle, meeting **57%** of factories' water requirements.

The Italian ceramic industry meets the highest standards of efficiency and pre-consumer circularity.

For further information



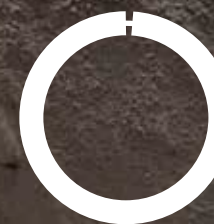
57%

coverage of water requirements



8,5%

coverage of raw
material requirements



Up to 100%

reuse of production and treatment waste

C,c

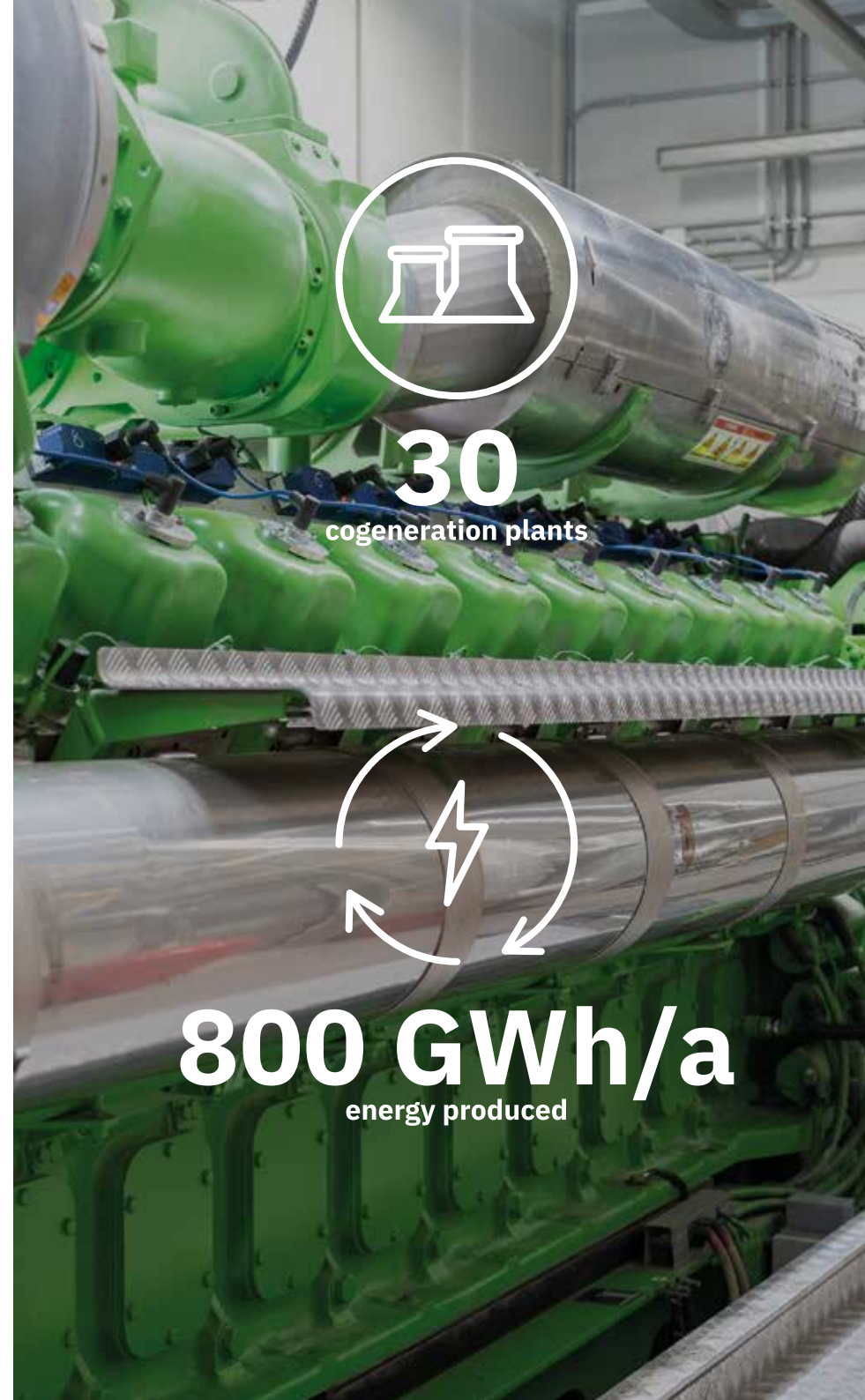
Cogeneration

High-efficiency cogeneration is a cornerstone of the Italian ceramic industry's commitment to environmental responsibility.

This technology allows companies to generate electricity and heat simultaneously, reducing fossil fuel consumption and CO₂ emissions compared to traditional, separate systems.

The Emilia-Romagna region currently has more than **30 cogeneration plants** that meet **47%** of the Italian ceramic industry's electricity needs by producing more than **800 GWh** per year.

For further information



C,c

CSR

The Italian ceramic industry demonstrates its commitment to Corporate Social Responsibility (CSR) through its efforts to promote the wellbeing of employees and the local community.

Italian companies are committed to improving the working conditions of their employees through investments in training programmes promoting career opportunities and measures to ensure a safe and healthy workplace.

Responsible practices also include promoting the **economic and social development** of the local community.



D,d

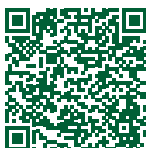
Decarbonisation

The Italian ceramic industry demonstrates its commitment to responsibility through its daily choices to drive progress in the energy transition.

As an inherently energy-intensive sector, the Italian ceramic industry has been pursuing decarbonisation for several decades. Since the 1990s, the carbon intensity required to produce 1 m² of tiles has decreased by **65%**.

Italian companies are continuing this journey through a **multifaceted approach** that combines energy optimisation, circular economy practices and the adoption of renewable energy sources to meet its electricity needs.

For further information



European target:
reduce GHG emissions by

-55%

by 2030 compared
to 1990 levels



Carbon intensity
per m² of tiles:

-65%

lower than in the 1990s

D,d

Durability

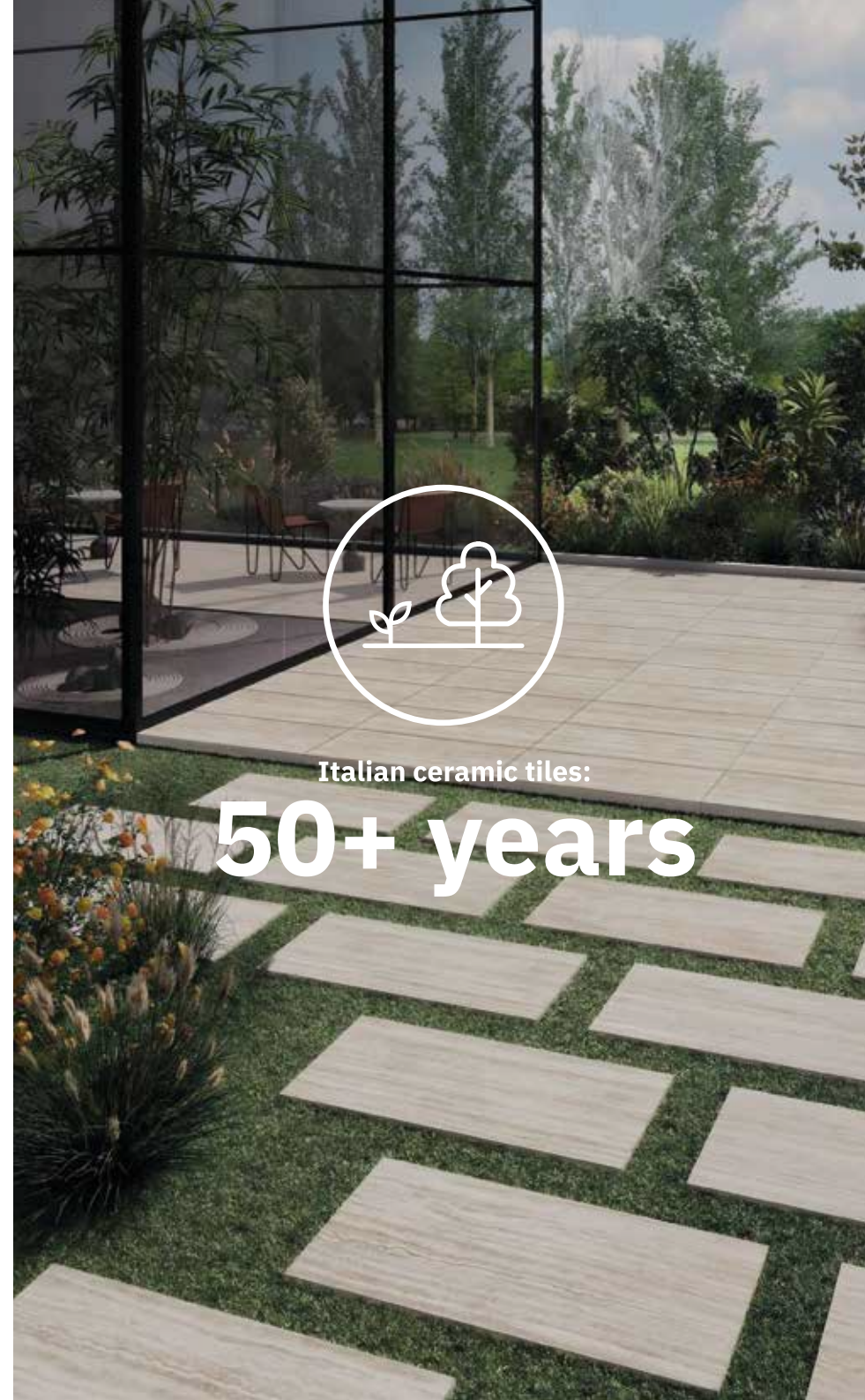
Italian ceramic tiles are produced in a very short time but have a lifespan of more than 50 years.

Durability is a key factor in assessing a product's sustainability in design and architecture applications.

Unlike other types of indoor flooring which may require frequent replacement, ceramic tiles and bricks typically last as long as the building itself.

The secret to their longevity lies in the **firing** process. This essential step in the ceramic production process not only guarantees exceptional durability but also ensures outstanding technical and aesthetic performance.

For further information



Italian ceramic tiles:

50+ years

E,e

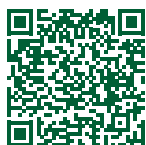
Energy efficiency

The Italian ceramic industry has adopted the best available technologies to enhance energy efficiency in industrial facilities.

Since the 1980s, the industry has adopted cogenerators and systems for **recovering heat** from kilns and **optimising consumption**.

Many companies have also installed photovoltaic panels, which increase the quantity of self-generated electricity and further reduce CO₂ emissions.

For further information



E,e

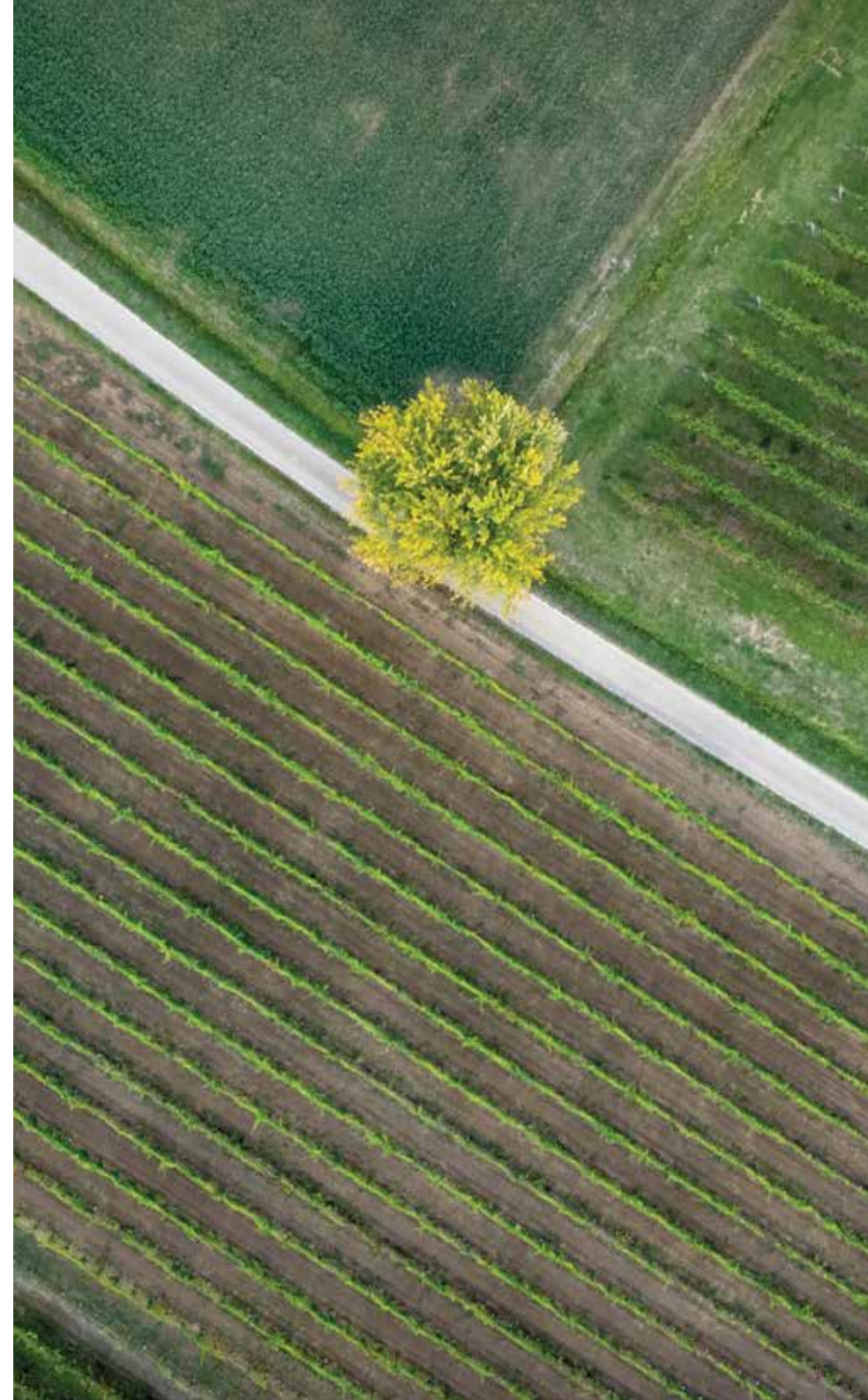
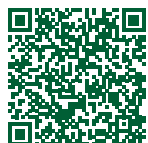
Environmental Product Declaration (EPD)

The Italian ceramic industry's EPD allows customers to make responsible and informed purchasing decisions.

The EPD is a voluntary, third-party certified and internationally recognised declaration. It provides **transparent and objective information** on the environmental performance of Italian ceramic tiles across their entire life cycle, from raw material extraction to final disposal.

It serves as a guarantee for architects and consumers in search of products that are environmentally responsible and have a low impact on the planet.

For further information





Sustainable Development Goals

The Italian ceramic industry plays a key role in achieving the United Nations' Sustainable Development Goals (SDGs).

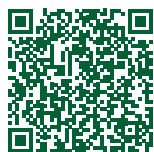
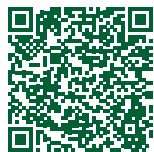
SDG 12: Sustainable consumption and production

Companies demonstrate their commitment to circularity by optimising industrial processes and investing in technologies that significantly reduce CO₂ emissions over the entire product life cycle.

SDG 9: Innovation and Infrastructure

Digital technologies, photovoltaic systems and cogeneration plants enhance the efficiency of the Italian ceramic industry, strengthening its position as a global leader.

For further information



SDG 8: Decent work and economic growth

Job creation, training initiatives, and accident prevention programmes support the growth of local employment.

SDG 11: Sustainable cities and communities

Tiles, bricks and sanitaryware play a key role in projects aimed at promoting more sustainable building practices.



G,g

Green, Green home

Italian ceramics play a key role in creating buildings that combine energy efficiency, design and respect for the environment.

Italian ceramics contribute significantly to the design of “green homes”, **buildings with minimal environmental impact**, optimised energy consumption over their entire life cycle and maximum occupant well-being.

Thanks to their unique properties, Italian ceramics improve energy efficiency while creating comfortable, healthy environments and delivering affordable long-term solutions.

Italian ceramics also actively contribute to the European Commission’s **New European Bauhaus** initiative, which promotes sustainable, inclusive and aesthetically pleasing living spaces.

For further information



H,h

Worker health

Ever since the early 2000s, the Italian ceramic industry has been adopting measures to protect workers from the risk of exposure to chemical agents.

The measures adopted by ceramic producers have achieved excellent results in terms of health and safety in factories in accordance with EU recommendations.

A **Memorandum** signed in **2021** by Confindustria Ceramica, the Emilia-Romagna regional government, Acimac and the trade unions established clear criteria for identifying and protecting workers exposed to substances such as crystalline silica.

For further information



H,h

Heat recovery

Heat recovery contributes to more responsible production.

Given the **high temperatures** involved in ceramic manufacturing, Italian companies have long been utilising technologies to recover heat from kilns. This recovered energy is used to power dryers, heat buildings and provide hot water, effectively reducing energy consumption and significantly lowering overall CO₂ emissions.

For further information



Heat recovery transforms waste heat into a valuable resource, delivering significant **benefits**:



Reduced consumption
of natural gas and
fossil fuels



Lower CO₂ emissions



Improved
energy efficiency



Smaller
environmental
footprint

I,i

Iso

The Italian ceramic industry has obtained some of the most important ISO certifications, demonstrating its commitment to sustainability, environmental compliance and social responsibility.

ISO 14001 certifies the low environmental impact of production activities and the adoption of sustainable practices across the supply chain.

ISO 17889-1 evaluates the environmental, economic and social impact of ceramic tiles throughout their entire life cycle.

ISO 9001 certifies outstanding product performance, safety and reliability.

ISO 45001 certifies the industry's role in creating healthy, comfortable and aesthetically pleasing living spaces.



“

The International Organization for Standardization (ISO) is an independent international organisation that promotes global standards to ensure the quality, safety and efficiency of products, services and systems.

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L, I

LEED

The use of Italian ceramic tiles plays a significant role in achieving key environmental sustainability certifications, including LEED.

Ceramic building products help to achieve high scores in the LEED system, developed by the US Green Building Council to assess the sustainability of buildings.

Italian ceramics:

- **Reduce environmental impact**
- Improve **indoor air quality**
- Improve the **energy efficiency** of buildings
- **Counter the heat island effect**



L,l

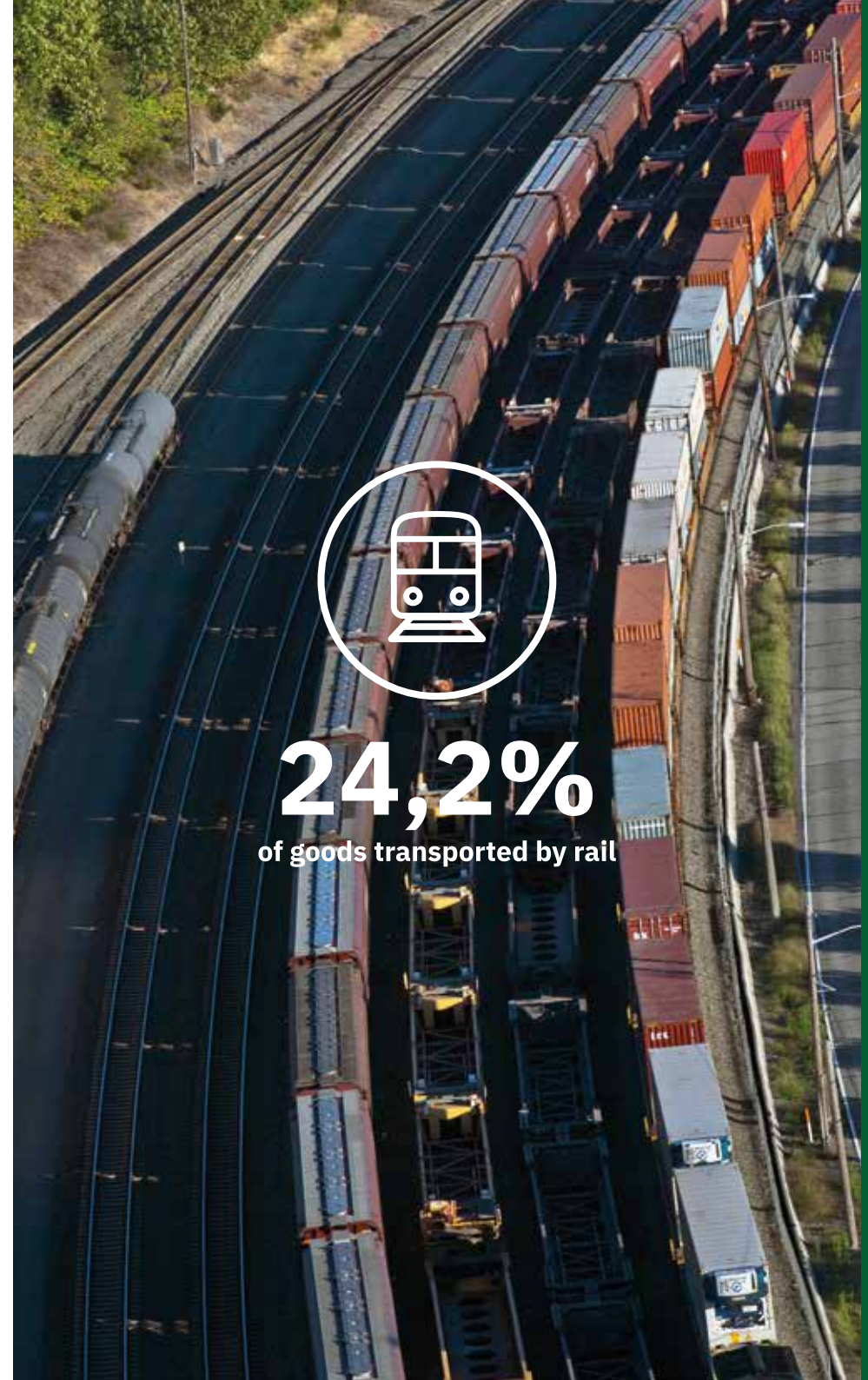
Logistics

Boosting rail transport to and from the Sassuolo ceramic district helps reduce the environmental footprint of Italian ceramic tiles.

The volume of ceramic raw materials and finished products transported by rail stands at double the national average, in line with the European Union's goal of reducing road transport by **30%** by 2030.

Rail transport significantly reduces CO₂ emissions compared to heavy goods vehicles while also diversifying supply and distribution risks.

For further information



24,2%
of goods transported by rail

M,m

Mater Ceramica

The Mater Ceramica project was launched in 2017 with the support of the Italian Ministry of Economic Development.

The aim of the initiative is to document Italy's artisanal, artistic and industrial ceramic sectors, mapping the entire national production landscape in order to create a publicly accessible **database**.



For further information



M,m

Minimum Environmental Criteria (CAM)

Italian ceramic products are a responsible choice for public projects such as schools, hospitals and sports stadiums.

Italian ceramic tiles, sanitaryware and bricks and roof tiles are an **ideal solution** for public building projects because they meet the Minimum Environmental Criteria (CAM) established by the Italian Ministry of the Environment as a prerequisite for participation in public tenders. With their exceptional environmental performance, durability, versatility and aesthetic appeal, ceramic products are ideal for constructing long-lasting buildings that prioritise occupant well-being.

For further information



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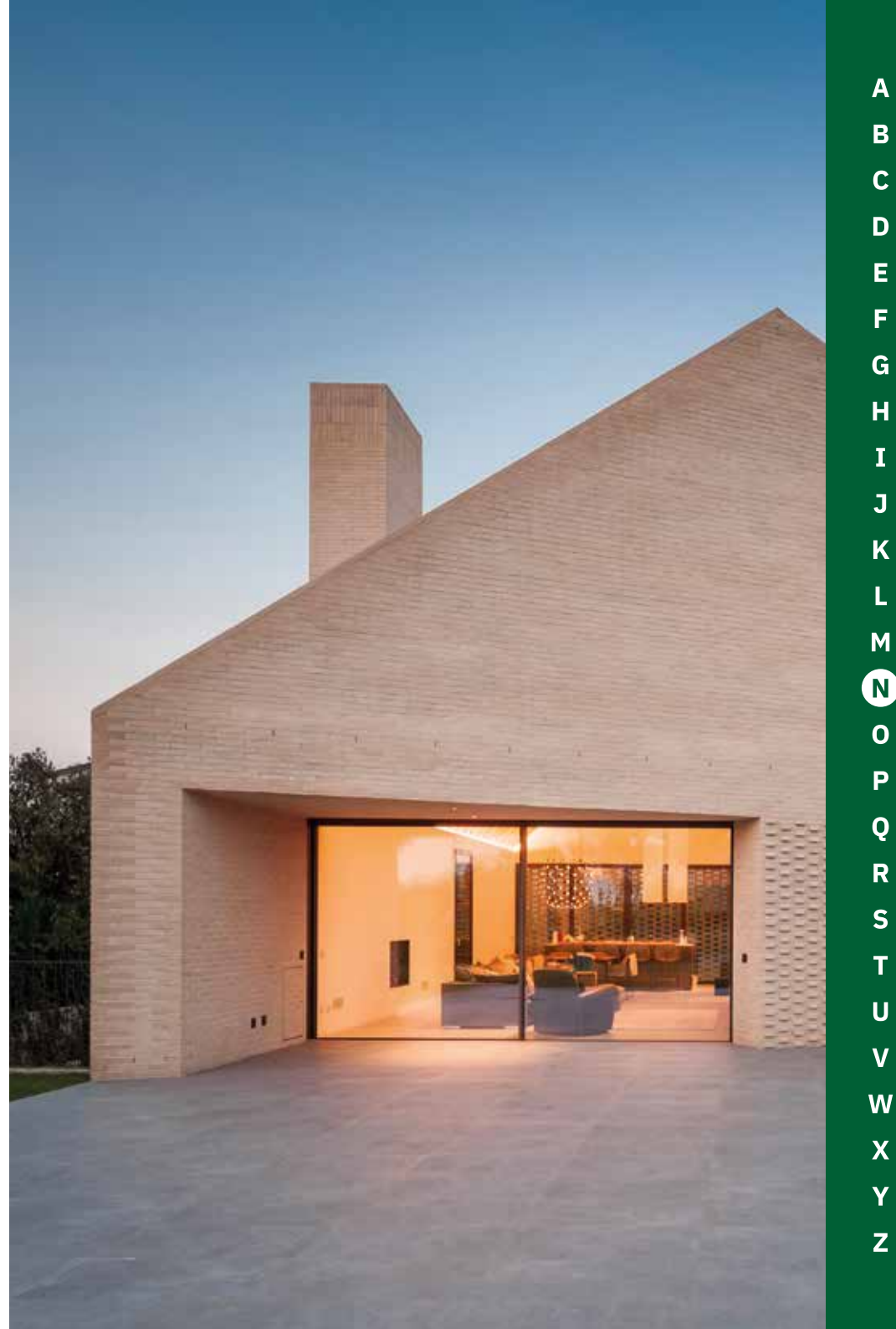
Nearly Zero Energy Building (nZEBs)

Italian ceramics play a vital role in promoting healthy indoor environments within nearly Zero Energy Buildings (nZEBs).

nZEBs adopt building envelopes with very high thermal insulation to minimise heat exchange between the interior and exterior. However, this level of insulation can lead to moisture build-up inside the building.

In nZEBs, ceramic materials such as clay bricks help to create healthy and comfortable indoor environments. Their **moisture buffering** properties prevent moisture accumulation and the growth of mould and bacteria, even in poorly ventilated areas.

For further information



P,p

Recyclable packaging

The Italian ceramic industry demonstrates its environmental commitment through the choice of packaging.

It uses packaging which is made from partially recycled materials and is designed to be either recyclable (cardboard and plastic) or reusable (wood).

This approach reduces the environmental impact of products and promotes the principles of a **circular economy**, where materials can be reused or recycled at the end of their life cycle.



**Recyclable and reusable
packaging**

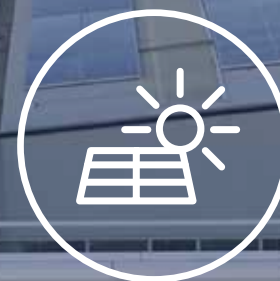
P,p

Photovoltaics

The Italian ceramic industry focuses on renewable energy.

For years, Italian ceramic companies have been investing in photovoltaic systems to improve the **sustainability of their industrial processes**.

The primary goal is to increase the share of renewable energy so as to meet energy demands while reducing CO₂ emissions.



+75%

increase in photovoltaic systems
installed in 2023 compared
to the previous year

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Quality

The Italian ceramic industry complies with strict quality standards, guaranteeing durable and reliable products.

With its technologically and environmentally advanced production processes and steadfast commitment to innovation and design, the Italian ceramic industry maintains its **reputation for excellence** on the global stage.



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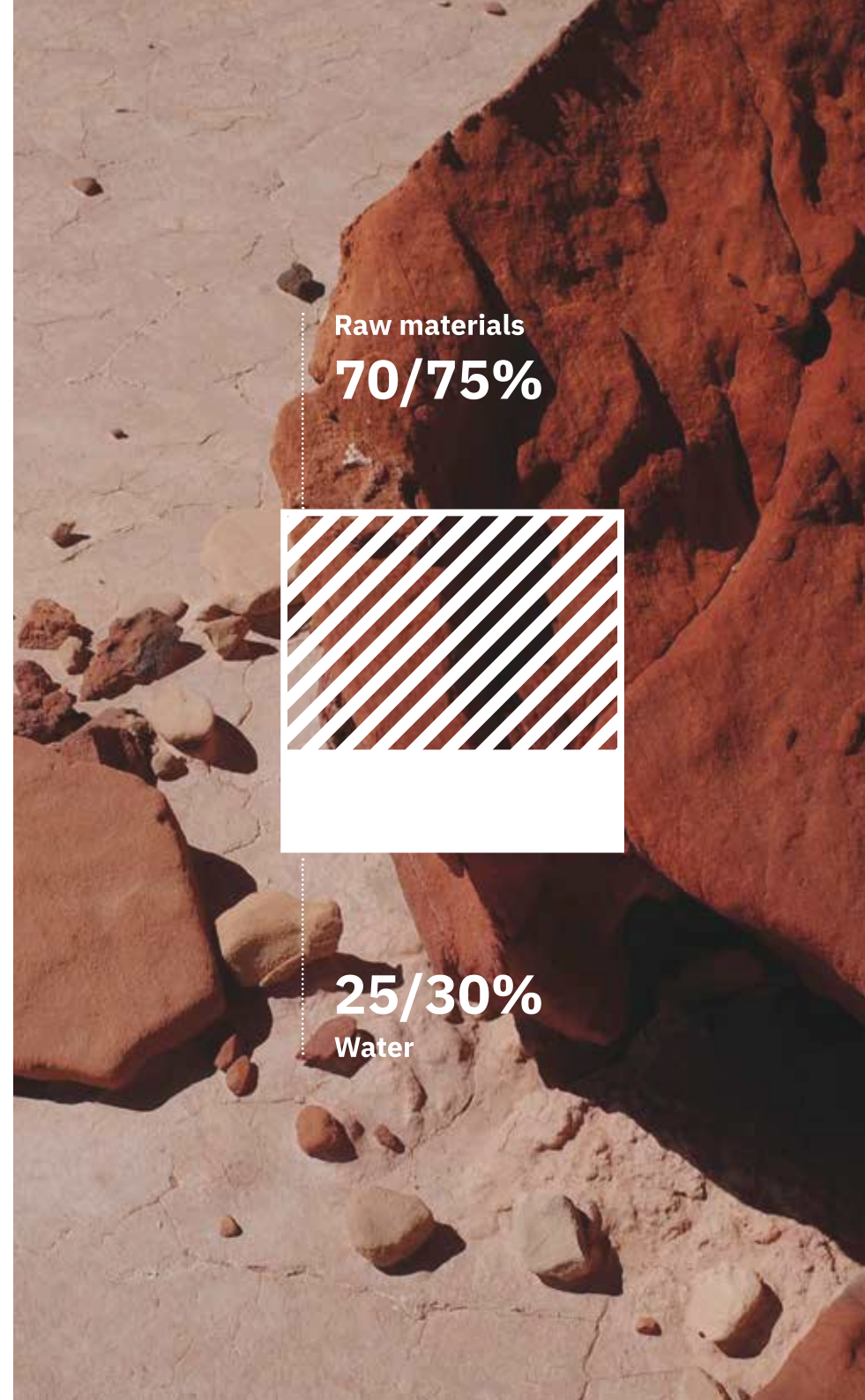
R,r

Raw materials

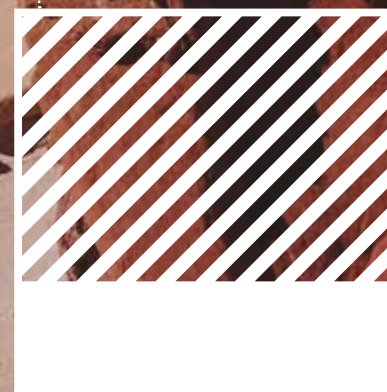
The Italian ceramic industry uses natural raw materials.

Italian ceramic products are composed of **clay**, **feldspar**, **sand**, **kaolin** and other mineral materials, which are among the most abundant resources in the Earth's crust. A total of 25-30% water is added during the body preparation process, mostly recovered from previous production cycles.

For further information



Raw materials
70/75%




25/30%
Water

R,r

Recovery

The Italian ceramic industry has introduced innovative processes to reuse almost all of its production waste.

Up to 100% of solid production waste is reused, meeting **8.5%** of the mineral raw material requirements of the production process. This reduces the need to extract new natural resources, such as sands and feldspars.



**More than
600.000**
tonnes of materials saved

S,s

Occupational safety

The Italian ceramic industry demonstrates a strong sense of responsibility towards its workforce.

Italian companies have introduced a series of measures to ensure the safety of workers, including thorough risk assessments, specific training, continuous investment in facilities, reorganisation of work practices and the use of personal protective equipment.

A key focus is **minimising the risk of injuries**, particularly musculoskeletal disorders, through a proactive approach in collaboration with organisations such as INAIL (National Institute for Insurance against Workplace Accidents).

For further information



T,t

Transparency

The Integrated Environmental Authorisation (AIA) is used to assess the environmental impact of the Italian ceramic industry.

Since 2010, Confindustria Ceramica and the Emilia-Romagna regional government have developed a specific protocol for the AIA reports drafted annually by ceramic tile manufacturers.

The sector report evaluates **35 environmental performance indicators**, offering a comprehensive view of the environmental impacts of production activities. This voluntary commitment to transparency is unique within the Italian and European production landscape and highlights how the Italian ceramic tile industry successfully balances economic competitiveness with sustainability.

For further information



The **AIA report** analyses in particular:



Atmospheric emissions



Water management and water balance



Use of materials



Energy consumption



Waste and scrap production

U,u

Responsible use of resources

The Italian ceramic industry also demonstrates its commitment to responsibility through daily practices promoting the sustainable use of natural resources in the production process.

Circular economy

Reuse of production waste and wastewater to reduce raw material consumption and the carbon and water footprint.

Energy efficiency

Investments to reduce energy consumption, such as cogeneration systems and heat recovery to power kilns and dryers.

Decarbonisation

Research and development of solutions for a gradual reduction in the use of fossil fuels.



V,v

VOC-free

Italian ceramics are the perfect choice for those seeking a safe material for either homes or workplaces.

Ceramic is a **naturally inert material**.

Unlike many other building materials, it does not emit volatile organic compounds (VOCs), thus ensuring excellent air quality and healthy indoor environments.



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W,w

Water

The Italian ceramic industry is committed to responsible water management.

Almost all tile factories operate without discharging wastewater. Virtually all process water is reused within the sector.

In 2022, these practices resulted in savings of **3.3 million** litres of water, greater than the volume of an Olympic-size swimming pool.

For further information



99%

of process water reused
within the sector



52%

of water needs met through
wastewater recycling

W,w

Welfare

Employee welfare is a top priority for the Italian ceramic industry.

By adopting an integrated approach encompassing health, safety, psychological well-being and sustainability, Italian companies have created a stimulating and rewarding working environment where people can truly fulfil their potential.

This includes organising **training and refresher courses**, adopting workplace safety **awareness programmes** and introducing **family support services**.



Z,z

Zero doubts

Only Italian ceramics are able to guarantee quality, sustainability and performance.

Choosing Italian ceramics means making a responsible decision. For years, Italian companies have demonstrated a constant commitment to environmental protection and human wellbeing.

Every product is the result of a **rigorous, transparent** and **certified** production process which minimises environmental impact and guarantees the healthiest possible buildings.





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