



## **EXPANDING THE MAX.**

The BUBLON-Technology.

The innovation in the expansion of fine-grained industrial minerals.

# THE PROBLEM

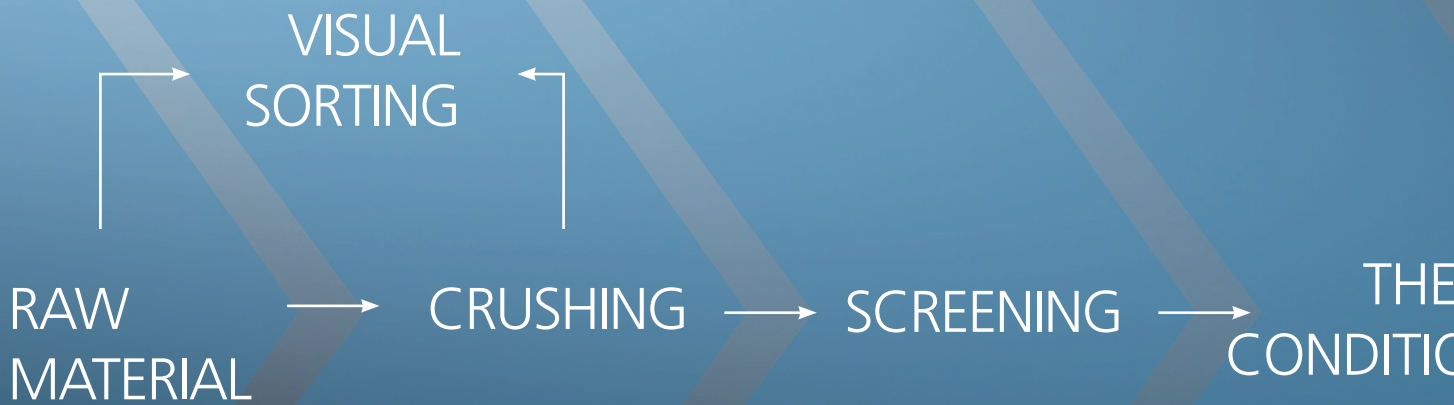
There is an increasing demand for high-quality mineral insulants and light-weight fillers. In conventional plants, perlite granules are expanded in an uncontrolled manner through abrupt heating which creates cracks and makes them burst.

The lower quality of these granules is of limited use for the construction and insulants industries.

# THE SOLUTION

The innovative BUBLON-Technology allows, for the first time, a controlled expansion of industrial minerals based on an entirely natural and nearly inexhaustible raw material. The light-weight granules are characterized by a **glazed and closed** surface offering excellent insulating properties and a wide variety of uses.

# THE BUBLON-TECHNOLOGY SETS NEW STANDARDS.



## IN PRODUCT QUALITY

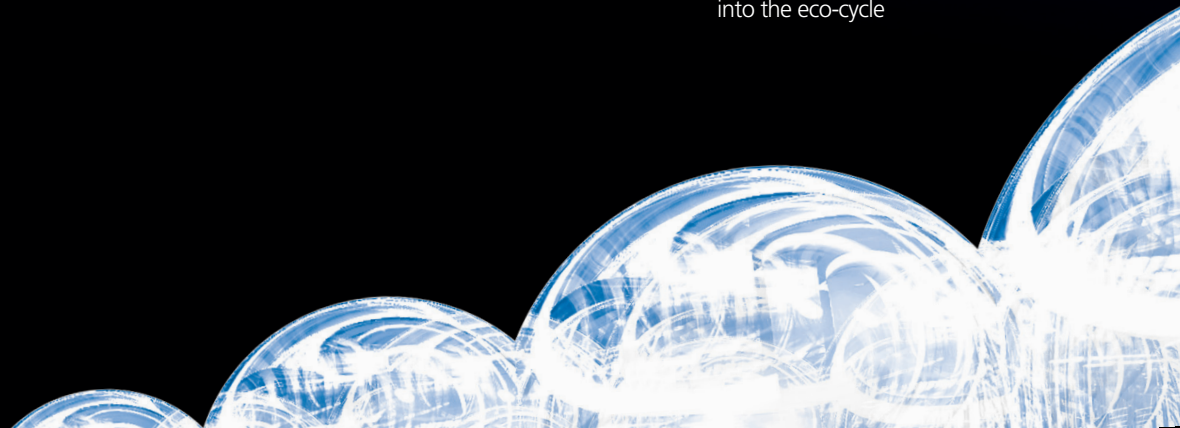
- light-weight granules with **glazed and closed** surface
- high mechanical strength, non-hygroscopic
- for diverse, innovative applications in the industry

## IN THE TECHNOLOGY ITSELF

- product characteristics can be specifically adjusted
- minimum energy consumption
- emission-free

## ECONOMICALLY AND ENVIRONMENTALLY

- use of purely natural and inexpensive raw materials
- energy transfer through radiation heat only
- 100 % recycling of the expanded perlite into the eco-cycle



**FROM RAW MATERIAL  
TO HIGH-QUALITY APPLICATION.  
COMPETENCE MADE BY BUBLON.**

ERMAL  
ONING



EXPANSION



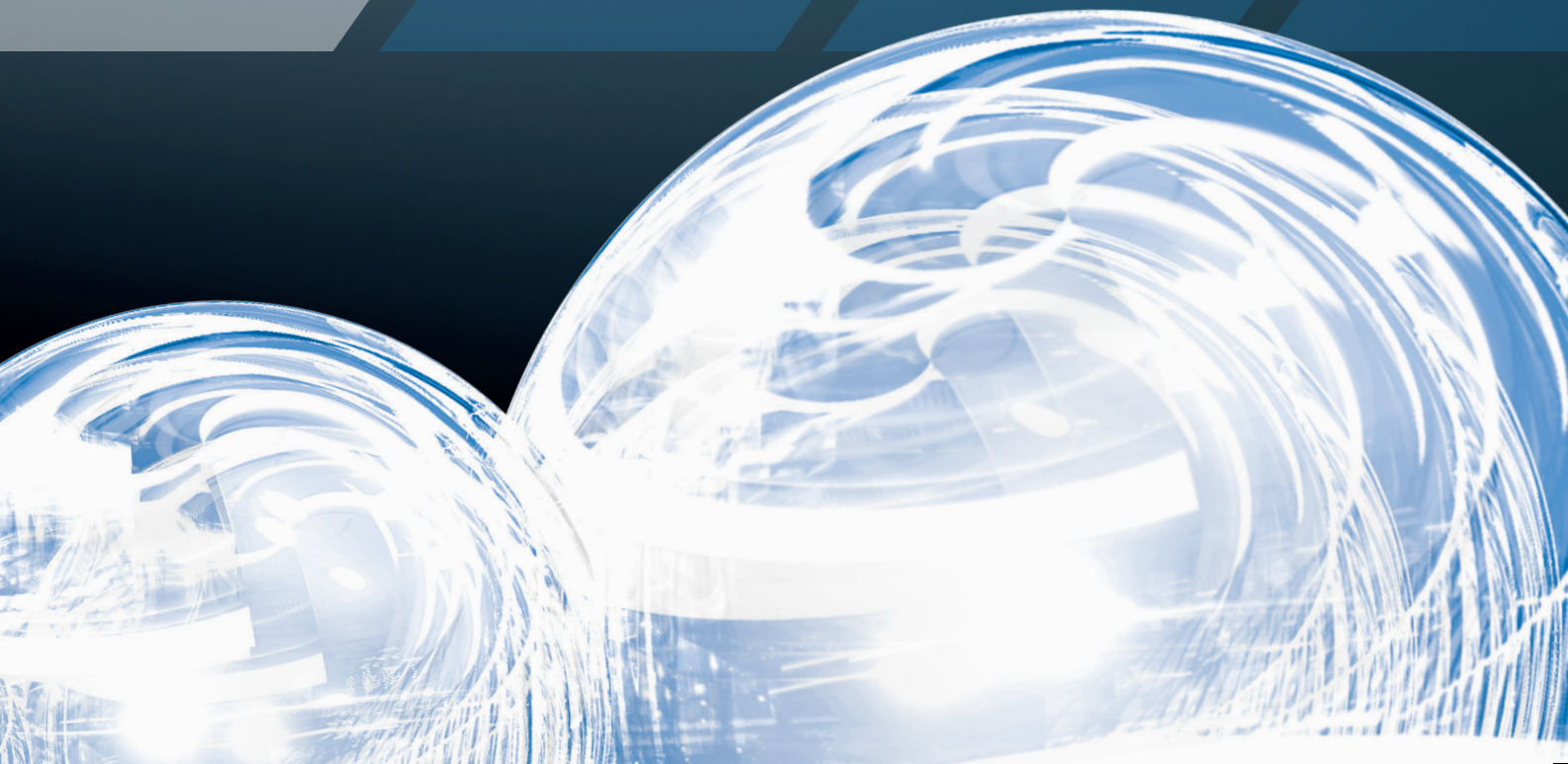
LIGHT-WEIGHT  
GRANULATE



STORAGE/  
PACKAGING



VISUAL  
INSPECTION



# THE BUBLON LIGHT-WEIGHT FILLER. UNIQUELY VERSATILE.



© shutterstock.com / Subbotina Anna

© shutterstock.com / scyther

The BUBLON-Technology can expand light-weight granules with different grain sizes which have a wide range of applications, such as in the construction industry, in fire protection, cryogenics, in the shipbuilding and automotive industries as well as in the aviation and plastic industries. With so many possible uses, there is almost no limit to this light-weight granulate.

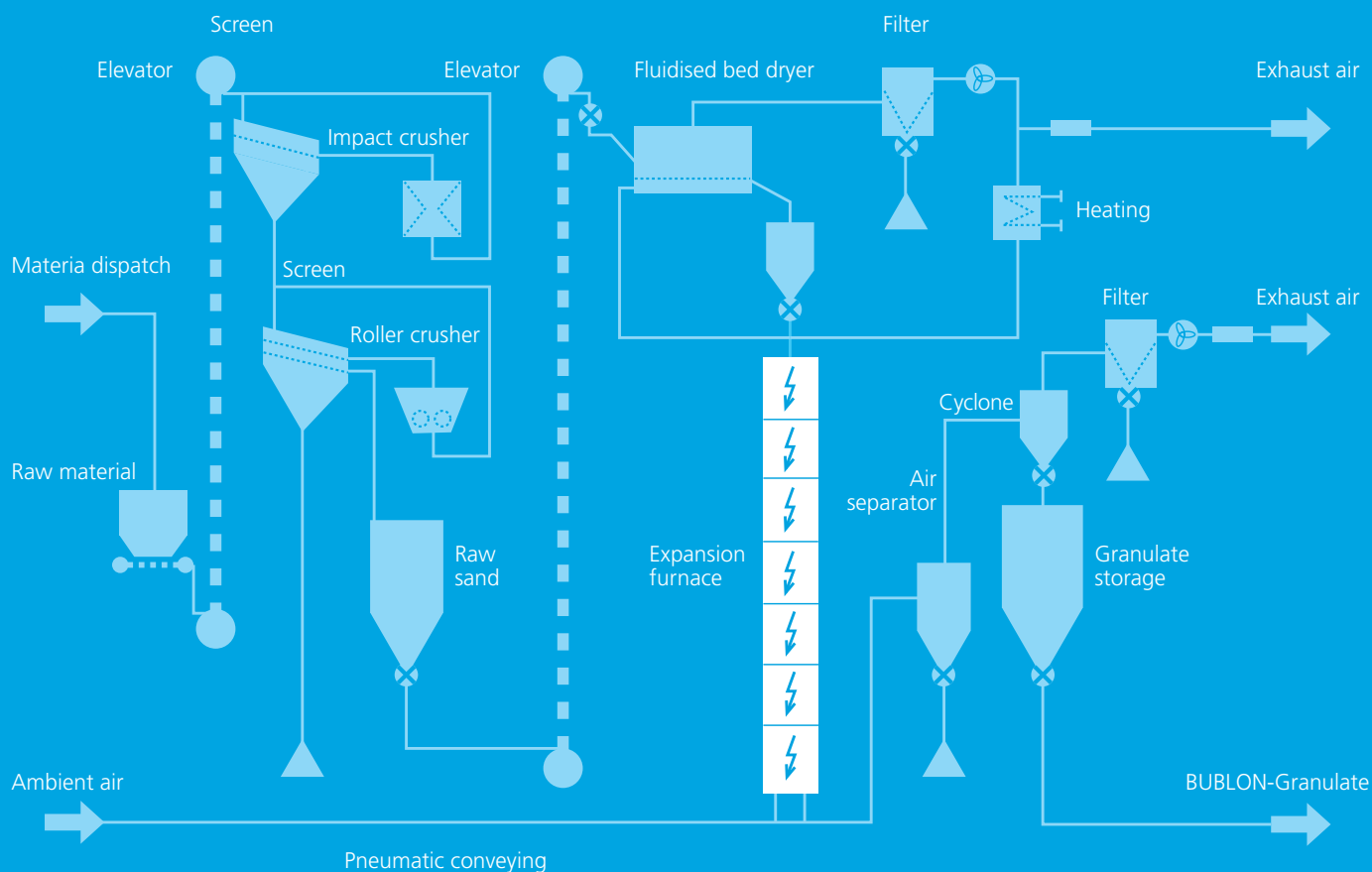
**bublon**   
EXPANDING THE MAX

# MODULAR DESIGN. THE BUBLON-TECHNOLOGY.

The starting point in the BUBLON-Technology is the raw sand silo. This is where the mechanically processed (crushed and screened) raw material is stored. The material is then fed through the down-stream rotary feeder. The elevator feeds the fluidised bed dryer. The fluid bed is operated in a closed cycle and is fuelled either electrically or with natural gas. After the thermal preparation, the raw sand is moved from the fluid bed into a container from where the raw sand is continuously conveyed further into the electrically heated expansion furnace. The energy input is transformed entirely into heat for the expansion of the granulate. The usually inevitable hot and dusty exhaust gases are avoided. In further processing stages the final light-weight material can be packaged, palletized and stored.

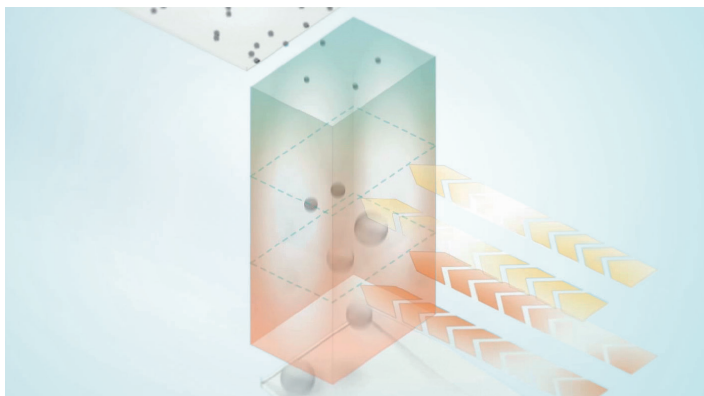
The principal advantages of BUBLON-Technology are

- optimum utilization of the raw material
- unique product properties of the expanded light-weight filler thanks to its **glazed and closed** surface
- individually adjustable product properties thanks to the modular design
- user-friendly process control
- the flow rate can be individually adjusted
- up to 50% less energy consumption
- emission of dust and fine particles is avoided
- emission-free expansion as a contribution to CO<sub>2</sub>-reduction

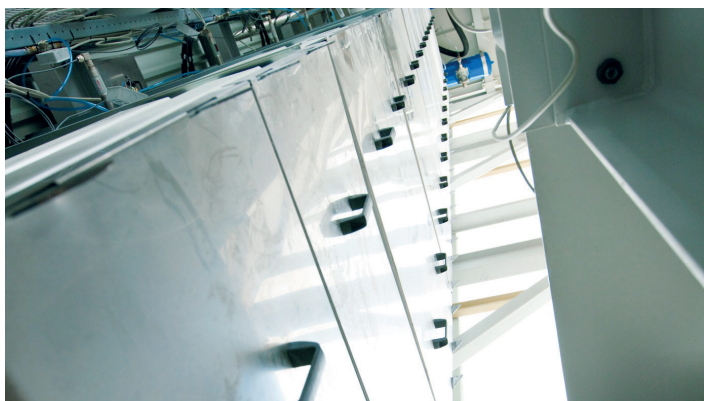


# THE SOLUTION. THE CONTROLLED EXPANSION.

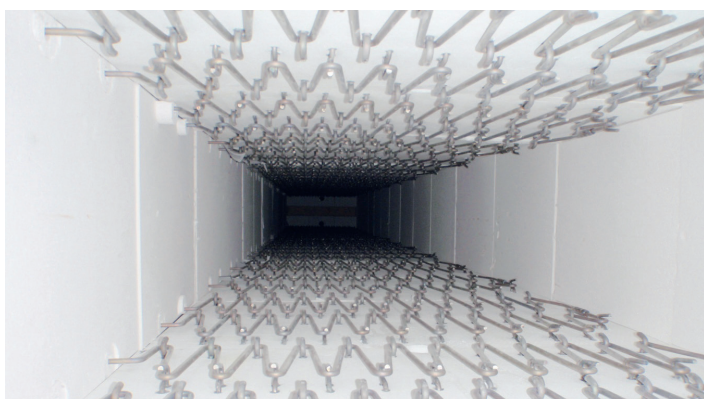
With the innovative BUBLON-Technology, the temperature in the expansion furnace can be individually adjusted in different zones. The expansion furnace is heated electrically only in vertically arranged heating zones and modules, allowing a very finely adjustable temperature control. The expansion rate of the final light-weight material can be optimized through the number of modules used and optional air-stream sorting. This controlled expansion ensures light-weight materials with excellent product properties such as the **glazed and closed** surface. The expansion furnaces can be expanded by additional modules and it is even possible to operate several units in parallel.



The unique BUBLON-Technology. Controlled thermal expansion of industrial minerals to light-weight fillers.



The desired quality of the final product determines the number of modules used in the expansion furnace. The system is adaptable and expandable to several modules and several parallel shaft furnaces.



The expansion furnace is heated electrically only in vertically arranged heating zones.

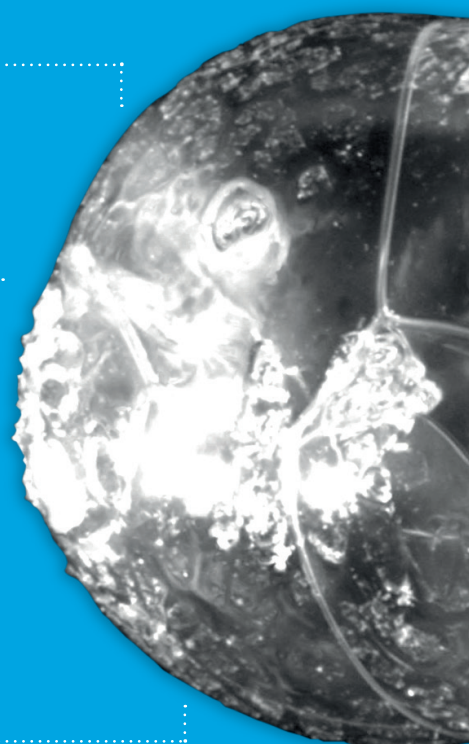
# UNIQUE. TODAY'S LIGHT-WEIGHT FILLER FOR TOMORROW.

glazed and closed surface

high mechanical strength

incombustible

high abrasion resistance



## Verification of **glazed and closed** surface.

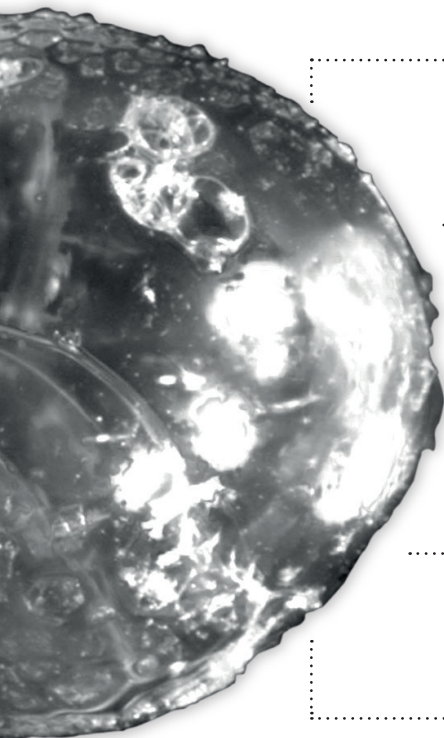
The volumetric mass of the expanded perlite in its normal and ground-up state is compared using a helium pycnometer. The resulting quotient is a measure for the **glazed and closed** surface.

Sample	Volumetric mass of the sample (g/cm <sup>3</sup> )
BUBLON-Granulate with <b>glazed and closed</b> surface	0,3372
BUBLON-Granulate after grinding	1,8111
Conventional expanded perlite	1,2626
Conventional expanded perlite after grinding	1,9106

Expanded perlite with **glazed and closed** surface has a volume 3 to 4 times higher when compared to conventional expanded perlite.



# DIFFERENT GRANULATES WITH ONE TECHNOLOGY.



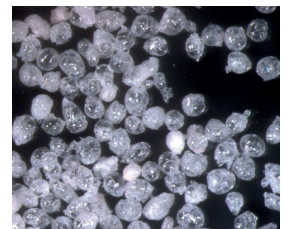
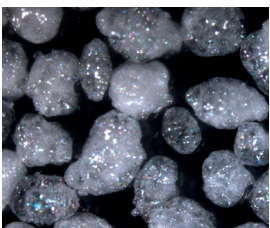
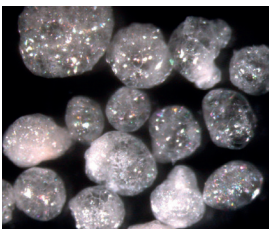
barely dusty

no water absorption

excellent insulating properties

adjustable bulk density and grain sizes

easy on the environment





## ALWAYS ON YOUR SIDE. THE BUBLON KNOW-HOW.

Industrial companies have a great demand for individual process optimization. As a leader in research and know-how in expansion technology, Bublon develops innovative and individual solutions for entire turnkey plants for its customers. True to its claim "EXPANDING THE MAX", Bublon's wide range of engineering and support services is characterized by

- a wide range of design and engineering services
- optimization of each individual process stage
- customized adjustment of the core process of controlled expansion
- competent use of group-owned highly specialized processing equipment
- individual after-sales support



## INDIVIDUAL ADJUSTMENT IN THE PILOT PLANT.

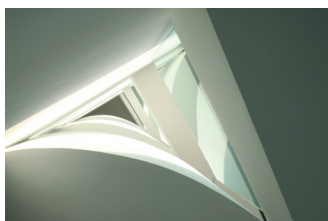
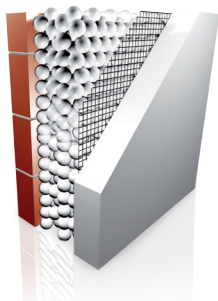
In the pilot plant at the company's base in Gleisdorf, Austria, original materials provided by the customer are used in a series of tests in order for specific expansion processes to be tried, optimized and adjusted exactly to the customer's needs.

# FOR THE HIGHEST DEMANDS OF THE CONSTRUCTION INDUSTRY.



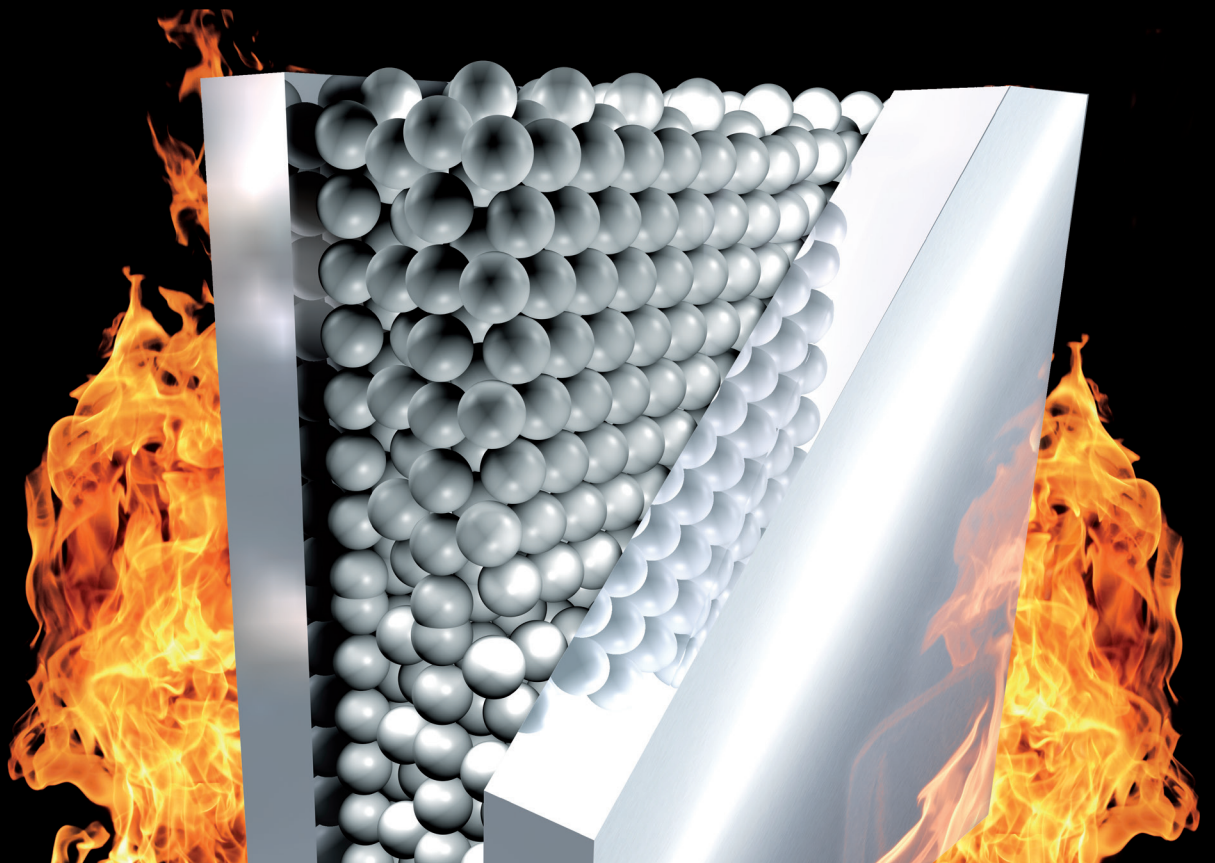
Symbolic image

With BUBLON-Technology, fine-grained industrial minerals are expanded to high-quality light-weight fillers with a **glazed and closed** surface. Thanks to the **glazed and closed** surface and the resulting low dust generation and low water absorption these granules are ideally suited for the production of light plasters, insulating boards and acoustic panels as well as complex designs for exterior insulation and finishing systems. The light-weight fillers are diffusion-open, pollutant-free, resistant against vermin infestation and they can be re-introduced completely into the eco-cycle at the end of their lifetime as soil conditioners. In this way, Bublon makes a valuable contribution to the protection of our environment.

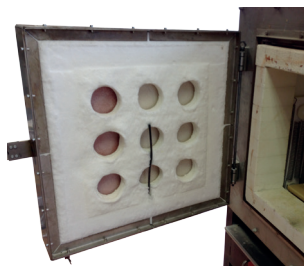


Plasters for fire protection applications and thermal rehabilitation of old buildings. Compliance with all fire-resistance ratings.

# BE SAFE. IDEAL PROPERTIES FOR FIRE PROTECTION.



An important advantage of the light-weight granules expanded with BUBLON-Technology is their excellent fire protection properties. Because they are incombustible, they meet the requirements of the highest fire-resistance rating and can be used in the production of fire doors, decorative fire protection, chimney bricks and coating stucco.



Test sample fire protection slabs  
and oven details.

Much more than a corporate slogan: „Expanding the Max“ not only means the expansion of industrial minerals to produce light-weight granules but also

- maximum know-how and maximum expertise for our customers
- maximum added value and sustainability through development of industrial solutions
- and last but not least maximum success for our customers.

Bublon GmbH is an independent subsidiary of world market leader Binder+Co and handles the global commercialization of the BUBLON-Technology, which was first presented to a wide expert public in the autumn of 2011.

The core process, which is the controlled thermal expansion, allows the production of a purely natural light-weight granulate for construction materials with excellent insulating properties. Bublon GmbH offers modularly designed plants. In addition to the core process of expanding, other process stages are performed using group-owned machinery and equipment such as the up-stream process stages of grinding, visual sorting, screening and thermal conditioning as well as down-stream process stages such as visual inspections, packaging and palletizing.

The BUBLON-Technology expands naturally occurring raw materials to up to 20 times their original volume by heating them up to more than 800°C. The resulting, purely natural light-weight fillers are characterized by their **glazed and closed** surface; they are barely dusty, non-hygroscopic and also offer a high mechanical strength. The innovative light-weight granules are ideally suited for the production of insulating boards and fire protection slabs and for use in the plastics industry as well as the shipbuilding, aviation and automotive industries.

The BUBLON Pilot Plant in Gleisdorf, Austria



