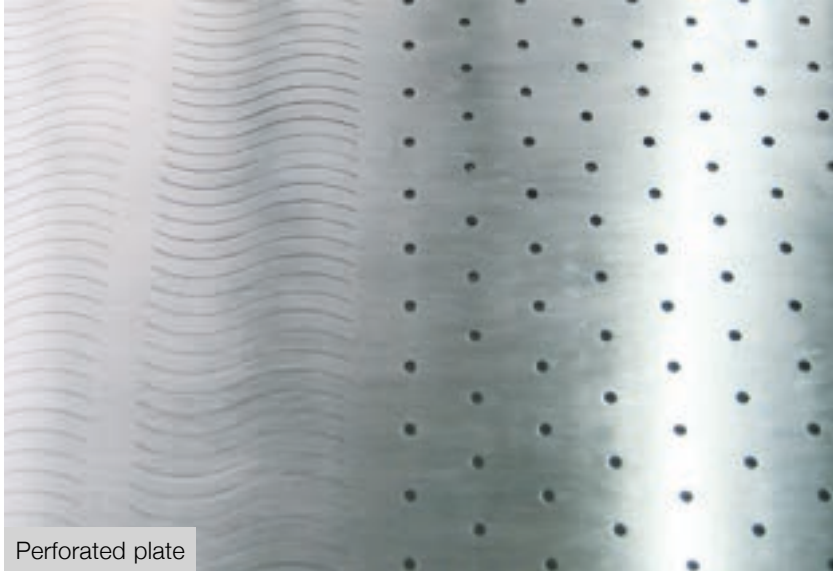


**WE
PROCESS
THE
FUTURE**

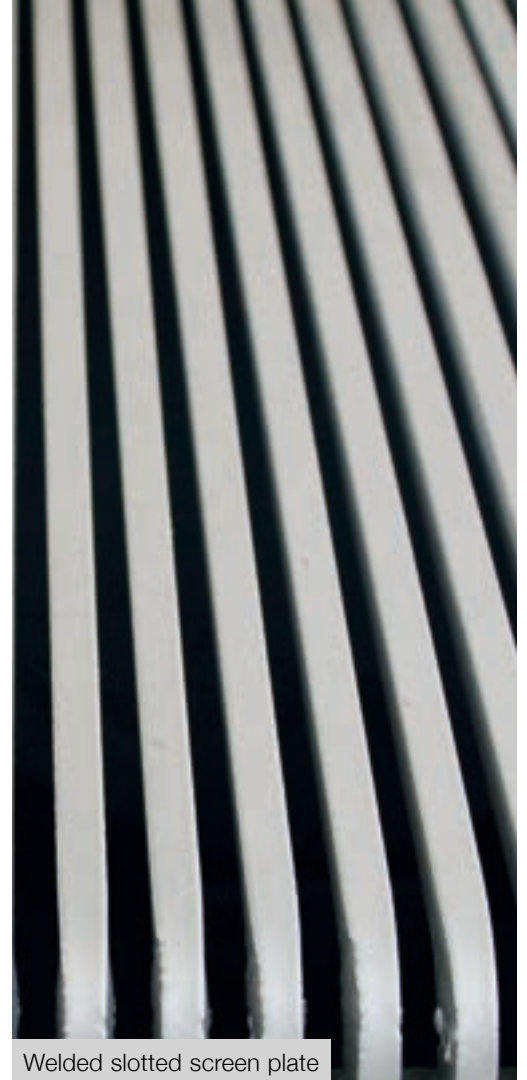
binder+co



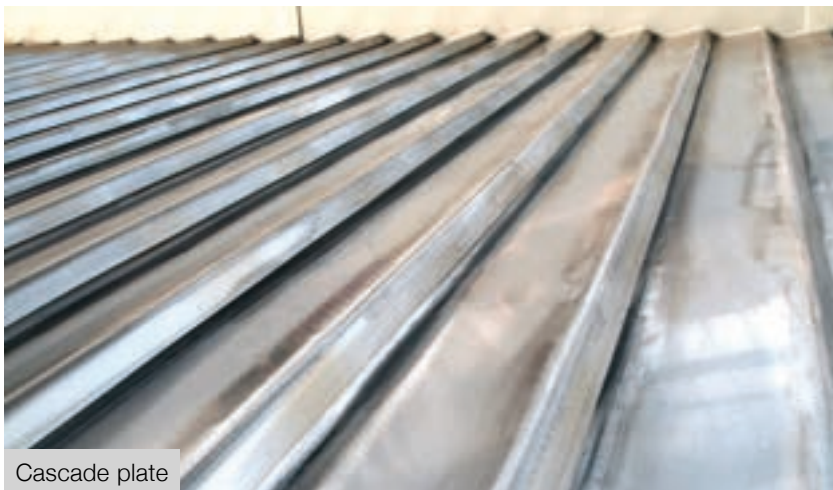
DRYON
DRYING & COOLING
**INDIVIDUAL SOLUTIONS FOR YOUR
SUCCESS, FROM A SINGLE SOURCE**



Perforated plate



Welded slotted screen plate



Cascade plate



BINDER+CO PROCESSING EXPERTISE FROM A SINGLE SOURCE

Bulk materials processing is a complex process, and one that we at Binder+Co have a full command of. As a company group with over 130 years of experience, we offer six central processing steps from a single source: crushing, screening, wet processing, drying/cooling, sorting, bagging and palletizing.

Since our founding by Ludwig Binder in 1894 we have become one of the leading companies in bulk materials drying. Our special focus is on understanding the process as a whole. Only those who master the entire process chain can ensure functioning interfaces and offer sustainable solutions.

DRYING TECHNOLOGY WITH THE BROAD VIEW

Our deep understanding of the interplay of all processing steps enables us to develop customized high-performance solutions. A properly designed drying process gives our customers key economic and technological benefits.

Top energy efficiency is indispensable for the sustainable and economical operation of modern drying systems, and has direct consequences for CO₂ footprints.

Thanks to Binder+Co's comprehensive process expertise and clear understanding of the requirements for drying systems, we are able to optimize processes for the efficient use of waste heat. The DRYON's drying and cooling zones provide for a wide range of drying process configurations, from using internal waste heat to incorporating external heat sources.

The result is a measurable reduction in the operator's CO₂ footprint, and clear economic **and** sustainability advantages.



RELIABLE
CRUSHING



EFFICIENT
SCREENING



WET
PROCESSING



DRYING &
COOLING



SENSOR-BASED
SORTING



PACKING &
PALLETIZING

Binder+Co DRYON fluidized bed dryers are a byword for careful and efficient drying. Our decades of experience in the thermal processing of bulk materials of all kinds qualify us not just for the construction of custom individual machines, but also make us a leading supplier of complete systems.

The requirements of our customers are our highest priority. Only ideal system design and the proper treatment of bulk materials give customers business and technical advantages.

CONSTRUCTION RAW MATERIALS & INDUSTRIAL MINERALS

- Sand & grit
- Gravel
- Marble
- Dolomite
- Amphibolite
- Graywacke
- Basalt
- Granite
- Gneiss
- Quartz sand
- Feldspar
- Gypsum
- Clay
- Bentonite
- Lava
- Perlite
- Magnesite
- Slate



In the rock and soil industries, DRYON fluidized bed dryers ensure the even drying of bulk materials, providing a dependable basis for downstream processing steps. Our fluidized bed technology delivers stable product quality with low-wear, maintenance-friendly operation.



If the material needs to be cooled after drying, both steps can be done on a single DRYON. Heat recovery from the cooling zone keeps thermal energy consumption for drying low.

WE DRY & COOL IT ALL!

SALTS

- Potash
- Rock salt
- Sea salt



The DRYON is a proven performer for preheating and drying potash. Static fluid bed dryers are typically used for this. Vibrating fluidized bed dryers are the state of the art for post-processing. In addition to drying table salt, the DRYON is used in the thermal treatment of ammonium sulphate for the fertilizer industry.

CHEMICAL PRODUCTS

- Fertilizer
- Citric acid
- Sodium perborate
- Calcium chloride
- Sulphates



The constant vibration principle ensures consistent product quality in the chemical industry. DRYON fluidized bed dryers deliver the desired results even with hygroscopic or temperature-sensitive materials.

RECYCLING

- Glass cullet
- Biomass



Drying of glass cullet is an essential step in the recycling of waste glass. The DRYON helps make the cullet easier to separate for sorting. Organic substances can be aspirated during the drying process. The gentle drying in the fluidized bed results in significantly less cullet crushing, for much less glass loss than in other drying processes.

Biomass is used in many ways, from energy production to animal husbandry. With the DRYON we offer gentle, energy-efficient biomass drying.

PLASTICS

- PE/PET flakes
- PE/PET granulate



The DRYON processes a wide range of plastics, such as PE and PET, to evenly dried, dust-free granulate. Its vibrating fluid bed ensures gentle handling of the feedstock.

The DRYON also performs notably economically in the drying and crystallization of plastics. The air recirculation in the closed crystallization circuit reduces both energy consumption and exhaust volumes.

WE DRY & COOL IT ALL!

FOOD AND FEED

- Foodstuffs
- Feed



Foodstuffs such as cereals, tea and coffee, and animal feeds, are gently dried and cooled with the DRYON to make them packageable and storable.

COAL, IRON AND STEEL

- Coal
- Coke



In the coal and coke industry the DRYON is used for both drying and preheating coal and coke. An explosion-protected process is used for thermal treatment in the undersize material range.



CONSISTENT PRODUCT QUALITY, TOP AVAILABILITY AND ECONOMY

Drying and cooling are key steps in the processing of bulk materials in many industries. Sand and grit, coal, crystalline products, foodstuffs and animal feeds as well as waste products need to be dried before they can be sent on to downstream processes. Drying is a prerequisite for the quality of the final product, and cuts transportation costs as well as ensuring storability and longevity. Drying is also necessary for downstream process steps like screening and sensor-based sorting. With the DRYON fluidized bed dryer we offer a reliable and product-friendly system for drying and cooling bulk materials.

Fluidized bed drying offers key benefits in processing bulk materials – low thermal energy needs, optimum heat transfer due to the airflow around the particles, short and thereby gentle product dwell times, and the option of drying and cooling in a single work step.



The DRYON by Binder+Co is particularly cost-efficient and energy-saving, since internal heat recovery from the drying process substantially reduces energy needs. This is made possible by a closed circuit between the cooling and drying zones.

The heat in the exhaust air from the cooling zone is recirculated to the drying zone. Thus, the amount of thermal energy needed for drying is significantly lower than in open systems. The use of external heat sources can further reduce the CO2 footprint.

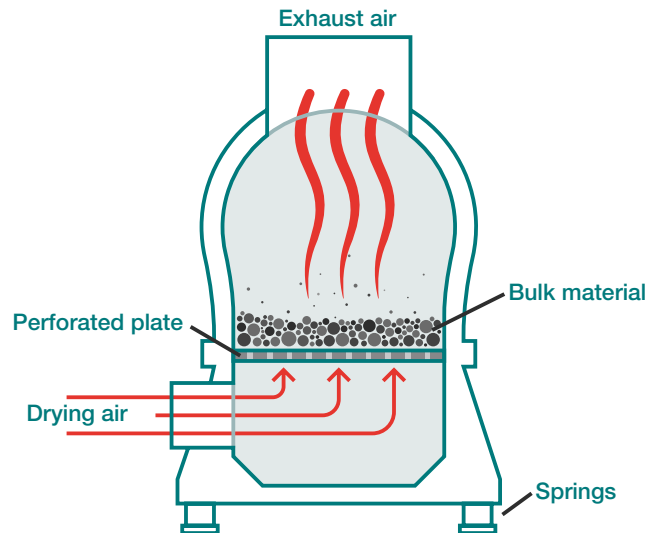


FUNCTION

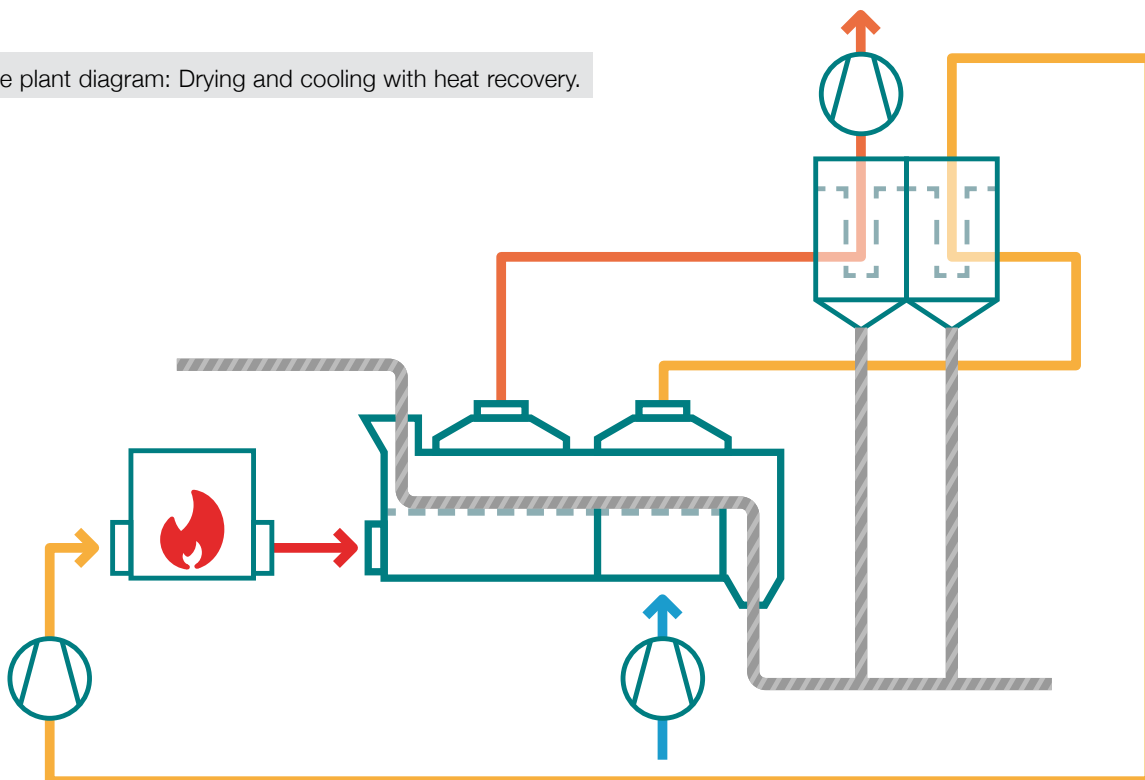
The material is fed onto a conveyor plate. The plate is perforated so that air can pass through it, hot or cold for drying or cooling as the case may be. The material moves transversely and perpendicular to the airflow for a cross-current effect. The airflow around each individual particle gives good thermal transfer.

The material can be loosened entirely by air, known as static drying, or with the help of vibration.

Fluidized bed drying has lower thermal requirements than other drying methods. Dwell times are very short in drying and cooling in a fluidized bed. DRYON fluidized bed dryers can be made with drying surfaces from 0.2 m² to 60 m².



Sample plant diagram: Drying and cooling with heat recovery.



The heat extracted from the material in the cooling zone is returned to the drying zone by the secondary air system, for a substantial reduction in thermal energy consumption.



VIBRATING FLUIDIZED BED DRYERS

Vibrating fluidized bed dryers are ideal for bulk materials with a wide range of grain sizes. Their special advantages are:

- The vibration enables optimum drying of products with fluctuating grain sizes, even at low airflow speeds.
- When drying products with a wide range of grain sizes, the vibration prevents segregation of the material by loosening up coarse grains.
- Product dwell time can be changed by adjusting the vibrations.
- The vibration moves the particles through the dryer, making emptying simple. Switching from one product to another is quick and easy.



DRYON double-mass vibration system for grain sizes up to 70 mm and machine sizes up to 60 m².

Depending on the feed behaviour and machine size, Binder+Co can draw on three different vibration systems to offer the ideal dryer for the respective application.

A counter-vibration frame can be installed to reduce dynamic loads even in **single-mass vibration systems**. For longer dwell times we provide vibration systems with air suspension. For higher feed capacity we offer machines up to 20 m long and 3 m wide. These use our proprietary **double-mass vibration system**, which generates almost no dynamic loads and requires only a small amount of electrical drive power.



DRYON single-mass vibration system for grain sizes up to 40 mm and machine sizes up to 16 m².



DRYON single-mass vibration system with air suspension especially for light feedstocks, longer dwell time and higher feed capacity.

STATIC FLUIDIZED BED DRYERS

Static fluidized bed dryers are used for uniform, fine-grained (< 6 mm) bulk materials. They have certain advantages:

- Some of the energy can be provided by internal heat exchangers, reducing the amount of air needed and thus the necessary fluid bed area, as well as producing less exhaust.
- Static fluidized bed dryers give high throughput in less space.
- The greater layer heights reduce the footprint of the machine.
- The weight of a static DRYON dryer is low, and the substructure is not subjected to any dynamic loads.



Static fluidized bed dryer for grain sizes to 6 mm and high feed capacity, with optional heat exchanger.



SERVICE FOR SMOOTH OPERATION

Our dryers are built tough and designed for long-term use. But if there is a malfunction, we're there quickly.

- Fast spare parts supply with efficient shipping logistics.
- We take care of repairs and regular maintenance, to ensure reliable operation with best performance.
- Comprehensive assistance and advice.
- 24/7 service hotline for fast problem resolution.
- We train your staff in operation and maintenance.

BINDER+CO TESTING CENTER EVERYTHING UNDER ONE ROOF

To determine the optimum machine configuration we run technical feasibility trials in our testing center, replicating our customers' requirements to develop solutions that we back up with performance guarantees. The facility includes test machines for bulk material screening, dewatering, sorting and drying.



DRYON FLUIDIZED BED DRYERS BY BINDER+CO

Drying and cooling are fundamental steps in the processing of bulk materials. They are critical for downstream processing steps and ultimately for product quality. With our broad expertise and extensive product portfolio we provide the prerequisites for efficient plant layouts and the proper conditioning of bulk material. Your business and technical advantage is our goal!

A stable and energy-efficient drying process starts with the right design. DRYON fluidized bed dryers provide consistently high product quality, reliable processing and sim-

ple maintenance. Each system is developed in close consultation with our customers – precisely configured for the material, operating conditions and goals.

In doing so, we consider drying and cooling as a single unit, always with energy efficiency in mind. Therefore we use both internal heat recovery as well as external waste heat sources, to keep the CO₂ footprint as small as possible.



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