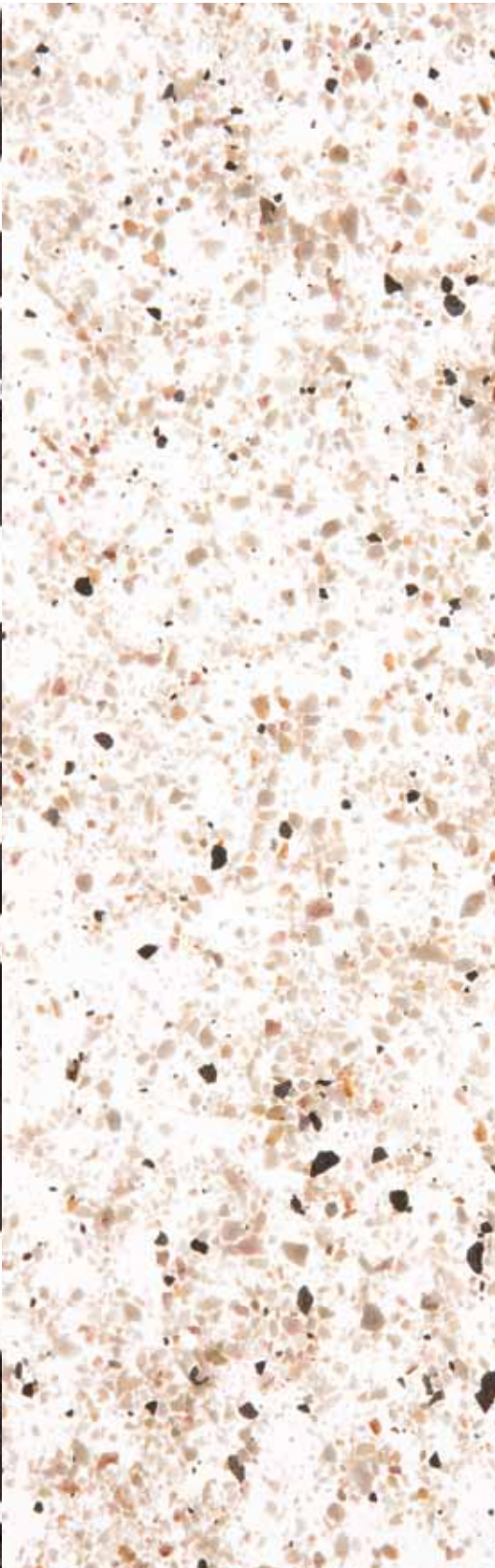


DRYON

Drying and Cooling with Outstanding Quality





Task:

Drying and cooling are elementary processing steps in the preparation of bulk materials in all sectors of industry. Bulk goods such as sand and grit, coal, crystalline products, foodstuffs and animal feeds as well as waste products have to be dried before they can be fed into downstream processes.

The key factors alongside consistently high quality are excellent availability and reliability of the drying plant plus its cost-efficient operation. DRYON is particularly impressive by virtue of its operating efficiency: The heat emitted in the cooling zone is used for drying thus reducing the energy requirement by up to 15%.

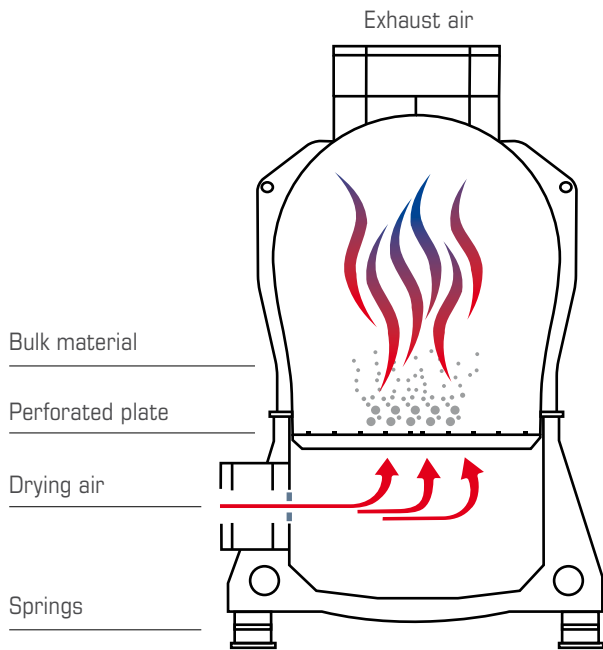
Binder+Co, with its extensive experience in the thermal treatment of all types of bulk materials and its process engineering expertise, is a leading supplier in the drying technology field.



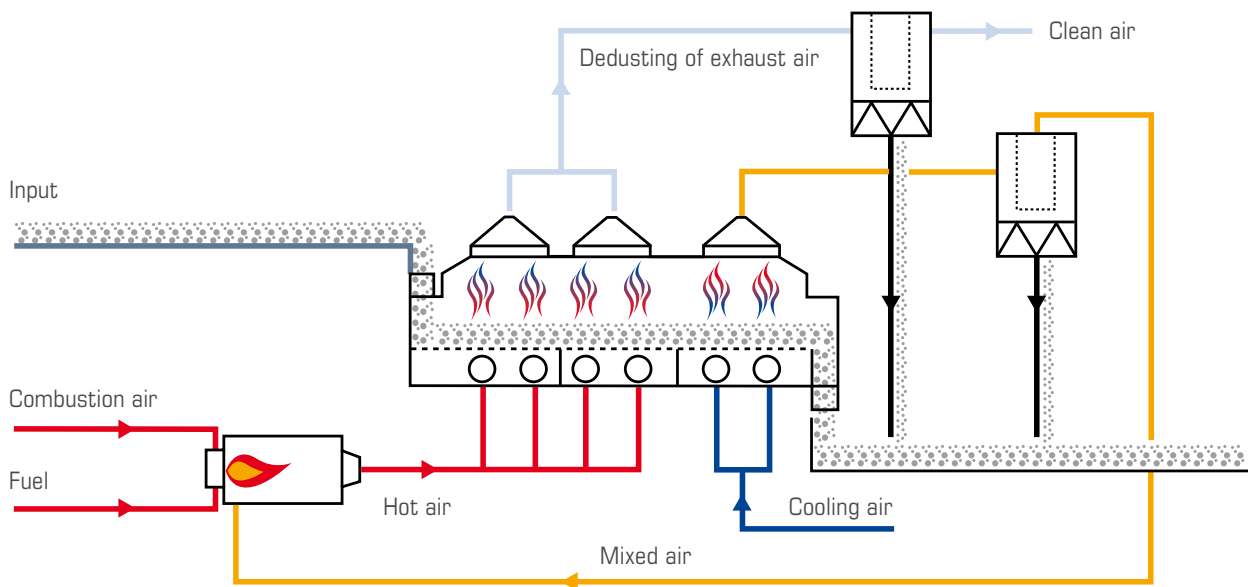
Technology

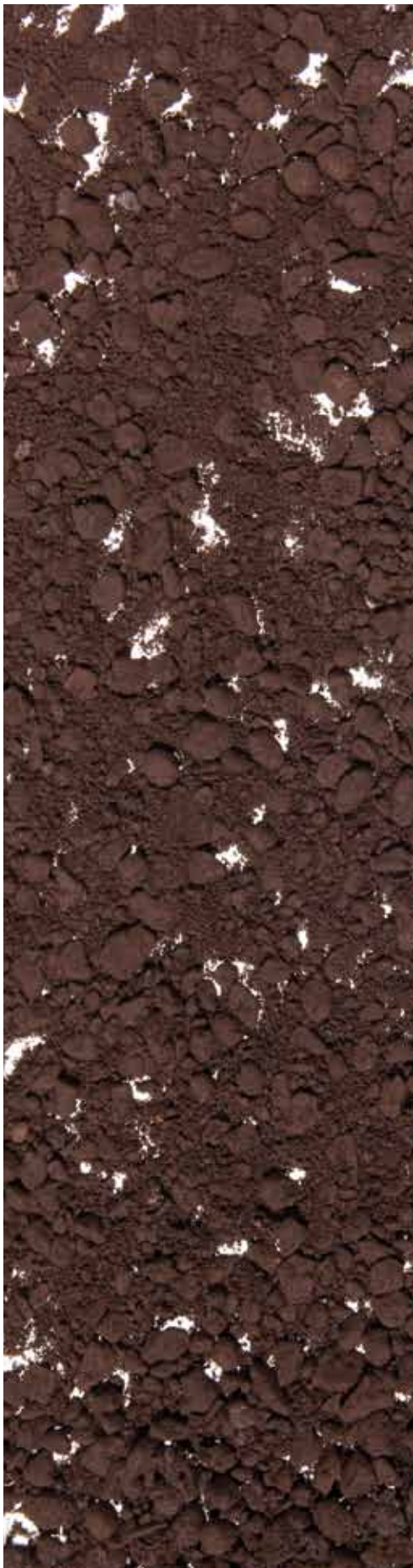
DRYON works on the fluidised bed principle: The product to be dried/cooled in the dryer is fed onto a perforated base, e.g. a perforated plate or special laser cut plates, and a stream of hot or cold air or other gaseous drying medium passes vertically upwards through the product from below. In the process the product is heated and the moisture eliminated.

DRYON fluidised bed dryers may be constructed with drying surfaces ranging from 0.2 m² to 60 m² as required.

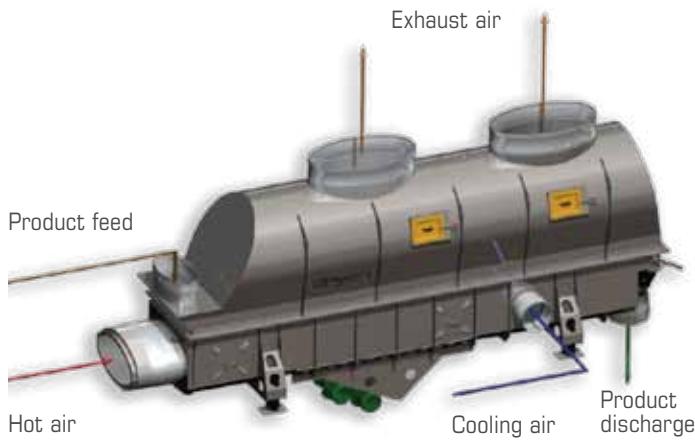


Plant illustration
Drying and cooling with heat recovery





Single mass vibration system

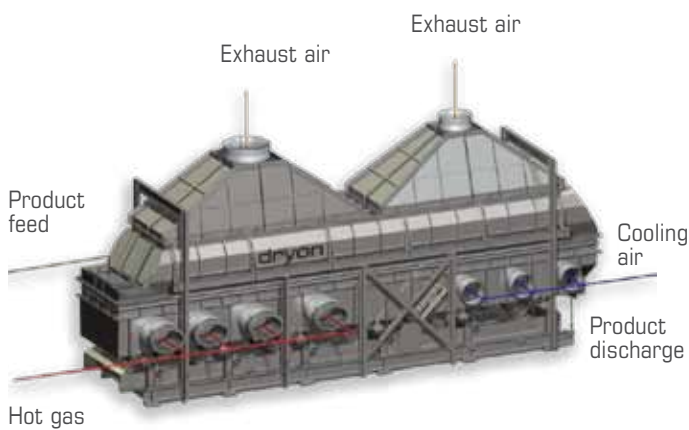


Vibrating fluidised bed dryers

Vibrating fluidised bed dryers (free-running oscillation or resonance systems) are used for bulk materials with a wide range of grain sizes. Their particular advantages are:

- The vibration enables optimum drying of products with fluctuating grain sizes even at low gas velocity.
- The vibration prevents the formation of bubbles in fine-grained products thus ensuring enhanced energy efficiency.
- When drying products with a wide range of grain sizes, the vibration prevents segregation of the material by loosening up coarse grains.
- The dryer can be emptied with ease as the particles are transported through the dryer by means of vibration. Changeover from one product to another is therefore quick and easy.
- Adjusting the vibration influences the product residence time and has a particularly beneficial effect on quality.

Resonance vibration system



The technical concept of the vibrating fluidised bed dryer emerged from the screening machines that Binder+Co has developed and constructed since the 1950s. DRYON with a length of up to 8 m is designed as vibrating screen with to unbalance motors. A counter-vibration frame can be installed to reduce dynamic loads even in single-mass vibration systems. Machines up to a length of 20 m and a width of up to 3 m are constructed for higher feed capacities. In this case the resonance vibration principle is used. The result is low dynamic forces even with large vibrating masses.



Static fluidised bed dryers

Static fluidised bed dryers are used for uniform and fine-grained bulk materials. They have the following advantages:

- Some of the energy required is provided by internal heat exchangers which reduces the amount of air needed and also reduces the necessary fluid bed area.
- High throughput rates can be achieved using the static fluidised bed dryer.
- Smaller footprints are necessary due to larger layer heights.
- The weight of the static DRYON dryer remains low; the substructure is not exposed to any dynamic loads.

Areas of application

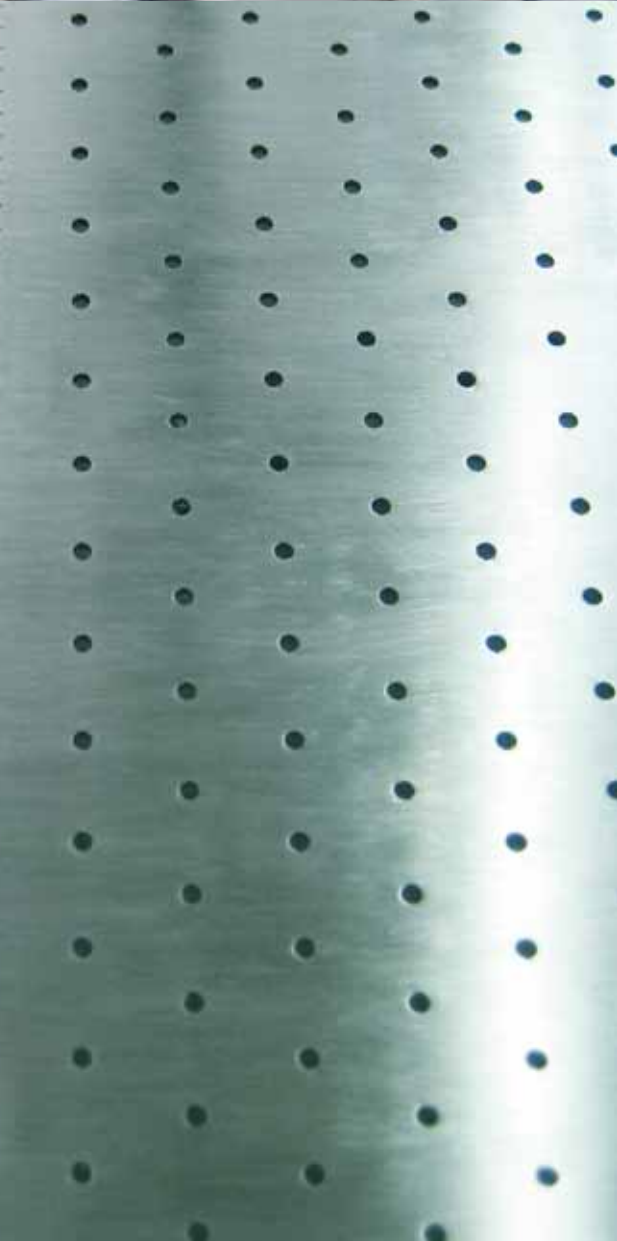
Construction raw materials

Drying forms the basis for further processing or refinement of the bulk materials when processing rocks and soils. DRYON ensures efficient drying and constant quality when drying moist input material. In many cases, the material must be cooled after drying. With DRYON, both process steps can be carried out in a single machine.

DRYON is particularly cost-efficient and energy-saving: The energy-saving principle of heat recovery can be implemented due to a closed circuit between the cooling and drying zones. The quantity of heat contained in the exhaust air of the cooling zone which is withdrawn from the cooled material is recirculated to the drying zone. Therefore, the amount of thermal energy needed for drying is significantly lower than in comparable systems.

Coal

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





Areas of application

Plastics

DRYON ensures that a wide variety of plastics, such as PE and PET, are processed into dust-free, evenly dried granules. DRYON's vibrating fluidised bed ensures gentle treatment of the input material.

DRYON is also impressively cost-efficient in the drying and crystallisation of plastics: Recirculation of the air in the closed crystallisation cycle reduces both energy consumption and the volume of exhaust gases.

Salts

DRYON has proven itself particularly effective in many applications in the drying and post-treatment of potash salt. DRYON is also used successfully for drying table salt for the food industry and for the thermal treatment of ammonium sulphate for the fertiliser industry.

Chemical Products

The principle of constant vibration also ensures consistent quality of the product in the chemical industry. DRYON delivers the desired results even with hygroscopic or temperature-sensitive materials.

Recycling

Drying of glass cullet is an essential process step in the recycling of waste glass. DRYON ensures an uninterrupted supply by preventing material blockages at transfer points making the cullet easier to separate for the sorting process. Undesirable organic substances can also be aspirated during the drying process.

Foodstuffs and Animal Feeds

DRYON is used to dry and cool foodstuffs such as cereals, tea and coffee as well as pet foods and feeds for fattening animals so that they are suitable for packaging and storage.

DRYON by Binder+Co ensures gentle and efficient drying in a wide range of different industries.

Decades of experience in the thermal treatment of all types of bulk materials not only qualify Binder+Co to design and build customised systems but also make the company a leading supplier of turnkey plants.

The requirements of our customers are our top priority. Optimum plant design and correct processing of the input material give our customers a competitive edge both technically and economically.

we process the future

2011

