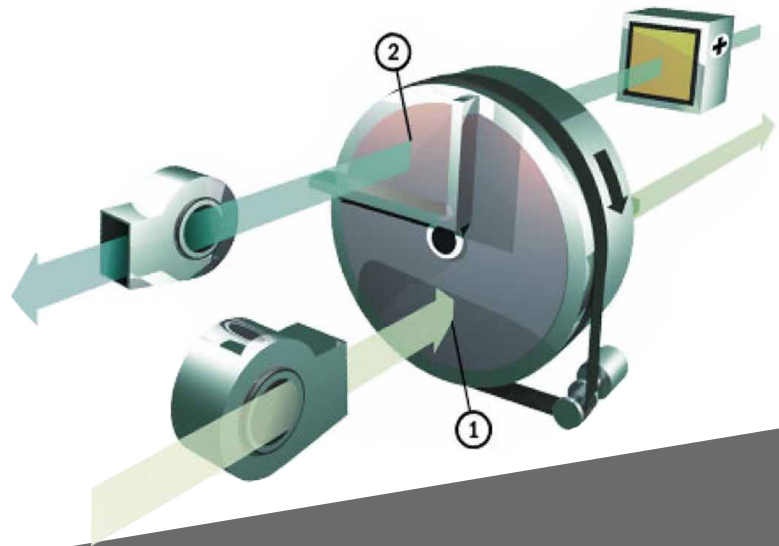


# DEHUMIDIFICATION SYSTEMS

## The solution to the problem of storing and moving powders

### ADVANTAGES

- > Guarantee of the maintenance of a high level of the product quality throughout the whole year.
- > Prevention of lump formation in the powders treated during the moving and storage.
- > Prevention of condensation formation inside the silos and thus of the bacteria proliferation.
- > Maintenance cost reduction for the cleaning of the clogging caused by the wet product.



### In the treatment of powders humidity is often the cause of several problems.

The conservation of powders in silos or their treatment through pneumatic transports can imply problems generated by the presence of humidity in the product or in the rooms where the process happens. The consequences are very well known to those who operate in that field: condensation generate by the excess of humidity causes the formation of lumps in the treated powders, the product quality is damaged and the productivity diminishes due to the clogged ducts, damaged systems and the necessity to make frequent interruptions of the production cycle for maintenance interventions.

While the production decreases in quantity and quality, costs increase. Humidity is the real responsible for the problem. The moving of powders in silos and conveyers is subject to the damaging effects of the absence of humidity control. Pneumatic transport systems are damaged by the increase of air pressure cause by the partial reduction of the duct section. High humidity values are difficult to prevent as the humidity content in the room is under constant variation during the day and according to the seasons.

### Traditional solutions don't solve the problem.

To reduce to minimum the negative effects

of the material clogging they normally use vibrating panels or hammers. This way the root problem is not solved, the issue is only temporarily postponed, and the powders are still subject to lump formation and quality decline. Moreover, the hygienic problem is not solved.

### SAMP finds the solution

With their adsorption dehumidification systems SAMP protects both the silos and the powder moving throughout the whole year giving a radical solution. SAMP's adsorption dehumidification process eliminates the problem at the root, eliminating any risk of condensation of air humidity.

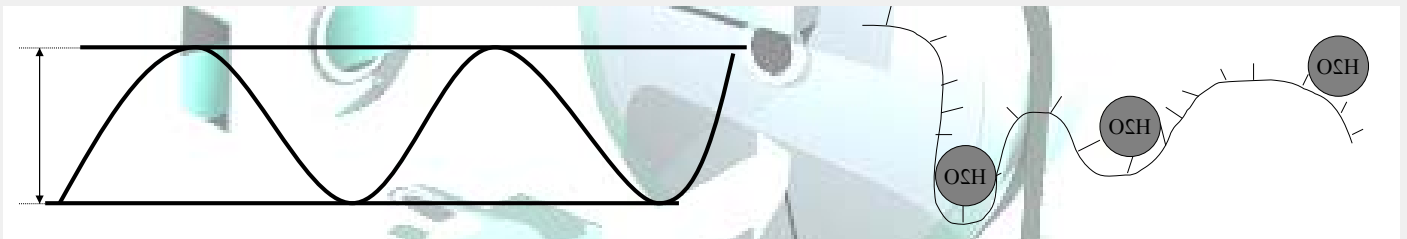


## MAIN TECHNICAL DATA

The value of a winning application technology: the functioning of SAMP wheel is based on the adsorption principle. This is the chemical-physical natural process with which water vapour is taken from the air: water vapour molecules bond with the adsorption surface (e.g. silica gel) which is to be meant not only as external surface but as total surface. In fact, the adsorption materials (silica gel, molecular sieves, zeolites) present a high porosity and this results in a wider total available area for the

molecular exchange. The consequence is a faster dehumidification process. Our adsorption rotors are inspired by nature: honeycomb. The honeycomb structure presents the advantages to have both a great contact surface with the air and a perfect distribution of the pressure on its surface. Thanks to the construction and material technology, SAMP rotor has a high adsorption speed which give the maximum quality to the dehumidification process. The air to be dehumidified (Process Air) flows

through the wheel. The water vapour is removed directly from the air through the contact with the absorption material of the wheel and is held during the rotation. When the area of the wheels, saturated with water vapour, passes through the regeneration zone. The water vapour is transferred to a heated air flow which takes with the adsorbed water, freeing the rotor. The humid air is then discharged outside. This process continuously repeats, enabling an efficient and constant dehumidification.



## QUALITY SAMP CERTIFICATIONS

ISO9000:2000  
CESI - ATEX  
EUROVENT HYGIENE VDI 6022  
ISO 14001:2004 Environmental Management System  
BS OHSAS 18001:2007  
GOST R (СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р)

SAMP “was born” in Monza in 1969 and was one of the first Italian companies to specialize in the production of air handling unit. Today SAMP is the market leader of Air treatment m not only due to the quality of its products, but mainly about the total quality which is able to provide to its customers from the start of design to delivery ... and even after

## PRODUCTS

- > **SORPTION DEHUMIDIFIERS:** Standard e Custom
- > **AHU EVO:** AHUPlug&Play
- > **AHU:** From 2.000 a 91.000 m<sup>3</sup>/h with pressure until 3.000 Pa
- > **AHU POOL:** Units for swimming pool and fitness
- > **AHU HOR:** Units for operating theaters

## REFERENCES



Info: SAMP S.p.A.