



## Plastic Industry

The presence of ambient humidity in a wide range of processes carried out in the plastics industry has a direct impact on the quality of end products, and is especially significant with regard to transformation operations involving the injection and moulding of raw materials..

### **Injection: the presence of humidity**

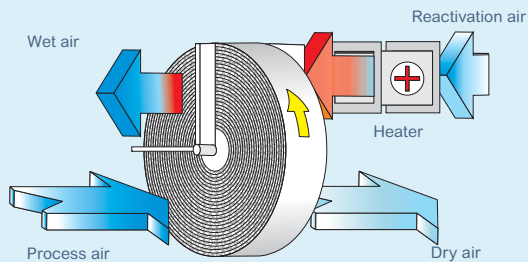
Thermoplastic or resinous raw materials undergo heating processes aimed at increasing the plasticity of the materials so the desired forms can be created in moulds.

Humidity in this hygroscopic raw material (high water absorption capacity), and ambient humidity around the raw material, vaporizes when temperatures rise, which causes structural damage and aesthetic imperfections in end products, resulting in a high percentage of the production being rejected.



## Humidity Control in the Plastic Industry

### Dessiccant rotor operating principles



The excellent waters of the Solán de Cabras spa in Cuenca (Spain) are also well known for the refined design of their bottles. The bottling plant is able to maintain quality levels and increase productivity all year round thanks to the installation of 5 DFRB-045E and 1 DFRB-060E.

### Moulding: condensation

Most moulding processes refrigerate by using cold air to lower mould temperatures in order to reduce manufacturing times and increase production volumes. Basically, the colder the mould, the quicker the manufacturing cycle becomes. However, operating at low refrigeration temperatures can cause condensation problems in the mould, especially in summer, which can result in deformations in end products.

A relatively simple alternative employed to prevent the formation of condensation just involves increasing the temperature of the surface of moulds, but higher mould temperatures mean longer manufacturing cycles and lower production volumes.

The optimum solution used in the industry to tackle this situation is the implementation of a **desiccant rotor dehumidification system**, which makes it possible to control dew points on the surface of moulds and in turn operate using lower mould refrigeration temperatures without the risk of condensation formation. Production volumes can therefore be increased while maintaining the quality of end products.

### Moulds: corrosion

Corrosion can affect moulds during production processes and during storage.

- **During production**, as a result of the formation of condensation.
- **During storage**, due to ambient humidity.

In both cases, humidity control enables their preservation regardless of the temperature, prevents moulds from having to be repaired or replaced, and avoids the costs this incurs.