



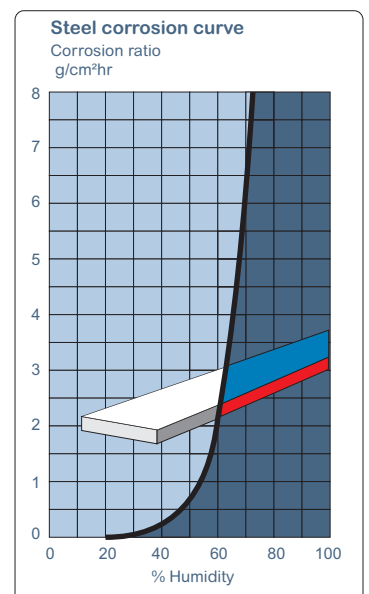
Humidity control in water treatment plants

The very nature of the water treatment industry places it at a disadvantage in terms of high humidity levels in the environment that have a direct impact on the infrastructures of plants, causing problems in mechanical and electronic equipment.

The effects of humidity are felt the most in the following areas of this type of plant:

Metal structures: Oxidation

The oxidation process of metal materials speeds up exponentially when relative humidity in the environment is in excess of 50%: pipes, valves, pumps, tanks, and metal surfaces in general oxidize more quickly, and their useful lives and quality indexes are reduced.





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Metal structures: Condensation

In addition to the oxidation process derived from high levels of humidity in the environment, there is the extra oxidation occurring as a result of condensation in water treatment plants.

Humidity inside plants can condense on any surface with a dew point temperature below the air temperature, which is normal on the exterior metal surfaces of pipes and tanks.



Electrical and electronic equipment: Damage

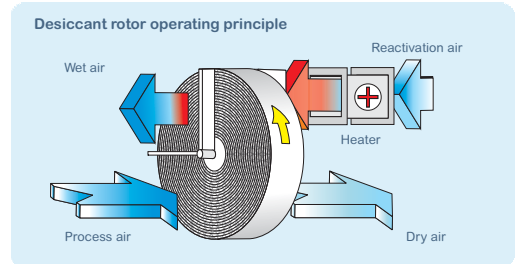
Electrical and electronic devices in water treatment plants play an essential role in monitoring and controlling the processes involved.

These processes can be affected by faults and deterioration resulting from high levels of humidity in electronic circuits, which is detrimental to the smooth running of plants.

Solution: Sources of humidity and their treatment

The main sources of humidity in this type of plant are as follows:

- Infiltrations.
- Ventilation.
- The opening of doors and windows.
- Evaporation from open water tanks.



A series of calculations can be made to evaluate the impact of each of these and estimate a total, in order to ascertain the quantity of water that needs to be eliminated to maintain low humidity levels and prevent damage caused by humidity.



By way of an example, DFRB-045E model desiccant rotor air dehumidifiers were supplied to the Bilbao Water Consortium. Specifically, they were employed to prevent the problems described occurring in the pump rooms, which were reducing the operating life of this expensive equipment and necessitating constant maintenance work.

