



MUSEUM, ART AND HERITAGE HUMIDIFICATION

Humidification, Dehumidification
and Evaporative Cooling

 **condair**

TRUSTED TECHNOLOGY

Condair humidifiers are used in museums, art galleries and heritage sites around the world to help preserve and protect valuable artefacts from the detrimental effects of dry air.

Some of the world's leading conservation and heritage organisations put their trust in Condair humidification systems and services to help them achieve their objectives.



GLOBAL EXPERTISE, LOCAL SOLUTIONS

Condair has manufacturing facilities in Asia, North America and Europe as well as sales operations in 15 countries and distributors in over 40 more.

The company has been serving the global museum, art and heritage sector for more than 65 years and is highly experienced in delivering the right solution for a client's requirements.

Humidification systems are designed for each application by experienced experts to create the optimal preservation and display environment.

If required, Condair's regional R&D departments can work with a client's team to deliver innovative solutions for unusual applications.

Condair's specialist humidification engineering teams offer installation, commissioning and maintenance support to ensure humidity control systems continue to deliver the required environment for many years.

HUMIDITY CONTROL FOR THE PRESERVATION AND DISPLAY OF ART & ANTIQUITIES

Poor humidity control can cause irreversible damage to art and antiques made from a wide variety of materials. So much so that maintaining specific humidity levels is often a condition of benefactors in deciding whether or not to loan works of art to galleries.



The optimum humidity level for preservation of most materials is between 45-55%RH with daily fluctuations controlled to $\pm 3\%$ RH. Rapid fluctuation in humidity has the most damaging effect as the materials do not have enough time to acclimatise. These types of changes are difficult to control in an environment that can be empty one minute and full of tourists in from the rain the next.

The effects may be very visible such as materials warping, splitting or cracking but they can be microscopic. Over time they will become more obvious. As works of art grow older they also become brittle and fragile, and less able to readjust their internal moisture level without damage.

The type of low humidity damage depends on the exhibit but materials that are particularly at risk include:

Paintings

Individual layers of paint can react to moisture loss in a different way leading to blistering and flaking.

Paper and papyrus

Although moisture can be put back into these materials once they have dried out, regular hydration and dehydration is detrimental to the structure and can cause damage.

Wood

The amount of damage that will be sustained will be dependent on how the wood was primarily seasoned. However, damage can include warping, cracking and movement of joints, and discolouration of veneers or external veneered layers detaching and becoming loose.

Ivory

Internal moisture changes can quickly cause thin ivory structures to crack.

Textiles

A drop in humidity will cause textiles to become brittle. When stretched across wooden boards or frames there is the risk of tearing. Silk is particularly at risk as are exhibits that contain hair, which is a particularly hygroscopic material.

Pottery, terracotta and stone

Alterations in the internal moisture content will cause minerals to rise to the surface when wet and then crystallize when dry. This can lead to stains on the surface, powdering and flaking.

HUMIDIFIERS FOR THE MUSEUM, ART AND HERITAGE SECTOR

ASK FOR A FREE
EXPERT CONSULTATION

Condair has a comprehensive range of humidification products to suit any museum, gallery or heritage environment. From mobile humidifiers for an individual display cabinet to high capacity systems capable of humidifying air handling units in the largest of museum.

Steam humidifiers are often used in heritage environments as they provide very responsive and accurate humidity

control. However, Condair also has an extensive range of cold water systems that offer the benefits of low energy cost and economic evaporative cooling.

Condair's complete range of humidifiers has been designed to provide efficient and reliable humidity control. Innovative features reduce and simplify maintenance to make the systems easy to use and lower operating costs.

Alongside this comprehensive range of humidifiers, Condair has the experience to deliver the right solution for any heritage application and support customers in the field with specialist engineering services.



Condair EL electric steam humidification



Condair ME evaporative humidification



Condair GS gas-fired steam humidification



Defensor PH mobile humidification