



FOR PRINTING, PACKAGING AND PAPER

Humidification Solutions Trusted by the Biggest Industry Leaders

Humidification, Dehumidification and Evaporative Cooling





CASE STUDY with HP INC.

Speed and Quality in Digital Printing

At its Demo and Training Centre in Sant Cugat del Vallès (Barcelona), HP Inc. presents its customers with the latest digital printing technology, from large-format printing to packaging and job printing. To ensure optimal results for print and production, the HP Demo and Training Centre requires air humidity values to be kept constant.

Every year, industry leaders visit the Demo and Training Centre of this leading digital printing specialist to seek inspiration and participate in training. The Spanish site views itself as “Dream Factory” that aims to stimulate and foster new customer product ideas, and demonstrate the digital printing techniques for turning them into reality.

To ensure optimal results for print and production, the HP Demo and Training Centre requires air humidity values to be kept constant. “Electrostatic charge, changes to the paper dimensions and fluctuations in print quality all adversely affect our training and demonstration work,” explains HP Trainings Manager Adam Goldthorp. “In addition”, says Goldthorp, “the various printing technologies and materials (e.g. plastic, cardboard) also need different levels of humidity for processing.” The existing centralised ventilation system with steam humidification was no longer able to handle the requirements and was accordingly decommissioned. Since 2013, a direct room humidification system with high-pressure nozzles has been ensuring constant, optimal humidity.

Simple installation

Over 50 high-pressure Condair humidifier units guarantee controlled humidification in various areas and parts of the building. For installation, HP Inc. merely required a mains water system and drain, plus an appropriate electricity supply.

Everything is supplied to the building from a central mechanical room, where both the water treatment systems and the high-pressure pump are installed. These systems are connected to the humidifiers using specialised high-pressure hoses and control lines. The compact humidifiers, attached to ceiling suspension or wall-mounted are each oriented both horizontally and vertically in the various rooms to ensure optimal humidity distribution. High-pressure nozzles spray out

an ultra-fine fog with a droplet size of less than 15 µm, which is immediately absorbed by the air and uniformly distributed within the room.

Lower energy costs

The required humidity is regulated using a digital control system. In each of the individually defined humidification zones (rooms or parts of rooms), control units measure the current level of humidity and activate the humidifiers when it falls below the set target value. This means that rooms can be humidified individually, or exactly as required for their various uses.

For José Baena from HP Inc. Global Real Estate, the new technology offers major advantages: “We now have optimal values across the various zones and printing systems. And we’ve also managed to cut energy consumption for humidification by over 95%.” The energy-efficient high-pressure humidification system ensures a constant relative humidity of 50–65%.





CASE STUDY with HEIDELBERGER DRUCKMASCHINEN

Trouble-Free Printing

With the Print Media Centre (PMC) Commercial and Packaging, Heidelberg Druckmaschinen AG in Wiesloch-Walldorf operates the world's largest showroom for commercial and packaging printing. Optimal humidity and standardised process water increase performance while ensuring a trouble-free printing process.

With its comprehensive portfolio of offset and digital machines, software, consumables and services, the PMC covers any and every topic likely to be faced by a modern, industrial-scale print production business. Over 1,200 individual customer demos are held yearly, educating international delegates in how real-world production processes can be organised to be more economical and more reliable.

Fault-free sheet feeding

To ensure optimal climatic conditions for machine demonstration work, the PMC Commercial, controls relative humidity with a high-pressure nozzle system featuring the latest generation of humidifiers.

"Our presentations have to be right on the money and must not be disrupted by wavy or tight edges or electrostatic build-up on the paper. Perfect sheet feeding is a basic requirements for our demonstrations," explains Head of Print Media Centre Roland Knapp.

In choosing its humidification system, Heidelberg can draw on almost 20 years of experience: the first high-pressure humidifiers were installed in Heidelberg's manufacturing facilities back in 1996. Over 200 units are now in use, ensuring that printing and testing in the assembling halls proceed as intended.

Water treatment

The right water plays a major role in ensuring the quality of offset printing at PMC Commercial. Accordingly, germ-free, demineralised water is produced as part of a multi-stage process both for the high-pressure nozzle fogging units and as specially treated process water for the printing machines. The process begins with water softening. Here, the calcium and magnesium salts responsible for water hardness are replaced with readily soluble sodium salts. Once treated, this soft water is then purified by being passed through a two-step mechanical

filter stage. The heart of the water purification process is the third stage, reverse osmosis. Here, a membrane separation technique is used to effectively sterilise and demineralise the pre-treated water. The reverse osmosis process is entirely self-contained and runs in a portable, compact module that enables the comprehensive maintenance and disinfection of the plant by simply replacing the entire module.

For personnel and plant

At Print Media Center, optimal humidity and standardised process water are key parameters that guarantee maximum performance while avoiding disruptions to the printing process. In selecting its humidification system, Heidelberg Druckmaschinen AG has devoted particular attention to maximising operational reliability and constant hygiene, emphasises Roland Knapp: "Requirements for occupational safety and health as well as maintainability were reviewed in great depth by the specialist departments beforehand. And we are very happy with the result: Our new humidification system reliably creates the conditions required for peak performance by our personnel and plant."



Trusted around the world for over 75 years, by the printing industry.



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About Condair

Condair Group, founded in 1948 and based in Switzerland, is the global leader in humidification, dehumidification and evaporative cooling. Supported by science, we engineer tailored, holistic solutions that customers can trust. With optimal humidity, we increase productivity and create healthier built environments.

Condair Group has production sites in Europe, North America and China and representatives in 50 locations worldwide. You can rely on our comprehensive portfolio of innovative technologies for air humidification, dehumidification and evaporative cooling to meet the needs of your application.

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