

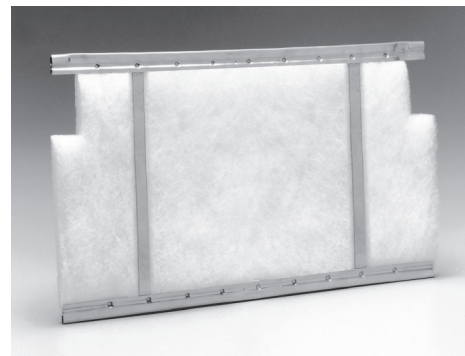


How Armstrong Reduces Humidifier Maintenance Using Ionic Bed Technology

Ionic Beds Stop Solids

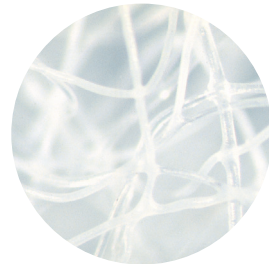
Ionic beds consist of a fibrous medium that attracts solids from the water as its temperature rises, minimizing the buildup of solids on the heat exchanger and inner tank walls. Once the ionic beds have absorbed their capacity of solids, an indicator on the humidifier's control panel signals it's time to replace the ionic beds. Changing the beds takes only about 15 minutes. Use of the ionic beds:

- Reduces cleaning of the tank exchanger or heating elements
- Keeps the drain screen cleaner longer – allowing effective tank blowdown
- Helps maintain humidifier output without building excessive heat exchanger surface temperatures
- Requires less frequent blowdown, conserving water and energy
- Eliminates the need for wasteful surface skimmers that must be checked weekly for possible plugging
- Reduces downtime
- Has years of field-proven success in thousands of humidifier applications



Better Here than in your Humidifiers

These photos show how the ionic bed fibers (magnified 52.5x) collect solids throughout their service life. A new ionic bed weighs between 1/3 and 1/2 pound, depending on the humidifier type. When it reaches its capacity, an ionic bed may weigh more than 2-1/2 pounds.



New ionic bed



After 400 hours



After 800 hours

HUMIDIFICATION

STEAM • GAS • ELECTRIC • ATOMIZATION



INTELLIGENT SOLUTIONS IN STEAM, AIR, AND HOT WATER

Armstrong International

North America • Latin America • India • Europe / Middle East / Africa • China • Pacific Rim

armstronginternational.com

Adiabatic Humidification

Pressure Fog®

Pressure Fog® is Armstrong's energy efficient high pressure humidification solution. It produces a rich fog to provide humidity and evaporative cooling without the need for an air compressor, keeping energy costs low.



Pressure Fog® is a system that is perfect for applications requiring high humidification output with minimal energy consumption.



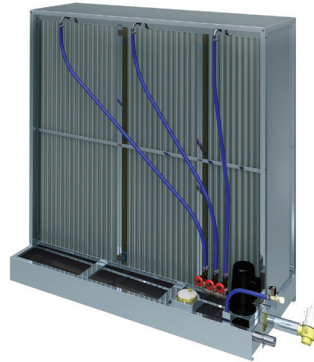
Armstrong – Cool Fog® System

The Cool Fog® System offers an energy efficient, environmentally sound, and economical way of controlling the injection of compressed air and water into an air handling system to provide humidification and evaporative cooling. The use of compressed air produces the highest energy water particle which results in the highest evaporation efficiency. With optional "variable differential" control, turndown of over 100:1 can be achieved yielding unrivalled controllability.

EVAPACK® Series

Simple, natural and efficient process

The EVAPACK® Series efficiently converts ordinary tap water to water vapor using an adiabatic process. Dry air passes through a corrugated bank of wetted cells media made from non-organic wet fibers. EVAPACK® series uses the sensible air heat to evaporate the water to consume less energy and minimize pressure drop. The air is cooled and humidified.



Electric Humidification

HUMIDICLEAN™ Series HC-6000 Humidifier with Ionic Bed Technology™

The HumidiClean™ electric humidifier includes disposable inserts made of a fibrous medium. Called ionic beds, these devices attract solids from the boiling water, preventing the solids from plating out on the heating elements or on the tank walls. Tank cleaning is minimized, and effective service life is extended.



Series EHU-800 Electric Steam Humidifier

No other electric humidifier does a better job of stabilizing and simplifying humidity control. Only Armstrong offers full modulation and a patented self-regulating maximum output feature. When you install an Armstrong Series EHU-800 you get accurate, automatically adjusted humidity control that's virtually hands-free.

Gas Humidification

Gas-Fired HumidiClean™ with Ionic Bed Technology™

Operating costs are reduced with the GFH Series Gas-Fired HumidiClean™ humidifier from Armstrong. HumidiClean's innovative Ionic Bed Technology reduces operating costs even more by reducing the labor and downtime associated with cleaning humidifiers. The GFH Series uses natural gas or propane for economical operation. And the HumidiClean™ is designed for ease of use; it's adaptable to various water qualities, and service life cycle and tank drainage are field-adjustable. The GFH Series is CSA-certified and CGA-approved.



Steam Humidification

Series 9000 Humidifier

The Series 9000 direct steam injection humidifier provides precisely controlled, trouble-free steam humidification. These units distribute steam and give you precise control to accurately maintain the required level of relative humidity. Available in a range of selections to meet various capacity requirements, Series 9000 units offer uniform vapor distribution and rapid, complete absorption. They maintain quiet operation and require minimal maintenance.



Series 1000 All Stainless Steel Humidifier

A steam separator type humidifier for use in sensitive environments where pure, demineralized, deionized or distilled water is used to generate clean steam. Designed for applications where all steam and condensate piping is stainless steel, the Armstrong Series 1000 delivers precisely controlled, trouble-free steam humidification. Stainless steel construction prevents problems caused by corrosion and subsequent carry-over of corrosion by-products.



Steam-To-Steam Humidifier with Ionic Bed Technology™

Steam-to-steam devices in the CS Series use boiler steam to produce chemical free steam from untreated water. Easy to install and simple to clean, Armstrong steam-to-steam humidifiers have all the benefits of steam humidification without the concern of boiler treatment carry-over. This device has all the benefits of Armstrong steam-to-steam humidifiers – plus the innovative Ionic Bed Technology™ at the heart of all HumidiClean™ humidifiers.

Specialized Steam Dispersion Methods

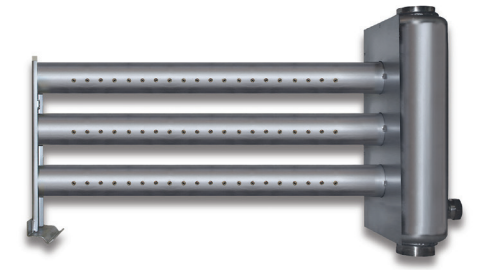
EHF Fan Package

The EHF Fan Package is used when the atmospheric steam can not be delivered in to the duct / AHU. This unit is mounted in the space that is to be humidified and fed by one of Armstrong's many atmospheric steam generators.



HumidiPack®, HumidiPackPlus® & HumidiPack CF®

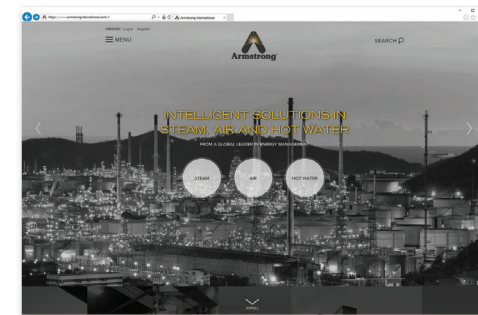
The HumidiPack® Family is a prefabricated steam humidifier system that comes ready for insertion into the duct or air handler when a short non-wetting distance is required. These panels accept steam, separate entrained moisture from it and admit it into the airstream via tublets in the dispersion tube. The HumidiPack® has the ability to accept pressurized steam or atmospheric steam from the many generators that we manufacture. The HumidiPack CF® combines the all welded SS construction and a unique tube within a tube design to give you a dry, uniform discharge of steam for nearly any application with a steam source from pressurized central supply.



Humid-A-ware™ Software & Armstrong University®

Humid-A-ware™ Software

For detailed information on customizing humidification schedules and calculating non-wetting distances and humidification loads, refer to Armstrong's Humid-A-ware™ humidification sizing and selection software. Visit our website to download the Humid-A-ware™ Software.



ARMSTRONG UNIVERSITY

Knowledge Not Shared is Energy Wasted.®

For nearly 100 years in the steam business, Armstrong has been devoted to building stronger bonds through the sharing of information and ideas. That's why **Knowledge Not Shared Is Energy Wasted®** is our motto, promise and pledge to you. And it's why we founded Armstrong University®. Use this site for quick research on steam, answers to steam system questions and comprehensive online steam system education.

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