HI-E DRY

HIGH EFFICIENCY DEHUMIDIFICATION

Water and Wastewater Treatment Facilities

inside a water treatment plant

treatment facility in Brookfield, Wisconsin

The chronic condensation problems common to water treatment facilities promote the deterioration of piping, equipment, controls and the physical structure of the facility. Utilities require substantial maintenance budgets to battle the damaging effects of condensation. The cooler conditions present in water treatment facilities increases the relative humidity and diminishes the ability of conventional dehumidification equipment to correct the humidity problem.

Therma-Stor specializes in the manufacture of high efficiency dehumidification equipment designed for high performance at lower temperatures.

HI-E Dry dehumidifiers provide "plug-in" control of the damaging condensation common in the cooler conditions found in municipal water and waste-water facilities.

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Therma-Stor developed the first HI-E Dry dehumidifier in the late 80s. Utilizing the patented revaporator process, this unit removed more than twice the amount of water per kilowatt of electricity than any other dehumidifier. HI-E Dry dehumidifiers are designed and built with emphasis on efficiency and durability. Current models remove up to seven pints of water per kilowatt while the industry average remains at only two to three pints.

The high efficiency design of HI-E Dry dehumidifiers offer more than just dramatically reduced operating costs. The larger water removal capacity from a smaller, more efficient refrigeration system eliminates the need for hard wiring special circuits. HI-E Dry dehumidifiers just plug into a standard 115 volt outlet. The smaller refrigeration system also means a HI-E Dry dehumidifier will cost less than competitive systems of equal capacity. In some cases, water utilities can cut their initial equipment costs to a fraction of the anticipated cost and have the realized energy savings of the first year equal the initial cost of the HI-E Dry system.

Therma-Stor will size the dehumidification system necessary to control the condensation in the facility and guarantee the HI-E Dry dehumidifiers will solve the humidity problems.

HI-E Dry dehumidifiers are **designed** and built with emphasis on **efficiency** and **durability**.

The type of equipment chosen to control condensation should be the highest efficiency units available that have the capacity to "fit" the particular conditions and requirements of the facility. HI-E Dry dehumidifiers are the most efficient dehumidifiers made. If the moisture load of the plant is higher than the capacity of a single unit, multiple HI-E Dry dehumidifiers can be used.

The size of the facility job is rarely an issue, the issue is the ability of the dehumidification equipment to reach dew points below 50 degrees in room temperatures of 65 degrees or less. Most refrigeration dehumidifiers freeze-up under these conditions and are ineffective. HI-E Dry dehumidifiers operate superbly under these conditions while using less energy and offering much lower equipment and installation costs than alternative solutions.

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Condensation Control 101

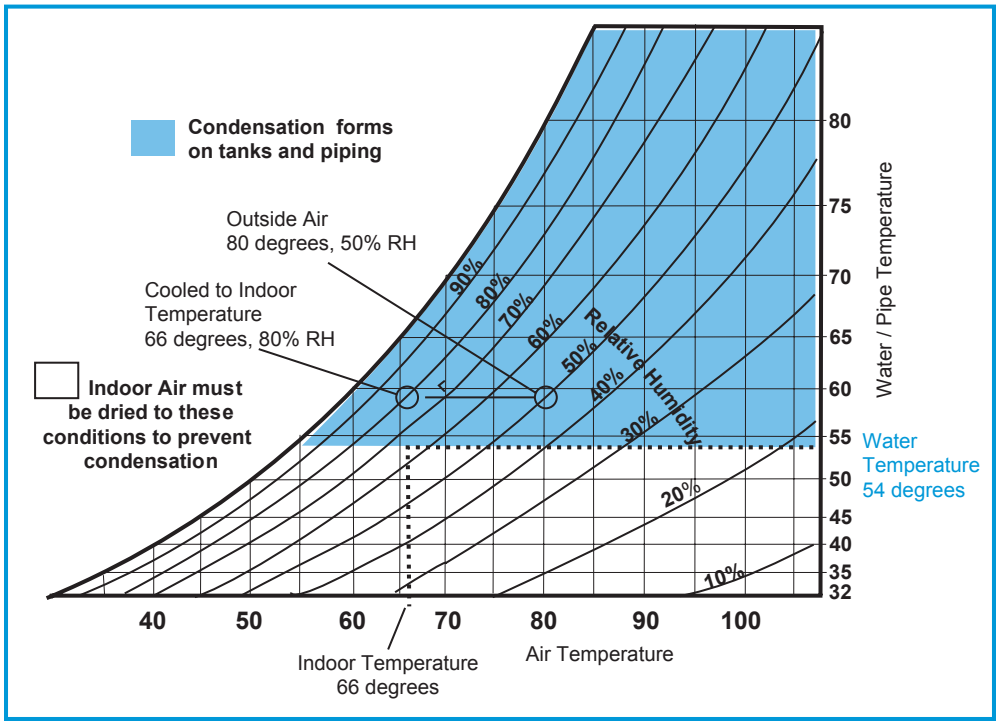
The key to controlling condensation in a water facility is understanding and controlling the dew point of the air in the building. Have you ever noticed that a cold can of soda will “sweat” in the summer, but not in the winter? The temperature in your house is about the same, so the temperature of the air present cannot be the cause. The difference is the temperatures the air has been subjected to before it entered the structure.

A pound of air at 32 degrees and 100% relative humidity will hold .0038lbs of water or 26.6 grains.

A pound of air at 50 degrees and 100% relative humidity will hold .0076 lbs of water or 53.2 grains. Twice as much as 32 degree air.

A pound of air at 70 degrees and 100% relative humidity will hold .016 lbs of water or 112 grians. Over four times more than 32 degree air.

The ability of air to hold moisture is determined by the temperature of the air. Hot air has the capacity to hold substantially more moisture than cold air. 50 degree air can hold approximately twice as much water as 32 degree air.70 degree air can hold twice as much water as 50 degree air and about four times as much water as 32 degree air. Relative humidity is the term used to express the percentage of moisture present in the air in relation to the total amount of moisture the air could hold at a given temperature. Air that has a relative humidity of 100% is at it's saturation temperature. This is also referred to as the dew point temperature. Air with a relative humidity of 100% at 32 degrees will have a dew point of 32 degrees. If this air is heated to 50 degrees the relative humidity will be about 50%. If heated to 70 degrees the relative humidity will be about 25%, but the dew point of the air will still be 32 degrees.In order to prevent condensation from forming on cold surfaces, the dew point of the air must be lower than the temperature of cold surfaces. In most ground water facilities the coldest pipes are approximately 54 degrees. The air in these facilities must be kept at a dew point lower than 54 degrees to prevent condensation. Summertime dew point temperatures are normally 60 to 70 degrees, so without a humidity control system the pipes "sweat" almost constantly.



HI-E DRY
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Dehumidifiers

Quest Dry 70

Specifications:
Power:	115 volt, 5.1 amps
Blower:	190 cfm
Temp. range:	45°F - 95°F
Warranty:	5 year limited
Duct Kit:	8” round (optional)

Capacities per 24 hours
80°F, 80%	85 pints
80°F, 60%	70 pints
60°F, 80%	50 pints

Dimensions:
Width:	21 inches
Height:	12 inches
Depth:	12 inches
Weight:	55 lbs

HI-E Dry 100

Specifications:
Power:	115 volt, 7 amps
Blower:	255 cfm
Temp. range:	33°F - 110°F
Warranty:	5 year limited
Duct Kit:	8” round (optional)

Capacities per 24 hours
80°F, 80%	129 pints
80°F, 60%	106 pints
60°F, 80%	94 pints

Dimensions:
Width:	20 inches
Height:	36 inches
Depth:	17 inches
Weight:	110 lbs

HI-E Dry 195

Specifications:
Power:	115 volt, 12 amps
Blower:	540 cfm
Temp. range:	33°F - 110°F
Warranty:	5 year limited
Duct Kit:	12” round (optional)

Capacities per 24 hours
80°F, 80%	245 pints
80°F, 60%	192 pints
60°F, 80%	162 pints

Dimensions:
Width:	36.6 inches
Height:	42.0 inches
Depth:	19.0 inches
Weight:	180 lbs

Therma-Stor, based in Madison, Wisconsin, provides innovative heat transfer products to residential and commercial markets. Dehumidifiers, heat recovery systems, and ventilation systems comprise Therma-Stor’s primary products.

ETL Listed

MADE IN U.S.A.

Therma-Stor® LLC

QUEST

4201 Lien Rd.
Madison, WI 53704
www.Thermastor.com
www.QuestProtect.com
sales@Thermastor.com

Toll-Free: **800-533-7533**
Fax: **608-222-1447**

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