Meat and Food Production

Humiscope

Whether it's maintaining temperature, controlling humidity or improving air quality, Humiscope helps businesses and corporations to thrive by providing efficient, effective and reliable end-to-end indoor environment solutions.

With an optimal indoor environment, production processes and storage become more efficient with quality, durability and hygiene improved

If your refrigeration system plays a major role in your business, then ice build-up, frost and condensation can have a heavy impact on your business and can seriously affect productivity, quality, and safety.

Common industry problems

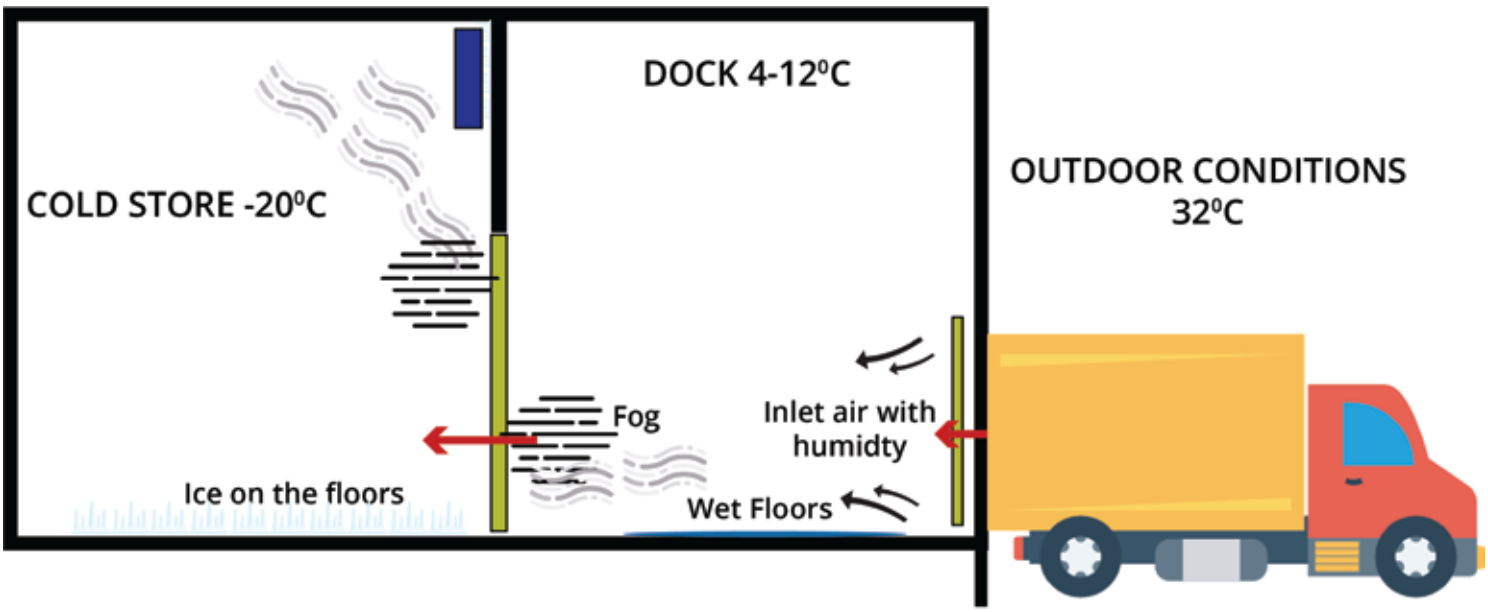
- Increased operating costs
- Serious hazards when ice falls from ceilings
- Increased power consumption
- Extra manpower required to combat ice build-up
- Sanitation concerns
- Critical issues with machinery
- Forklifts sliding on ice and hitting walls and doors creating leaks in stores
- Loss of stock affected by moisture
- Ice film on floors leading to slips and falls

Cooling at lower temperatures and mixing the outdoor air with the cold store when doors are opened, accelerates the build-up of frost and ice, water pooling on floors and creates condensation and fog.

Where does it come from?

Although each cold store is different and rooms can be sealed and equipped with automated doors, infiltration occurs – even through the fastest opening times. If it remains undealt with, moisture will build-up and cause:

- Damp and damaged packaging from frost
- Doors with damaged seals
- Broken strip curtains
- Ice build-up around doorways
- Build-up around evaporators restricting airflow.



Common industry issues

In freezer stores humidity problems stem from moving goods in and out, causing ingress of moisture-laden air via any opening.

There can be problems with too little air circulation, which can cause pockets of stationary air because the flow of air from the fans cannot reach everywhere within the cold storage space.

The extent of the problem inside the actual cold store or freezer will usually depend on the levels of humidity in the goods dispatch/ reception area.

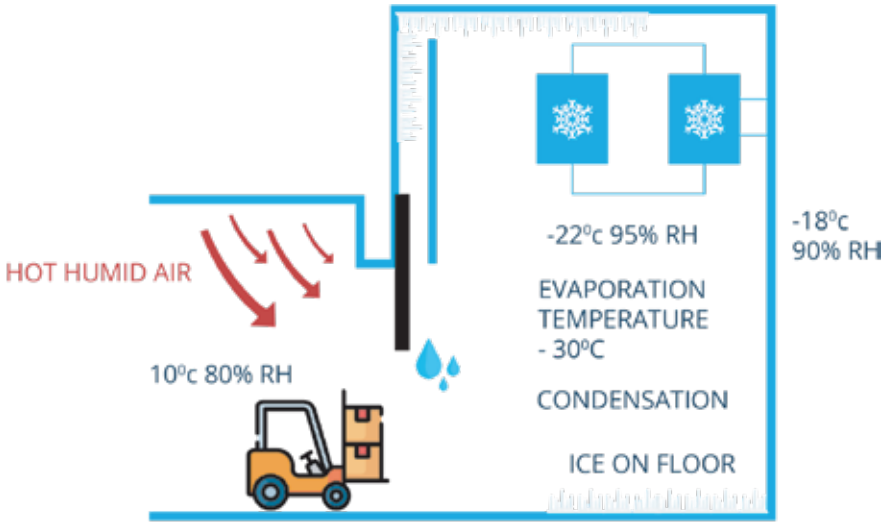
Frozen Goods Storage

Ice formation around doorways

Build-up around evaporators restricting airflow

Damp and damaged packaging from frost

Ice film on floors



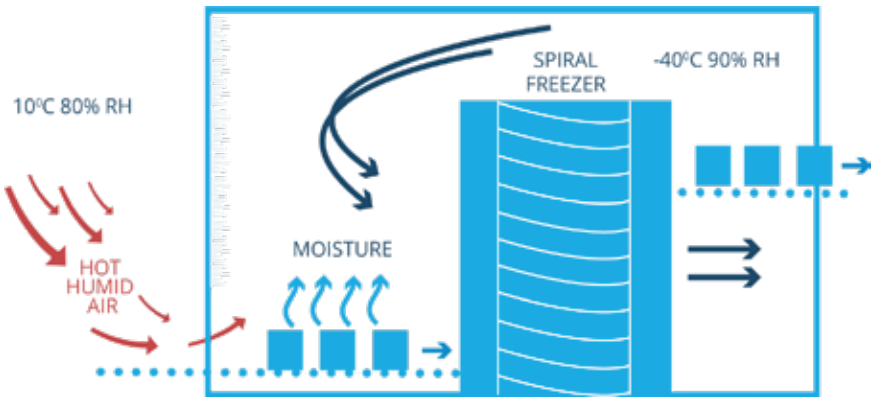
Process Freezers

Ice formation around conveyor openings

Build-up around evaporators restricting airflow

Production stops in order to defrost

Product sticks to conveyor



A Freezer Without Frost is Possible

How to improve the situation

Whether you are running frozen goods storage (-20 C frozen stores) or process freezer (-40 C dp with high humidity)

- Install automated doors
- Build an antechamber
- Check pressure relief valves are sealed

Humiscope understands a good design does not always need additional moisture removal. However, operator error and lack of maintenance can derail a perfectly balanced system.

Here are some things to check

Door seals are not damaged	Repair broken strip curtains
Penetrations are sealed	Door opening times: - make sure manual override of opening times do not occur - If possible, reduce door opening times to minimise infiltration
Ensure service equipment is set to run at commissioned state	
Check the space being used is the same as the original/initial design	

> *"We chose Humiscope because they had a great understanding of our requirements which led to a tailor made option suited to our process and available budget.*
>
> ~ Dallas Garratt, GM, Cap-XX Australia

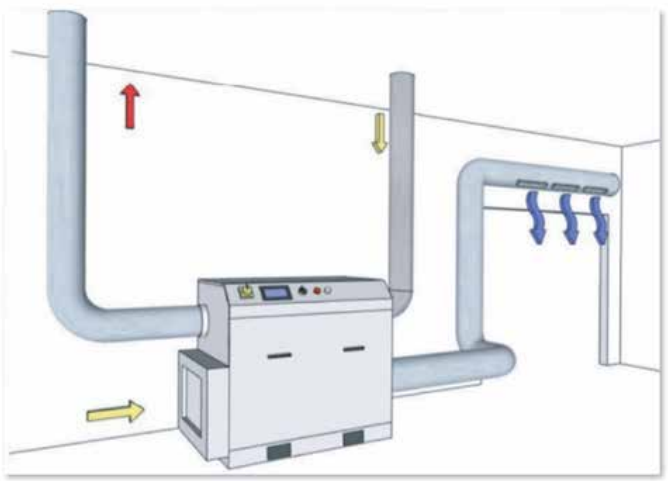
While housekeeping and maintenance are crucial, a desiccant dehumidifier will provide optimal and stable production conditions all year round.

Industrial dehumidifiers provide the best long-term solution for combating moisture control issues. They are designed to control moisture in the air to reduce humidity and condensation.

Dehumidified air in cold storage eliminates ice build-up, slippery floors, fog, and condensation. It increases refrigeration efficiency and equipment and system reliability which in turn reduces operating costs and lowers energy consumption.

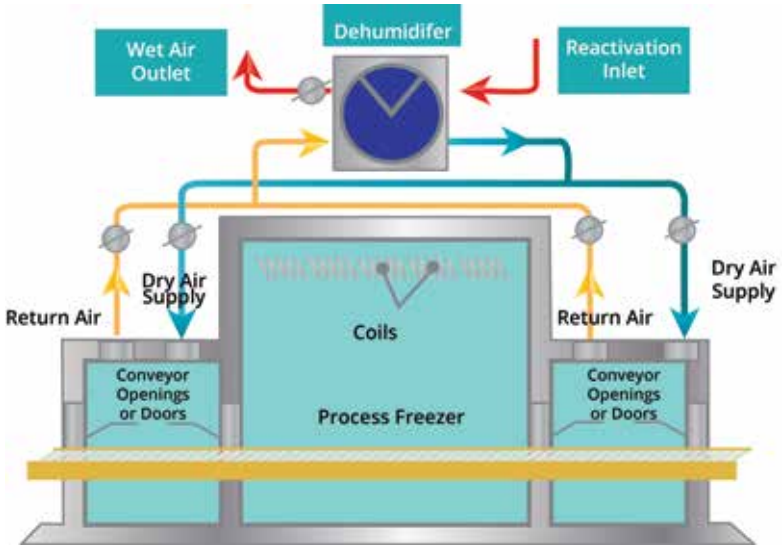
Industrial Desiccant Dehumidifiers

Frozen Goods Storage



Removing moisture

Process Freezers



Creating an antechamber zone for conveyor entry and exit penetration

> *Katherine was terrific! Nothing was too much trouble and she couldn't have been more helpful.*
>
> ~ Peter Schulte, Managing Director, Schulte's

With over 35 years experience it's safe to say we absolutely know our stuff.

We live and breathe indoor environments and how to control them. As experts in our field, you can count on us to provide fully customised solutions while educating you on how to optimise the environment to best suit your assets,

How does it work?

A desiccant dehumidification system provides a source of cool, dry air and allows the cold room or freezer to operate under positive air pressure preventing the moisture from entering the space.

The dehumidifier works by passing air through a rotating desiccant wheel to exact moisture from the air. As the wheel rotates, a small portion of the rotor is used to reactivate the wheel. In this portion the desiccant is heated so the moisture is released and is then ducted out from the dehumidified space.

Desiccant Rotor

Honeycomb structure rotor is coated with silica gel. The typical rotor thickness is 200mm. For low dew point applications a thicker rotor can be used (e.g. 400mm). This slows down the air through the rotor, allowing more moisture to be removed, resulting in lower dew point temperature to be achieved.

Process Airflow

Air intake from outside or from an internal space is directed and forced through ¾ of a desiccant rotor. As a result of the chemical process, dry air is produced.

Reactive Airflow

To remove the moisture from the rotor, the reactivation air intake is heated to approximately 120° C and forced through the rotor in the opposite direction to the process air.

These dehumidifiers are particularly suitable for continuous stationary and mobile operations. To limit the energy consumption, an integrative solution can be added to the system capable of recovering up to 70% of the heat generated by the machine to re-enter the cycle of operation, generating a considerable saving.

Before

After

More about our desiccant dehumidifiers

What size is it?

The size of the unit is based on the size and construction of the cold room/ freezer/dock, the number and type of doors, and the expected traffic through the space.

Latest Innovation

We use the latest high grade innovative materials and use absorption desiccant rotors. The dehumidification systems use two independent and counter-current air flows through the desiccant silica-gel rotor.

Consistent air flow

Using fans, the first air flow (process air), dries. The secondary air flow (reactivation air), of lesser volume, is used to remove the moisture retained by the desiccant rotor.

Food grade

We custom make our dehumidification systems to suit our clients' requirements. Specific to the food processing industry our dehumidifiers are made with food contact materials and are solid and durable.

Benefits to industry

- Create the ideal climate
- Improve safety conditions
- Lower operating costs
- Improve production efficiency
- Eliminate equipment downtime or damage
- Reduce energy consumption

Before

After

Who we are

We are a group of engineers, technicians and draftsmen dedicated to our clients and committed to providing energy efficient indoor environment systems; from simple applications to specially engineered solutions.

Our products

Desiccant Dehumidifiers

work by passing air through a rotating desiccant wheel to extract moisture from the air. They achieve relative humidity levels below 35% and have proven themselves to reduce both operating costs and energy consumption.

Refrigerant Dehumidifiers

work best in spaces where the temperature is at 20°C and above and humidity levels of 50% and above. They work on the humidity of the room and run when the humidity is above its set point.

Humidifiers

add moisture to the air. Humidity has a significant influence on the rooms climate and thus has a great influence on the well-being of people or on the stability of industrial processes that take place in the room

'We are very happy with the outcome. Drying times were reduced by 50%. Essentially we created our own climate' ~ Peter Schulte, Managing Director, Schultes Meat

Our services

Design and Installation

We are experts in designing, building and installing state-of-the-art climate control systems from simple applications to specially engineered solutions.

Rentals

Whether the application is a temporary project or being able to test the technology before investing, renting is a risk-free option.

Service & Maintenance

With over 35 years' experience we are able to service any brand dehumidifier regardless of make or model. We can identify where improvements can be made.

' I just want to say a big thank you for your efforts and help in getting the rental dehumidifier to Narrabri, especially given the flood situation. ~ Neil Rattray, Supervisor, BSA

Call us - obligation free - and we can talk through your specific concerns and suggest some solutions that would work best for you!

Humiscope

Master your indoors

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