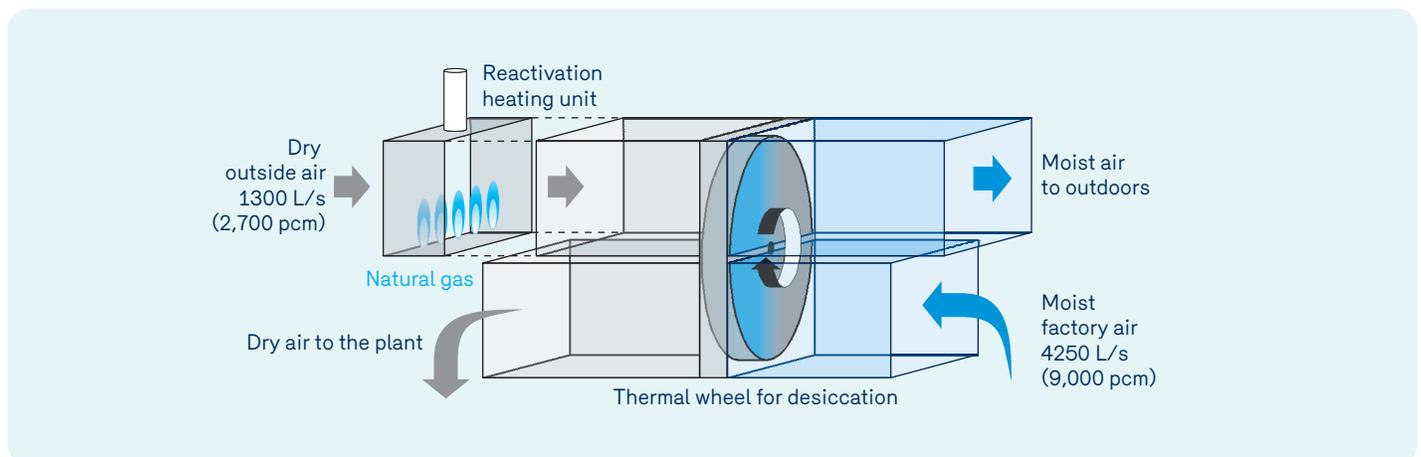


Natural gas desiccation units (Desiccant units)

Concept

Desiccation is a process by which moisture is removed from a gas or a body. For air treatment, desiccation units, also known as desiccant units, remove water from the air. A thermal wheel mounted in a ventilation unit is used for this purpose. Absorption is obtained by the contact between the moist air and the silica gel coating the inner walls of the thermal wheel. Once the water is absorbed, it is then removed from the gel with a heat source, which heats an air blast to over 100°C (212°F), the boiling point of water. The air can be heated by several types of energy – steam, hot water and electricity – but natural gas is preferred for any application with an air flow to be treated in excess of 1,000 L/s (2,000 pcm).

Once the air is dried, it has to be returned to room temperature. Desiccation is a process more suited to industrial applications. However, for commercial applications, the process can be integrated into air-treatment units, such as rooftop units.



Advantages

- Precise control of humidity rate.
- Industrial units are very efficient for treating high volumes of air.
- Air can be treated continuously all year round.
- Reduced operating costs with natural gas for industrial units.

Applications

- Food factories
- Meat processing plants
- Laboratories
- Computer rooms

Energy Efficiency Financial Assistance*

Not eligible for financial assistance under the Énergir Energy Efficiency Grant.

Selection criteria

- Current rate of humidity in the air
- Humidity rate to be maintained after processing (percentage relative humidity to be maintained)
- Air flow to be treated
- Availability of natural gas for industrial applications

List of manufacturers

Here is a non-exhaustive list of manufacturers.

Industrial applications:

- Munters

Commercial applications:

- Aeon
- Carrier
- Lennox
- Trane
- Airex
- Engineered Air
- McQuay

Commercial: All rooftop unit manufacturers may add (as an option) a thermal wheel for air desiccation.

Installation standards

- Must comply with the CAN/CSA-B149.1 gas code in force and the manufacturer's recommendations.
- ASHRAE standard 62 for ventilation and humidity rates.
- Québec health and safety standards (CSST).

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* Certain conditions apply. The financial assistance is subject to change without prior notice.

These data are provided for guidance only. This Information Sheet is for general use and must not be considered advice. Please ask for assistance on the questions that concern you and do not rely only on the text in this Information Sheet.

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