

CASE STUDY Cadbury Adams Co., Ltd



Confectionery reduces energy use by 50% with Advantix

Cadbury Adams (Thailand) Co., Ltd improved its air conditioning system for a chewing gum production room by replacing a solid desiccant wheel dehumidifier with an Advantix Systems DuCool liquid desiccant unit. The unit enabled the facility to achieve 60% energy savings, while reducing humidity and lowering maintenance requirements.

BACKGROUND

Cadbury Adams Co., Ltd. is a confectionery and beverage manufacturer and a subsidiary of Cadbury plc. Cadbury plc strives to be the world's biggest and best confectionery company, committed to superior performance, growth, efficiency, high quality products, and environmental sustainability. In January 2010, Cadbury plc was acquired by Kraft Foods, Inc., the largest confectionery, food, and beverage corporation in the world.

CHALLENGE

In one of Cadbury Adams' production facilities, temperature

and humidity control was a constant challenge. The facility produced chewing gum, which requires tight control over moisture and temperature conditions. Not adhering to the strict conditions can cause changes in the gum base. Too much moisture causes the gum to become too soft. If the gum dries out, however, it becomes too hard.

Before it is ready for consumption, chewing gum must be manufactured, rolled, stripped, broken, and wrapped. Each step in this process requires a different temperature and relative humidity level.

Initially, Cadbury Adams attempted to maintain these conditions by using a desiccant wheel. This proved inadequate, however; desiccant wheels consume a high amount of energy because they add heat to the dehumidification process. The heat expels the moisture that is absorbed by the desiccant, and regenerates the desiccant to allow it to absorb more moisture. This creates the need to recool the air in order to achieve comfortable conditions, thus driving up energy costs.

Additionally, maintenance of the wheel proved challenging for Cadbury. Desiccant wheels must be replaced every three to five years, and are generally worth 70% of the total dehumidification system cost.



ADVANTIX SOLUTION

Cadbury decided to seek a more economical and effective solution. Cadbury replaced the desiccant wheel with a new system consisting of a fresh air unit with a heat pipe and an Advantix Systems DuCool DT-2400 liquid desiccant dehumidification unit. By using the Advantix Systems technology, Cadbury eliminated the energy consumed by the electric heater. Because the air released by the DuCool unit was cool and dry, they were also able to reduce the amount of energy consumed by the air-handling unit.

The initial cost of installing the Advantix system was 11% lower than the desiccant wheel, and operating expenses were reduced by 50%. Additionally, the improvements enabled Cadbury to reduce the amount of maintenance needed and maintain indoor design conditions at around 64°F and 45% R.H.

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System Advantages

- 50% Energy cost savings
- ROI of 2.3 years
- Precise humidity control
- Minimal maintenance

HOW IT WORKS

Advantix Systems’ cooling & dehumidification systems are based on liquid desiccant’s natural removal of moisture from air. This non-toxic, brine solution cools, dehumidifies and cleans the air at the same time without ever needing to be replaced and without exiting the system. When heated, the liquid desiccant releases the moisture back outside in the form of warm, vapor air, eliminating condensation from any point in the system. Liquid desiccant is also a natural disinfectant, eliminating bacteria, microorganisms, and odor from the air in just one pass.



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