

CASE STUDY



GOLIGHTLY CANDY CASE HISTORY

BACKGROUND

Golightly candy company manufactures sugarless hard candy in a wide variety of colors and flavors. The company began production in Europe in 1933, and relocated to the U.S. in 1942. Now the plant produces 40 different products at a rate of 15,000 lbs. per day. For the last 25 years, Golightly has used Munters dehumidification equipment to speed production and improve profits.

PROBLEM 1— WRAPPING ROOM

After the hard candy is formed and cools to room temperature, it will absorb moisture from the air. Likewise the candy dust produced as the product moves through sorting and wrapping machinery is especially hygroscopic. These sticky particles tend to cling to machinery, causing slowdowns, clogging and sanitation problems.

Additionally, Golightly wraps their product in polypropylene, which is also hygroscopic and its friction increases when it absorbs humidity. This increased friction will slow wrapping.

PROBLEM 2— PACKAGING ROOM

After wrapping, the product moves to the packaging room, where it is divided into batches, then weighed and bagged at high speed. Accurate batching is critical. If a batch is underweight, it cannot be sold because its package label is incorrect. But if the batch is overweight, the overage represents lost profit. Accurate batching requires humidity control. If the candy wrappers absorb moisture from the air, the friction between pieces increases, so they do not flow smoothly through the high-speed machinery. If the wrappers stick, the weighing machine will pull too many pieces into each bag in order to avoid batches which are underweight, which means profit is lost. Keeping the air dry in the packaging room reduces friction, which means product is not “given away”. So product and profits are not wasted.

Above: High-speed wrapping and packaging at Golightly Candy.

DRY AIR SOLUTIONS

Desiccant dehumidifiers are used in both rooms to keep humidity from rising above 45% rh even in the most humid months of the year. Mike Fischer, the General Manager, says "Unless we control humidity below 45%, we have major production problems. But with dehumidifiers, our production runs very efficiently. For example, many companies have trouble wrapping with polypropylene at high speed, so the industry thinks of that material as being expensive and difficult to process. That's a problem for candy manufacturers because the plants which make cellophane—the traditional wrapping material—are major polluters. With increased environmental concerns, our industry needs to move to polypropylene. At Golightly we've made the transition quite smoothly, and can wrap over 900 pieces per minute in our machines. That's largely possible because we store the wrapping material in the dry room, so friction is minimized and candy dust does not stick to machinery.

In the packaging room, the installation is especially simple and inexpensive. A conventional, five-ton rooftop air conditioner provides cooling. Dehumidification is handled independently by a 500 scfm Munters dehumidifier mounted inside the room above the packaging machinery. The rooftop cooling unit operates in response to a thermostat and the dehumidifier operates in response to a humidistat. Because the room is quite small, and because there is no compelling need for uniformity throughout the room, there is no air distribution duct work. Both the air conditioner and dehumidifier simply discharge air into the room above the machines.

Reliability and low maintenance requirements are further benefits to using Munters dehumidifiers. Golightly



Controlling humidity below 45% relative humidity in the bagging room reduces friction between candy pieces, which prevents "bridging" and avoids the lost profits of overweight bags.

purchased the dehumidifier installed on the packaging room in 1968. The unit has operated continuously since then, stopping only to be reinstalled in the current plant as the company expanded several years ago. Mike Fischer and Bill Young, the Chief of Maintenance for Golightly explain: "In 25 years, we replaced the desiccant wheel only twice. For normal maintenance, we change filters every three months and lubricate the wheel support rollers and drive motor bearings once a year. After 25 years of operation, that's a very impressive track record."

In the wrapping room, more attention must be paid to filtration, as hygroscopic dust is generated during normal candy movement through the machinery. Bill Young explains: "On the inlet to the dehumidifier, we have a bank of two filters in series—a rough filter, which we have to change every month and then a high-efficiency filter which we change once a year. That keeps the desiccant from loading up with candy dust."

BENEFITS OF DEHUMIDIFICATION

■ **Fast polypropylene wrapping**—When wrapping material is kept in a dry environment, it does not absorb atmospheric moisture, and runs smoothly through the equipment at high speed. When dust cannot absorb moisture, the candy does not stick and clog machinery.

■ **No "bridging" in weighing bins**—Because the candy wrappers do not absorb moisture, the pieces flow smoothly. They don't clump to form "bridges" which block the chutes that feed candy to the weighing bins.

■ **Higher profits by eliminating overweight bags**—When friction is kept low by drying wrapping material, extra pieces are not pulled into each bag. This preserves profits by eliminating the "free" product shipped in overweight bags.

■ **Humidity control with low maintenance cost**—Actual operating experience has shown that Munters equipment needs fewer than three hours of maintenance a year, and the desiccant wheel life can be more than 15 years. As Tony Corbo, the Golightly Operations Manager says: "The dehumidifiers paid back their cost many years ago through faster production. Without them we really could not operate economically."



The wrapping room is held below 45% relative humidity so candy dust does not stick and clog machinery. Storing the wrapping material in the dry room allows high speed wrapping, even when using polypropylene.

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