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FasTrax FR doors bring energy savings to Arctic Cold Storage

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Arctic Cold Storage, based in St Cloud MN, is a family-owned business that stores meat, poultry, packaged foods, and raw materials for food processing. Its more than 5.5 million cubic feet of temperature-controlled warehouse space means that energy consumption plays a significant roll in day-to-day business.

After constructing a new 80,000-sq-ft facility in 2005, the company used a number of different methods to keep its refrigeration systems running at peak performance, including an "air curtain" for its forklift service passages. Although the air curtain improved energy efficiency and safety, the company believed it could achieve even greater results. When additional service doors needed updating inside the warehouse, the firm began looking at alternatives.

Arctic Cold Storage eventually replaced its air curtains with high-speed roll-up doors, allowing it to save nearly \$50,000 per year in energy costs.

To improve energy efficiencies, the company began to research high-speed roll-up doors. Jay Condon, Arctic Cold Storage general manager, said he decided to take a closer look at the technology after seeing it used at some of his customers' facilities.

"Initially, we weren't familiar with high-speed roll-up doors, but we could see it would be a good fit for our specific needs," he said.

After further analysis, Arctic Cold Storage installed two Rite-Hite FasTrax FR high-performance doors in 2008. The FasTrax FR door combines a Thermal Air system and an R-4 InsulMax insulated curtain, both of which contribute to energy savings in demanding cooler and freezer applications.

Condon was impressed with the speed of the door, which is rated to operate up to 100 inches per second. This allows instant and unlimited access for forklifts and other equipment from one area to another. The door also provides an insulated barrier between the freezer temperatures and door tracks.

According to Condon, Arctic Cold Storage was confident the technically advanced door would address its needs for both productivity and energy efficiency. An energy rebate from the local utility Xcel Energy made the idea of a high-speed roll-up door an even better one.

□ For each door, we saved nearly \$10,000 on both the door and installation, and expect a payback on our investment in less than two years, □ said Condon.

The energy savings per door is:

- Total project cost: \$16,965
- Xcel energy rebate: \$8,300
- Annual demand savings (estimated): 50 kW
- Annual energy savings (estimated): 110,000 kWh
- Customer simple payback (estimated): 1.1 years
- Total annual electricity savings (estimated): \$8,130

The doors are also equipped with standard safety features, including two through-beam photo eyes that constantly monitor the opening and reverse the downward direction when obstructed. Another system called VirtualVision uses motion sensors and LED lights to alert employees to equipment or pedestrians moving on the opposite side of a closed door. Also standard is a soft-bottom edge that helps protect personnel from injury if an accidental impact occurs. Additionally, the soft-bottom edge prevents product damage and delivers a tight bottom seal.

After experiencing the performance of the first two doors □ and capturing the energy savings □ Arctic Cold Storage installed four more FasTrax FR doors at the facility. Five of the doors are used to ensure a temperature difference of 30 □ F between separate areas. One space is maintained at □ 5 □ F and another is held at 35 □ F. The sixth door helps Arctic keep a space in one area at □ 5 □ F and another at 10 □ F.

All told, the six doors allow Arctic Cold Storage to save an estimated \$48,780 per year in energy costs. Condon estimates each FasTrax door activates approximately 2,500 times per day and does so with nearly 100% uptime.

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