



SUCCESS STORY

When Code Compliance Isn't Enough, Manufacturer Extends Electrical Protection to 480-Volt Circuits

Quick Facts:

Industry:
Window-Treatment
Manufacturing

Application:
Injection Mold Production

Specific Use:
Provide GFCI protection for
workers moving equipment
on wheels

End Customer:
Window-treatment maker

Benefits of Product:
Electrical shock protection,
proactively trips when
necessary, reliable
performance, continuous
self-check, ground-check
monitoring circuit, meets
code requirements

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Introduction

When industrial equipment rolls over electrical cords, arc flashes and electrical shock incidents become a threat.

A global window-treatment manufacturer wanted to take a proactive approach to ensure their workers working with injection molds would never experience an electrical injury or fatality. Though they were already code compliant, the company knew that was not always enough.

The manufacturer has a strong safety culture of regular safety training, effective personal protective equipment readily available, and even internal surveillance to monitor the plant. However, PPE and safety training alone are dangerous mitigation methods to rely upon alone, which they understood.

There were several prevalent risks at the plant. Personnel must change out injection molds up to 20 times per day using cranes mounted on rollers. These rollers came into close contact with 480-volt single- and three-phase circuits. The rollers have the potential to snap energized cables creating open circuits, which increases the risk of a ground faults and arc flashes—both of which can seriously injure or kill personnel, as well as destroy equipment.

Situation

The manufacturer uses a lot of equipment that is on wheels and plugged into 480-volt circuits. The National Electrical Code (NEC) does not require ground-fault circuit interrupters (GFCIs) on 480-volt circuits, but after they installed security cameras, the cameras showed that code compliance does not necessarily guarantee a safe environment.

Their cameras revealed that the facility was experiencing arc flashes and ground-fault incidents. One of these incidents, for example, occurred when an overhead crane rolled over a cord and sparked an arc-flash incident. The crane had been pushed by an object a worker knocked into when they were straightening up.

Outcome

To keep its people and equipment safe, they installed the Shock Block SB5000, a GFCI for three-phase systems where the line-to-line voltage is 480 V or less. The Shock Block SB5000 proactively protects personnel from shock by tripping if the continuity of the ground wire breaks between the GFCI and the load. This removes the risk of arc flashes and electrical shock incidents.

With these GFCIs, the manufacturer did not experience any nuisance trips when a local thunderstorm caused a temporary loss of power. The Shock Block SB5000, coupled with their strong safety culture, helps the manufacturer know that their workers are safe from electrical incidents.