

Case Study

Ensuring Safety in the Waste & Recycling



Over the years, the amount of waste produced has been increasing and shows no signs of slowing down. Predictions suggest that by 2050, the production of municipal solid waste will rise by approximately 70% to 3.4 billion metric tons. This will lead to an enormous demand for recycling facilities and production.

The recycling industry faces numerous challenges and risks, with personnel safety being a top priority. It's alarming to know that waste management and recycling workers are exposed to various levels of danger while on the job. Waste and recycling had the second-highest workplace death rate in 2020-21. According to provisional HSE statistics the fatality rate for waste and recycling was 2.57 per 100,000 workers.

An extensive recycling factory in UK wants to create the safest environment for their employees whilst reducing costs due to downtime. With a harsh environment they faced a tough challenge with their existing interlock system for accessing dangerous machinery.

Harsh Environment

Waste and recycling factories can face numerous issues due to various factors. One major issue is the harsh environment within these facilities. Vibrations from machines, dirt and dust from the waste materials, exposure to rain because the facilities are often outdoors, and exposure to saltwater, particularly if the factory is located near the sea, can all take their toll. Vibrations can also lead to safety hazards, such as loose materials falling from conveyor belts or other equipment.

Their existing solutions were working, but due to the difficult environment they were deteriorating and needing replacements on a regular basis. Because the safety system is a critical point of failure, if the safety system wasn't in place our client could not run the machinery. Any downtime for the machinery leads to a loss of productivity and costs money.

A Robust Solution

As a result, the interlocks used within the facility need to be robust enough to withstand these challenging conditions. It is common for facilities to experience problems with interlocks breaking or coming apart, which can be costly and time-consuming to replace. In such cases, it may be necessary to explore alternative products or solutions that are better suited to the challenging conditions.

Sentric interlocks are highly robust, made of stainless steel, and can withstand harsh circumstances. They are ideal for use in environments exposed to moisture, chemicals, and extreme temperatures due to their corrosion-resistant properties. Stainless steel is a strong and durable material that can endure heavy use and mechanical stress. It is a reliable choice for applications that require high durability and resistance to environmental factors.

Additionally, Sentric's service and solution team implemented safety measures to improve the machinery's performance and prevent harm. These include an anti-vibration system, padlocks on the door and frame, and a reliable interlock system to ensure the machinery was safely protected.

Sentric's expertise allows them to analyse the bigger picture and identify major problems. They provide durable interlocking system solutions that can withstand challenging conditions giving personnel peace of mind.

Heavy Gates Access Point

Heavy cast iron gates can pose a problem as they are weighty enough to damage a less sturdy bolt, a situation which is particularly pertinent in waste and recycling factory environments.

The effectiveness of the interlock system can be compromised if heavy-duty doors are not used properly. Slamming or forcing the doors open can lead to broken bolts and jeopardize the safety of the machinery. As with the challenge above, this can result in downtime, repairs, and potential legal consequences, leading to significant financial loss. This is a robust environment and handling the doors carefully is not always possible, so a solution was required



Heavy-duty doors



A Simple Change of Access Application Solution

The Sentric team provided a solution to improve security through the gate by replacing the interlock bolts with large cast iron bolts, which wouldn't break. By moving the application point of the access product to the iron bolt, preventing it from being moved when locked, the problem was solved, with existing products and at no additional cost. This solution was simple and cost effective.

To ensure safe access to the machinery, Sentric secured the access gate with an AIE access lock through the interlocking access system.

Once the gate is opened, the operator can obtain a second key, a personnel key, to keep with them while in the hazardous area. This personnel key assures the operator that the machine cannot be re-started while in the dangerous zone, thus providing additional peace of mind. The process is reversed after the task is finished, and the machine can be safely re-started.



AIE interlock

Conclusion

Our partner encountered difficulties with the outdoor environment, including rain, salt water, and heavy-duty doors. Our interlocking products are specifically designed to withstand these challenges, but effective solutions were provided through our expert team's experience and problem-solving approach.

Through a simple site visit our team can advise on how to make our interlock solutions work, even in the most challenging of circumstances.

Sentric provides a robust and reliable interlocking system, including advanced technology and technical expertise, that is ideal for waste and recycling plants. The recycling industry and their employees benefit greatly from the implementation of trapped key interlocking systems to ensure the safety of personnel and prevent any potential risks or harm. With the expertise of Sentric, the recycling industry can have a reliable and robust interlock system that can withstand difficult circumstances and provide peace of mind for all personnel involved.



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