MICHIGAN State FACE Program
Fatality Assessment & Control Evaluation

General Industry Fatality Summary

Material Handler Crushed by 2000+ pound Super Sack of Pellets

INCIDENT FACTS

INVESTIGATION #:
22MI113

SUMMARY DATE:
June 6, 2025

INCIDENT DATE:
August 22, 2022

WORKER:
31-Year-Old

INDUSTRY:
All Other Plastic Product Manufacturing

OCCUPATION:
Material Handler

EVENT TYPE:
Struck By

Police Photo: Collapsed lower sack causing upper sack to fall

Police Photo: Orange arrow pointing to tape on bottom sack

SUMMARY

A 31-year-old material handler died from positional asphyxia after a nylon "supersack" containing approximately 2200-2300 pounds of plastic pellets fell onto him. The flat-sided but rounded corner supersacks were approximately 4-feet-wide by 4-feet-deep by 5-feet-high and stacked 2 or 3 bags high on wood or plastic pallets within 1 foot of each other in rows. The incident occurred between two rows, seven bags on each side, stacked two high. The distance between the 2 rows was approximately 5-feet 8-inches.

Police Photo: Forklift aisleway with upper sack and pellets on ground.

Employee interviews indicated the bag size and number of bags had increased over the past 2 years, and that bags leaning and being ripped and leaking product had become common. Employees had to stop to clean up the leaks and were using tape to try to re-seal the bags. The decedent had been operating a powered industrial truck (PIT) offloading a product shipment into the warehouse. He was working alone, and the incident was unwitnessed. The decedent's coworker left the area to have some pellets tested, and when he returned approximately 30 minutes later, he found the decedent pinned under a supersack on the floor. The PIT was still running. The coworker called EMS and then called his supervisor. Firefighters cut open the sack and shoveled the pellets away to free the decedent. Resuscitative efforts commenced but were unsuccessful. He was declared dead at the scene.

After the upper sack was removed, responders found a 10-inch-long partially taped cut located approximately 1-foot 6-inches from the ground on the bottommost sack. The tape used on the sack was consistent with a roll of tape found near the decedent. It was hypothesized that the decedent may have cut open the lower bag with the PIT and was trying to tape it shut to prevent the pellets from leaking out of the bag. As the pellets were spilling out, the bottom bag's integrity was compromised, causing the upper bag to slide off the plastic pallet onto him.

REQUIREMENTS

Employers Must:

- Provide training to each newly assigned employee regarding the operating procedures, hazards, and safeguards of the job. See MIOSHA GI Part 1
- Ensure that materials, including scrap and debris, shall be piled, stacked, or placed in a container in a manner that does not create a hazard to an employee. MIOSHA GI Part 1

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RECOMMENDATIONS

MIFACE investigators concluded that, to help prevent similar occurrences, employers should:

Perform a hazard assessment for handling and storing of flexible intermediate bulk containers (FIBC) or "super sacks" to develop, implement, and enforce control measures to minimize the identified hazards. The Flexible Intermediate Bulk Container Association (FIBCA) has developed Handling Guidelines which can assist employers in identifying hazards and control measures for their facility. Additionally, from the ANSI store, ISO 21898:2024 Packaging - Flexible Intermediate Bulk Containers (FIBCs) for Non-Dangerous Goods, Annex D provides guidance on the selection and safe usage of FIBCs.

- Identify and implement appropriate handling and storage methods based on the FIBC type, storage space, etc., and develop written standard operating procedures for the selected handling and storage methods. Confirm with supplier if bag stacking is permitted. *NOTE: in this incident, the supplier did not recommend stacking the sacks.*
- If stacking is permitted, use Pyramid or Supported Stacking method.
  Pyramid Stacking: Each bag above the first layer must sit on at least four lower bags. Each layer is subsequently tiered inwards forming a pyramid structure.
  Supported Stacking: Formed against two retaining walls of sufficient strength.
- Ensure aisles are wide enough for both pedestrian and forklift travel and accessibility.
- Employee Training
  - **Prohibit on-foot approach or repair of a damaged bag without first removing all bags stacked on top**.
  - Instruct employees on all control measures implemented. Re-train employees when necessary.
  - Empower employees to identify lapses in control practices.

Only if designed to be stacked | **Pyramid Stacking** | **Supported Stacking**

Graphic Courtesy of Safeflex.org

CITATIONS

MIOSHA General Industry Safety and Health Division issued the following serious citations at the conclusion of its investigation.

Serious: 408.10011(a): GI Part 1, General Provisions, Act 154 Michigan Occupational Safety and Health Act
An employer shall comply with all of the following:

(a) Provide training to each newly assigned employee regarding the operating procedures, hazards, and safeguards of the job.
(b) Not knowingly authorize a process, machine or equipment to be used that does not meet applicable State Safety Standards
(c) Provide a chain, bracket, or other device and assure its use at all times to restrain compressed gas cylinders from falling.

The employer did not adequately train employees on hazards and safe handling and stacking of plastic media bulk sacks in and around the warehouse.

Serious: 408.10015(1): GI Part 1, General Provisions, Act 154 Michigan Occupational Safety and Health Act
Materials, including scrap and debris, shall be piled, stacked, or placed in a container in a manner that does not create a hazard to an employee.

The facility had palletized bulk sacks of plastic media which were inadequately stacked, creating the following hazards:

- Materials were stacked too closely to avoid contact during routine maneuvers of material handling vehicles.
- Materials were stacked without reinforcement or stabilizing means to prevent leaning, sagging, and falling.

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