SHARP
Safety & Health Assessment & Research for Prevention

Hospitalization Hazard

Food Manufacturing Conveyors

October 2021

Since 2014, **25 Washington food manufacturing workers have been immediately hospitalized for injuries from being caught in equipment on the job.**

Conveyor systems are common in food manufacturing. However, unguarded nip points pose a hazard—many workers have been seriously injured after becoming entangled in rollers and sprockets. These injuries can be prevented by safeguarding conveyors, and training workers about safe use and maintenance.

Maintenance worker fractures arm after slipping into conveyor

A night shift maintenance worker was walking past a waste conveyor in an isolated area outside of the building. He heard a roller about six feet high making an odd noise. He leaned his arm against the frame of the conveyor and turned his head to listen.

The frame was slick and his arm slipped. The roller caught the sleeve of his coveralls and pulled his arm in to the mid-forearm. Now dangling approximately two feet above the ground, he grabbed the conduit above the belt and put his feet on a cross brace to keep more of his arm being pulled in. No one heard him screaming for help in the isolated area.

After about 10-15 minutes, the shop crew, roughly 250 yards away, finally heard him. When they reached the entangled worker, no one knew where or how to shut off the conveyor. After running around the corner to find an unlocked door, they got into the building and found a worker who knew how to turn off the machine. Emergency responders arrived and took him to the hospital by ambulance.

The injured worker sustained friction burns from the conveyor belt and needed surgery to repair several fractures in his arm. He still suffers from chronic pain several years after the incident.

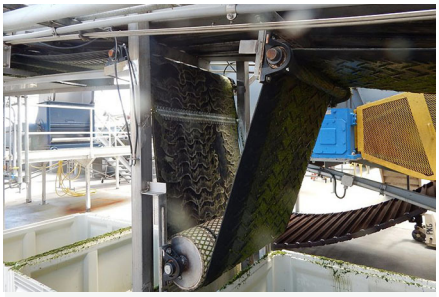
Worker fractures arm when trying to remove object from roller

An inexperienced night shift laborer was boxing corn in the packing room when the machine used to tape the boxes broke. He and the other workers started cleaning up while they waited for the tape machine to be fixed.

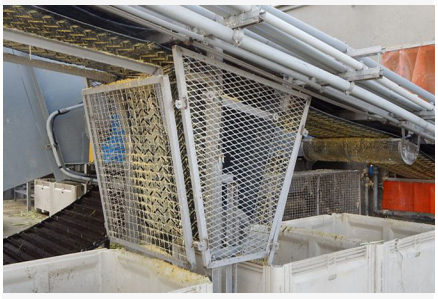
There was a conveyor in the area that had been left on. As he was cleaning, the laborer picked up a three-inch piece of corn and threw it at a trash can across the room. It bounced off the trash can and landed in the roller of the moving conveyor.

As he reached into the unguarded machine to grab the corn, the roller pulled his hand and forearm underneath the belt and around the roller.

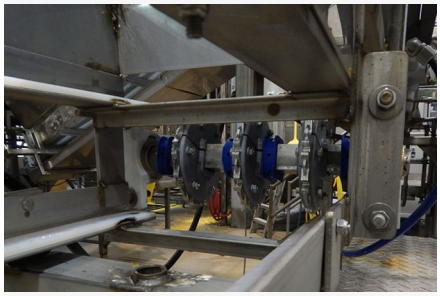
The other workers in the area heard the injured laborer scream and immediately turned the machine off. An ambulance came to take him to the hospital. He needed surgery to repair two broken bones in his forearm.



Incident 1: The maintenance worker's arm became entangled in the upper right roller.



Incident 1: Conveyor belt and rollers that the employer guarded after the incident. The guards are welded to the frame.



Incident 2: Conveyor belt roller and sprockets the laborer's arm was caught in.

Note: The belt is removed in photo.

Recommendations

Training

- **Safe work around conveyors.** Train workers to:
  - Never put hands or any other body part near a moving conveyor belt, roller, or sprocket.
  - Keep loose clothing, long hair, and jewelry away from moving conveyors.
  - Turn off conveyor system and make sure it has completely stopped before removing stuck objects.
  - Not throw or toss items or waste around moving conveyor parts.
- **Hazard recognition.** Train workers how to recognize caught-in and nip point hazards. Actively encourage workers to report these hazards to a supervisor for correction.
- **Emergency procedures.** Train all workers onsite on emergency procedures and where all emergency stop buttons are located.
- **Lockout/tagout.** Train workers on lockout/tagout procedures during new hire orientation, and retrain as necessary.

Plan for Safety

- **Inspect guarding.** Perform regular inspections of nip or shear point guarding. Tag out of service for mainentance.
- **Emergency drills.** Perform regular emergency drills with workers to review emergency procedures in case of equipment caught-ins.

Resources

Safety Standards for Machine Safety, Chapter 296-806 WAC: https://app.leg.wa.gov/wac/default.aspx?dispo=true&cite=296-806

L&I's Consultation Program offers confidential, no-fee, professional advice and assistance to Washington businesses. To request an L&I Consultation go to: lni.wa.gov/safety-health/preventing-injuries-illnesses/request-consultation/

Requirements

Guarding

- Employers must protect employees from hazards created by nip or shear points by one or more safe guards. See WAC 296-806-20030
- Guards must not create additional hazards such as sharp edges or pinch points. See WAC 296-806-20042(1)
- Guards must be:
  - Made of durable materials. See WAC 296-806-20042(2)(a)
  - Strong enough to withstand the forces which they are exposed. See WAC 296-806-20042(2)(b)
  - Securely fastened to the machine. See WAC 296-806-20042(2)(c)
- Employers must make sure guards protect workers by preventing hands or other body parts from reaching through, over, under, or around the guard into the hazard area. See WAC 296-806-20042(3)(a)
- Employers must enclose shafting that is seven feet or less above the floor or working surface. See WAC 296-806-30030(1)

Emergency Stop

- Employers must make sure each conveyor has an emergency stopping device. See WAC 296-806-42004(1)
- Employers must make sure each emergency stopping device is easily identifiable. See WAC 296-806-42004(2)(b)

Reporting

- Employers are required to contact DOSH within 8 hours of a workplace fatality or in-patient hospitalization of any employee and within 24 hours of a non-hospitalized amputation or loss of an eye of any employee. See WAC 296-27-031

The Immediate Inpatient Hospitalizations Project is part of the Safety & Health Assessment & Research for Prevention (SHARP) program within the Washington State Department of Labor & Industries. Learn more at ***Lni.wa.gov/safety-health/safety-research/ongoing-projects/immediate-inpatient-hospitalizations.***

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