

# SAFETY MEMO

March 8<sup>th</sup>, 2021 – Emergency Stops



Did you know?

## Introduction

Multiple studies have shown that industrial accident/injury rates can be reduced by the installation and use of an Emergency Stop (E-stop). In order for an E-stop to be an effective safeguard in accident/injury prevention, all personnel in an industrial facility must know the E-stop location and be ready to use it in an emergency.

## Importance of Emergency Stops

An emergency stop is a safety mechanism used to shut off machinery in an emergency.

No matter how well personnel safeguard machinery, daily exposure to sharp edges and other hazards creates the possibility for injuries to occur. According to the US Occupational Safety and Health Administration (OSHA), there were 312 fatal workplace injuries in the United States deriving from manufacturing in 2013. In many of these instances, the use of an emergency stop function could have prevented an incident deriving from equipment in motion.

## Emergency Stop Design Guidelines

Various published safeguarding standards such as ISO 13850:2015 *Safety of Machinery: Emergency Stop Function – Principles for Design* and CSA Z432 *Safeguarding of Machinery* contain specific requirements for E-stops.

The emergency stop function is activated by a single human action and should be available and operational at all times for quick access to instantly eliminate hazards. After an individual activates it, the machinery must not be able to operate again until they reset the function.

In addition to these federal safeguarding standards, many provincial regulators publish their own set of guidelines on safeguarding machinery, including E-stops.



Figure 1: Example of an E-stop

## Recommendations

- Conduct a risk assessment for all process equipment to determine whether an E-stop is needed and the required safety category to dictate the design of the E-stop circuitry and component specifications.
- Emergency stops should be included in engineering designs in order to ensure there is a secondary mechanism for system shutdown in an emergency situation.
- Emergency stop wiring methods should be selected to be in compliance with recommendations from a robust risk assessment.
- All personnel at an industrial facility shall be familiar with location of E-stops, before working on, or in vicinity of the machines, moving equipment, etc.
- Personnel shall use an E-stop mechanism when any perceived dangerous situation is observed, without a fear of embarrassment, and/or prosecution.

