



SAFEGUARDS AGAINST CONVEYOR BELT HAZARDS

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CONVEYOR BELT SAFETY



- A number of accidents involving conveyor belts can be attributed to accessibility to danger zones. The majority of these occur during maintenance activities with conveyors still in operation and danger zones unprotected
- This guide is directed to workers, technicians, supervisors, and all other parties that may be in contact with conveyor belts.

SAFEGUARDS AGAINST CONVEYOR BELT HAZARDS

**RISK ASSESSMENT
AND REDUCTION**

**PERSONNEL
TRAINING**

**SAFEGUARDING
AGAINST
MECHANICAL
HAZARDS**

**SAFEGUARDING
AGAINST OTHER
HAZARDS**

**SAFEGUARDING
AGAINST CONTROL
SYSTEM FAILURES**

**SAFEGUARDING
AGAINST
MAINTENANCE
HAZARDS**

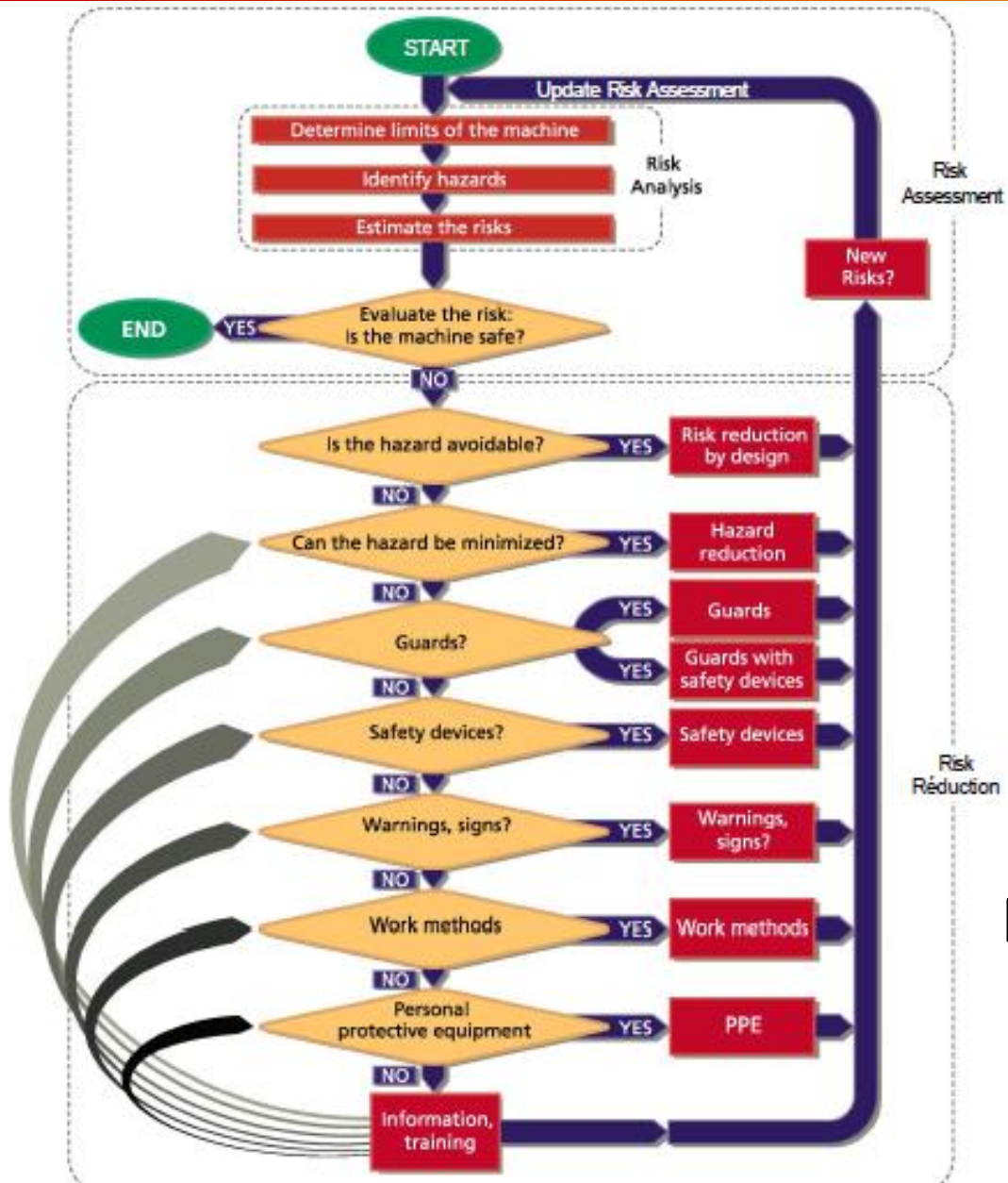




RISK ASSESSMENT AND REDUCTION



RISK ASSESSMENT AND REDUCTION



Risk Assessment

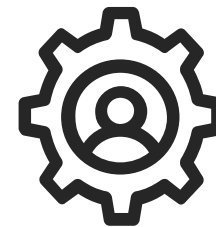
- Identify hazards
- Analyze potential risks

Risk Reduction

- Implement controls to eliminate risks
- Assess effectiveness of controls



SAFEGUARDING AGAINST MECHANICAL HARZARDS



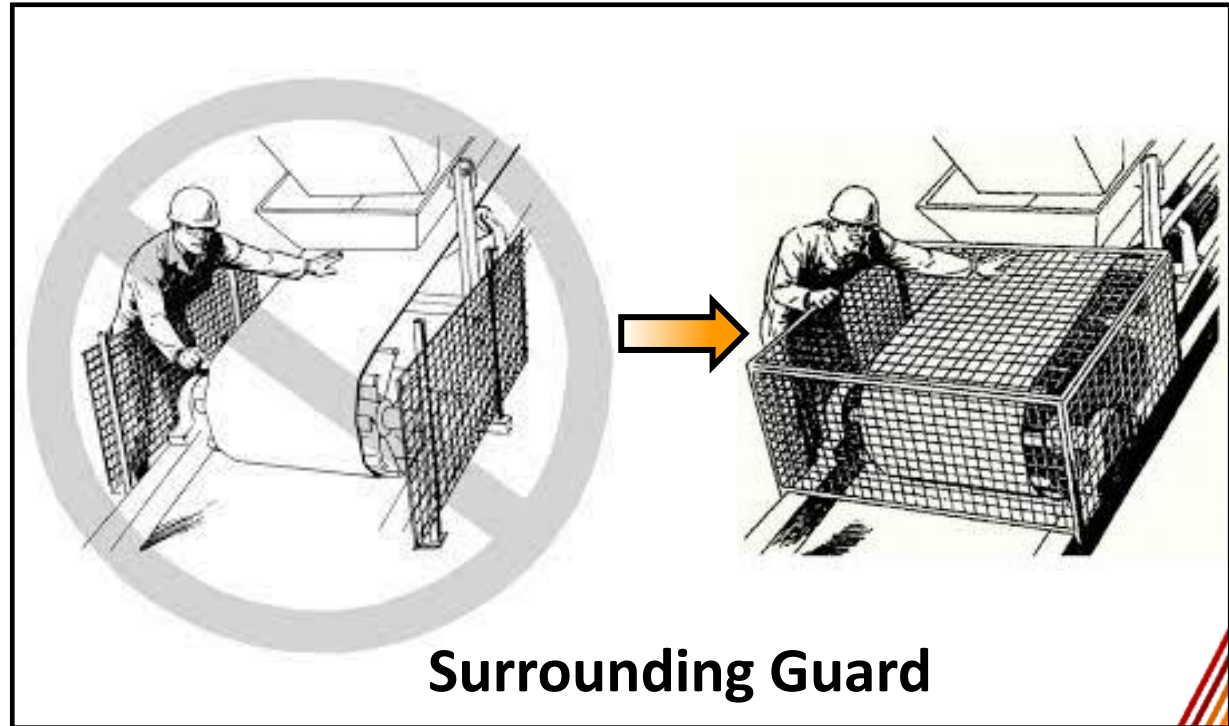
MECHANICAL SAFEGUARDS - GUARDS

(A) GUARDS

Fixed Guards



Barrier Guard



Surrounding Guard

Fixed guards are set in place and may only be removed through the use of tools

MECHANICAL SAFEGUARDS - GUARDS

Interlocking Guards



When not in place, Interlocking guards prevent machinery within a danger zone from operating.
All guards must be able to be removed by means of a tool

Interlocking Guards with lock



Interlocking guards with a locking mechanism prevent entry into a danger zone whilst the machine is operating

MECHANICAL SAFEGUARDS - DEVICES

(B) DETERRENT DEVICES

Idler Aligner



Obstacle Guard Rail



Deterrent devices are physical obstacles other than guards, that reduce the risk of contact with a danger zone. These devices may be linked to E-stop system.

MECHANICAL SAFEGUARDS - WALKWAYS

(C) WALKWAYS

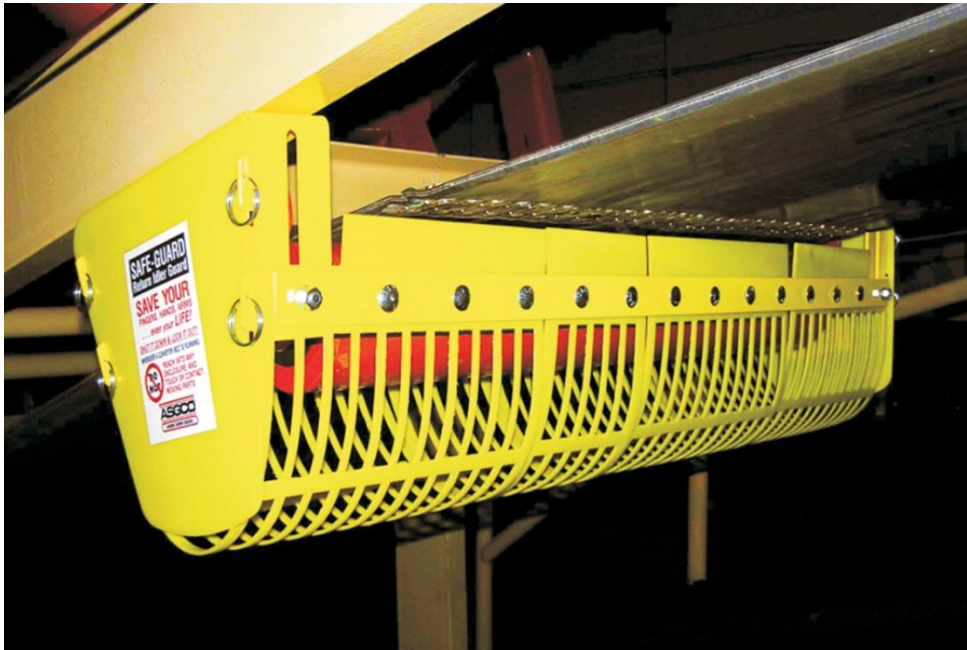


Well designed walkways prevent the use of dangerous shortcuts, particularly underneath conveyor belts

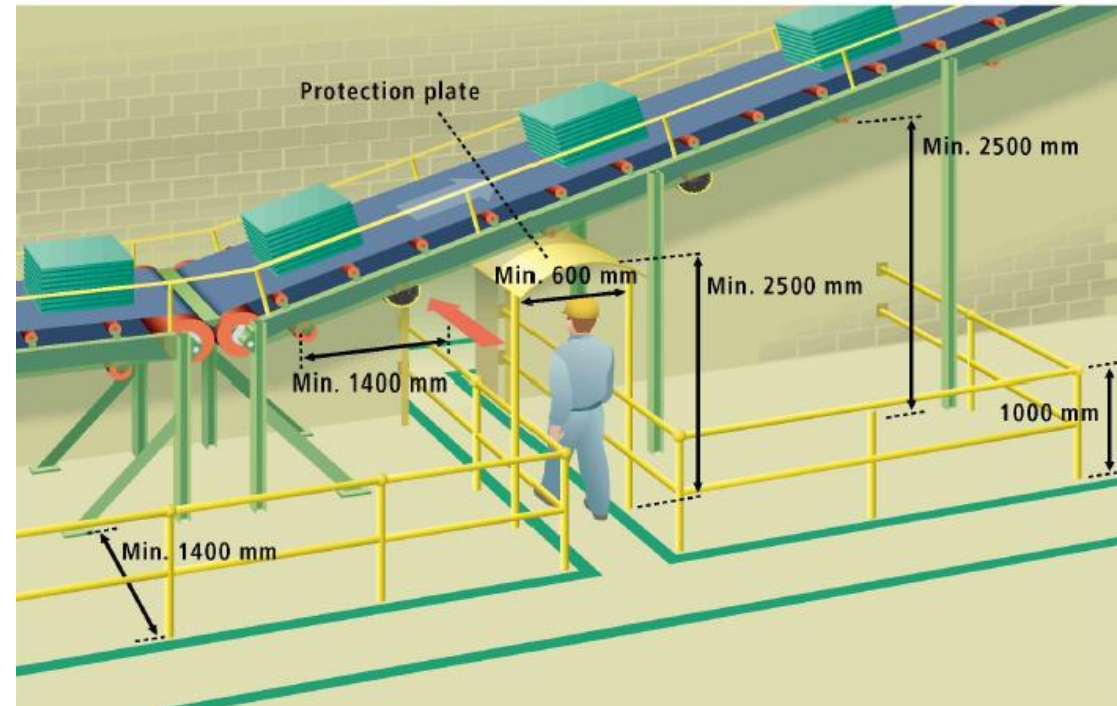
MECHANICAL SAFEGUARDS – FALLING OBJECTS

(D) Overhead Protection

Return Roller Guard



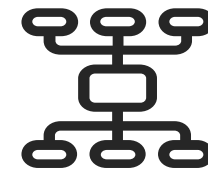
Walkway Protection



These controls prevent injuries from falling overhead conveyor equipment or other objects



SAFEGUARDING AGAINST CONTROL SYSTEM FAILURES



CONTROL SYSTEM FAILURE SAFEGUARDS

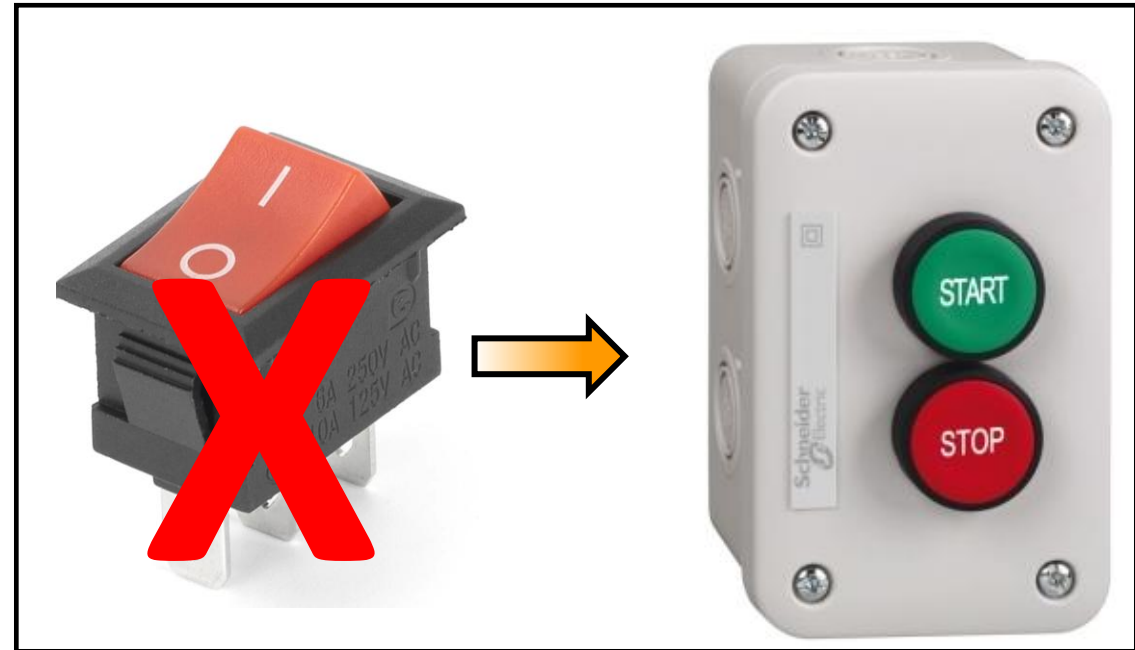
(A) UNINTENDED STARTUP

Startup Siren



Startup siren must sound for 10-12s before conveyor moves and audible from all parts of the plant

Startup Switch/Button



Separate start stop buttons to prevent unintended startups

CONTROL SYSTEM FAILURE SAFEGUARDS

(B) EMERGENCY STOP



Conveyor Pull Wire

- Enables for the stopping of conveyor belt across its entire length. This includes head and tail pulley areas

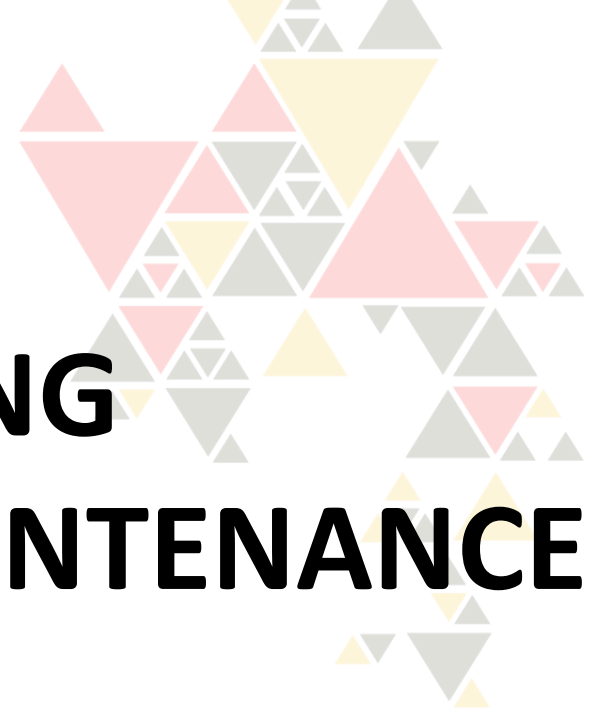
Emergency Stop Button

- Enables for the stopping of conveyor belt at infield control panels or in control rooms





SAFEGUARDING AGAINST MAINTENANCE HARZARDS



MAINTENANCE HAZARDS SAFEGUARDS

LOCKOUT SYTEMS

Lockout Permits



Lockout and risk assessment documentation details the task to be done, the required lockout points and the personnel for the task

MCC's



Motor Control Centre's – allow for a central lockout station for plant equipment

MAINTENANCE HAZARDS SAFEGUARDS

LOCKOUT SYTEMS

Infield Isolator



These isolation stations allow for visible and secure lockout of equipment

Personal Locks



Each member of the maintenance team is to place their personal lock when doing any maintenance work



SAFEGUARDING AGAINST OTHER HARZARDS



OTHER HAZARDS SAFEGUARDS

FIRE AND EXPLOSIONS



In instances where a task may lead to the conveyor belt catching alight, a water container, fire extinguisher or automatic fire suppression systems may be used/installed



PERSONNEL TRAINING



PERSONNNEL TRAINING

Operator Training



Only trained and **authorized/appointed** persons must be allowed to start up, operate and interrupt the normal operation of a conveyor.

Maintenance Training



Only **authorized/appointed** and competent workers possessing the necessary technical expertise must be allowed to maintain conveyors

PERSONNNEL TRAINING

TOOL BOX TALKS



Operating and Maintenance teams may participate in safety talks to discuss safe working practices and incidents from other sites

Personal Protective Equipment



All PPE mandatory for the relevant area must be worn/ made used of. The distinguishing of task-specific PPE must be detail in the risk assessment process





THANK YOU. ANY QUESTIONS?



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