

Machine Guarding Requirements

by Duane A. Rondeau
Director, Technical Services and Product Safety
Besser Company, Alpena, Michigan

All machines are comprised of three fundamental areas: the point of operation, the power transmission device and the operational controls. Even though all machines have the same basic components, their safeguarding needs differ due to the varying physical and environmental characteristics as well as operator involvement. The following article addresses the general requirements for machinery set forth by OSHA, the motions and actions that contribute to different machine hazards and additional considerations that entail overall machine and operator safety.



Large bi-fold doors allow forklift access to the kiln area. Note that the operator interface can be located outside of the fenced area for remote control of the rack transfer system.

Point of Operation

The point of operation is where the work is being performed, such as the mold of a block machine, the crosshead on a pipe machine or the blades of a splitter.

Power Transmission Device

The power transmission apparatus consists of all the components in the mechanical system that transmit energy to the part of the machine performing the work. These components include gears, cams, sheaves, belts, connecting rods, couplings, chains and cranks.

Operation Controls

Operation controls refers to other parts of the machine which move while the machine is working. These can include reciprocating, rotating and traversing parts, as well as feed mechanisms and auxiliary parts of the machine.



Rolling swing-out fencing provides access to the concrete products machine for mold changes and adjustments while providing necessary guarding during machine operation.



The access gate to the kiln area is equipped with an entry box which brings the finger car to a safe, controlled stop before unlocking.

Machinery manufacturers use risk assessments to determine the type and locations for guarding and warnings. Assessment takes into account the risk or probability that a particular hazard will cause an injury and also the severity of the injury. OSHA also requires equipment owners to place additional guarding around the machines, typically in the form of perimeter fencing.

Besser representatives can work with you to create a perimeter guarding solution that will help you comply with OSHA requirements while providing access to equipment. 