



MACHINE GUARDING

Integrated Water Services, Inc.
(the Company)



Purpose

This procedure establishes safety requirements for machine guarding at Integrated Water Services (IWS) to prevent injuries related to equipment operation, such as amputations, entanglement, and crushing hazards. It ensures compliance with OSHA 29 CFR 1910.212 – General Requirements for Machine Guarding while aligning with IWS's operational and safety standards.

Scope

This procedure applies to all IWS employees, contractors, and visitors working around machinery at construction sites, water treatment facilities, and fabrication areas.

Key Responsibilities

Supervisors & Site Leads:

- Ensure machine guards are in place and functioning before operation.
- Conduct inspections and enforce compliance.
- Halt machine use if guards are missing or damaged.

Employees & Operators:

- Use and inspect machine guards before operation.
- Never bypass, modify, or remove guards.
- Report missing or damaged guards immediately.

Maintenance & Field Service Teams:

- Repair or replace defective guards promptly.
- Ensure guards meet OSHA standards before returning equipment to service.

HSEQ (Health, Safety, Environmental & Quality) Team:

- Conduct periodic audits to ensure compliance.
- Provide training on proper guarding practices.

Machine Guarding Requirements

Types of Guards Used at IWS

- **Fixed Guards:** Permanent barriers covering hazardous machine parts.
- **Interlocked Guards:** Prevent machine operation if removed.
- **Adjustable Guards:** Adapt to different tasks while maintaining protection.
- **Self-Adjusting Guards:** Automatically reposition as needed for safe operation.



Specific Guarding Applications

- **Pumps, Motors, and Rotating Shafts:** Must have fixed guards in place to prevent entanglement.
- **Belt Drives:** Must have barrier guards or enclosures.
- **Cutting and Grinding Equipment:** Must have transparent shields to protect against flying debris.
- **Electrical Components & Panels:** Must be locked and labeled per LOTO (Lockout/Tagout) procedures.

Safe Operating Procedures

Pre-Use Inspection:

- Ensure guards are properly attached and functional.
- Do not operate if guards are missing or damaged.
- Confirm emergency stop buttons are functional.

During Operation:

- Never bypass or remove a guard while the machine is running.
- Keep hands, clothing, and tools away from moving parts.
- Use proper PPE (e.g., gloves, safety glasses, face shields) when operating machinery.

After Use:

- Shut down and lock out equipment before performing maintenance.
- Replace all guards before resuming operation.

Training Requirements

Mandatory Training for All Affected IWS Employees

- Purpose and function of machine guards.
- Identifying machine hazards.
- Safe work practices for operating guarded equipment.
- Lockout/Tagout (LOTO) procedures related to machine guarding.

Machine guarding training is provided in the OSHA 10 Hour and 30 Hour training modules and must be repeated every three years.

Inspections & Maintenance

- Supervisors shall conduct weekly inspections of machine guards.
- Any defective guard must be reported immediately and repaired before use.
- HSEQ will perform monthly audits of machine guarding compliance at IWS facilities and project sites.