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WELCOME!

Contractor Safety Meeting
September 12, 2023

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Morenci Mine

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Agenda

- Environmental Share
- Training Dept/GSC
- Event review
 - SWAPP Steering Wheel PFE and Safety Success
 - #6 Thickener - Contact with Powerline
- Riley's - Critical Control Improvement
- Hand Safety
- WPE focus

Environmental Share

Sump Guidance

Sump Guidance

If sumps are not designed, operated and maintained properly, they may potentially be regulated by both the Aquifer Protection Permit (APP) and Underground Storage Tank (UST) Programs

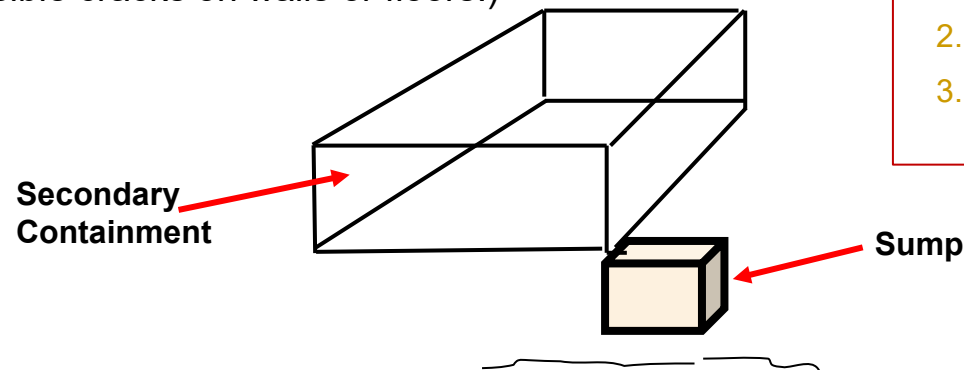
In order to maintain “exempt” status the following must be met:

Underground Storage Tanks (UST):

In order to prevent sumps from being considered UST’s they **must** comply with one of the following exceptions:

1. Be less than 110 gallons
2. Be flow through sumps and/or
3. An emergency sump:
 - the sump is only used during an emergency or maintenance activities and is pumped out within 48 hours of discovery of solution or release.

All sumps **must** be operated and maintained (repaired) to ensure that they are in good working condition (no visible cracks on walls or floors.)



Aquifer Protection Permit:

Sumps **must** be constructed of concrete, steel, plastic, fiberglass, or other non-earthen material that provides substantial structural support and that is designed to contain an accumulation of solid or liquid materials.

Sumps **must** be designed and constructed not to discharge and built on an impermeable barrier that can be visually inspected for leakage.

Examples of non-discharging design/construction:

1. Filling expansion joints with acid resistant caulking
2. Covering water stops in the construction joints
3. Saw cut control joints are filled with acid resistant caulking

Safety Stats - August

- 23 Recordable Injuries (2nd Highest this Year)
 - 7 Contractor Recordable Injuries (Highest in 3 Years)

Contractor employee working on 4980 silver basin was walking to the port-a-john when he stepped and twisted his left ankle. Employee said it didn't hurt much so he continued working. The ankle was hurting this morning so he reported the ankle to his supervisor.
Contractor employee was cutting sheet rock with a utility knife. He was using at-square as a guide when the knife jumped the edge and cut his left index finger. He was not using gloves at the time.
Contractor employee was laying down a 3" X 10' section of pipe when the clamp opened up dropping the pipe on employee foot resulting in a Metatarsul fracture.
A contractor laborer working in townsite was demoing siding on a garage in preparation for stucco work when they lost their balance and a ladder the worker was standing on tipped over. The worker was on the third rung and experienced a light sprain on their ankle when they landed on the ground.
Contractor Employee was cutting a rope that was around a return idler. He used a box cutter, cut towards himself and cut the base of his left thumb causing a small laceration.
A contractor employee was assisting the crane operator (Western Industrial) in lifting and changing out anodes when she got her finger pinched/smashed between two pieces of the attachment.
Rigging sidewall plate and employee hand placement under plate , plate was binded up, Employee picked up plate and plate for unstuck and slid and caught his hand , pulled hand back removed glove and he seen his finger was bleeding

- 4 Recordable Illnesses
- All recordable injuries meet with site GM

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PFE Morenci 769 Lost Steering Wheel

August 31, 2023

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Incident Overview

- A contract haul truck operator was traveling downhill in an unloaded CAT 769D when their steering wheel came off.
- The driver's emergency training kicked in and they activated all braking systems as the truck began to drift into the oncoming traffic lane.
- A service truck in that lane drove off the road to evade the sliding haul truck. After getting around the haul truck, the service truck continued and left the scene.
- The haul truck slid to a stop after ~25'.
- A second haul truck following behind the first also had to deploy their brakes and was able to slide to a stop before rear-ending the first truck.



Initial Findings

- The truck had been in operation for approximately six shifts since a recent rebuild was completed three weeks prior.
- Initial investigation by a mechanic found that a keeper nut was not tightened.
- Empire representative conducted inspection in the field and shared their standard QA process of marking the head of each nut/bolt/screw with white paint/marker as tightened did not occur for the steering wheel “keeper”.



Initial Findings

- The cab was worked on during the powertrain plus rebuild
- The steering column was replaced with a new one
- The old steering wheel was reused
- Torque of the nut was not verified via Empire's "Cover Up" process (Q-C)
- Interviews of every current technician who worked on this machine were conducted
- The technician that installed the steering wheel is no longer employed so an interview was not possible
- A safety stand down was conducted on 9/6/23 in the Tucson facility to discuss the incident and importance of critical fasteners
- A new checklist for cab work in shop has been developed and will be used in both the Tucson and Mesa facilities
- Art McGinty from Empire has inspected the machine in the field. He reinstalled the steering wheel after the incident and reinstalled the nut to proper torque.

Successes

- Training
- Experience
- Actions

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Fatal Risk Deviation on the 6 Thickener

8/23/2023

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Incident Summary

- On 8/23/23 a contractor HDPE Crew was working at the #6 Thickener adjacent to a power line near the work area. There was an electrical event from the 47K live line to the cable of the boom truck. After the Boom truck line became energized the boom truck operator moved the boom away from the line. There was not an identifiable point where it could be determined where the current went to ground to determine exact boom location.
- The contractor crew was replacing the 24-inch pipe in the center of the catwalk on the tailings pipe rack. They removed the old pipe in 10 to 15 foot sections. The crew was using a boom truck to help assist to remove the pipe. There was damage done to one of the phases of the 47k line and damage to the boom truck hoist rope.

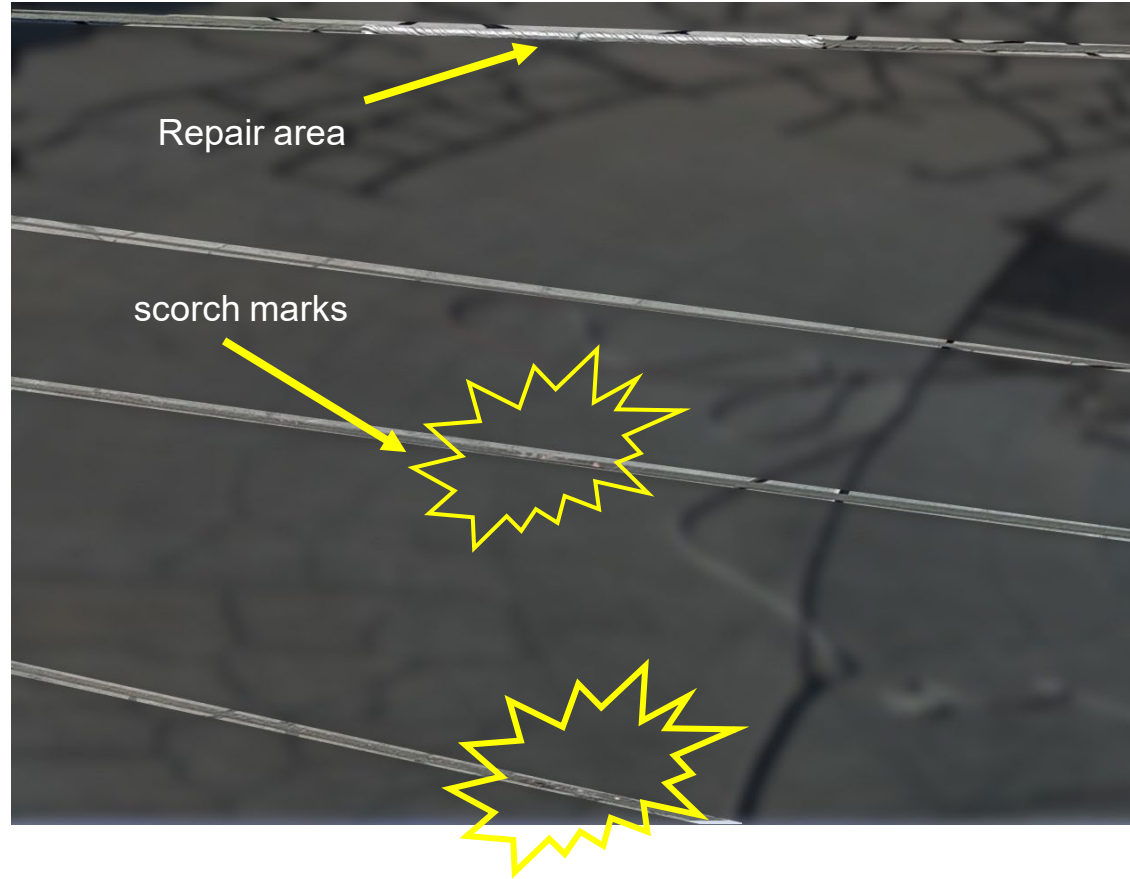
Personnel General Location



Boom truck for the #6 thickener



Boom Rope and Powerline damage



Policy Violation



Technical Supplement

Cranes and Rigging Policy FCX-HS32 | Critical Lifts | Release Date 10/29/20

Critical Lifts- Anytime one of the below criteria are met, a critical lift permit must be completed

- **Criteria for Mobile Cranes**

- Exceeds 75% capacity of the crane
- Requires more than one crane
- Damage or upset of the load could release hazardous material in excess of PEL or could endanger personnel
- The load is unique, irreplaceable, irreparable and vital to system, facility or operation
- Any lift involving personnel hoisting
- All lifts within the boom length of energized power lines
- Lifts where the center of gravity could change
- Pick and Carry operations
- Lifts involving non-routine, high risk, or technically difficult rigging arrangements
- Any lift where the crane is set up over underground facilities (building, structure, transportation tunnel, etc.)
- Any lift deemed critical by site supervision, project management or other qualified person



Electrical Safety Policy

Health and Safety FCX-HS03 | Release 08/2019 | Version 1.1

ADDITIONAL SAFETY REQUIREMENTS

- Never assume that an electrical circuit is de-energized
- Only use serviceable electrical equipment, tools, appliances and extension cords.
- Maintain clearances around electrical panels (30in. (.7m) wide, or as wide as the equipment and 36in. (1m) in front).
- Always use approved insulated tools to move trailing power cable, unless proper LOTOTO procedures have been followed to de-energize the trailing power cable.
- Do not drive over unprotected power cables.
- Maintain minimum clearance from overhead power lines:

Voltage (KV)	Minimum Clearance
Up to 50 KV	10 ft (3.3m)
50-200 KV	15 ft (4.6m)
200-350 KV	20 ft (6.1m)
350-500 KV	25 ft (7.6m)
500-750 KV	35 ft (10.6m)
750-1,000 KV	45 ft (13.7m)

Missing Controls

- Flagging and barricading for swing radius and demarcation of the 18ft centerline boundary.
- No Isolation of line discussed under 18ft planned work radius known to the crew supervisor.
- Breakdown of planned work communication between crew supervisor, operator and crew.
- Congestion issues not communicated to FMI for correction.
- Pipe pulling equipment and method changed by supervisor and not communicated to Western Industrial nor FMI supervision.

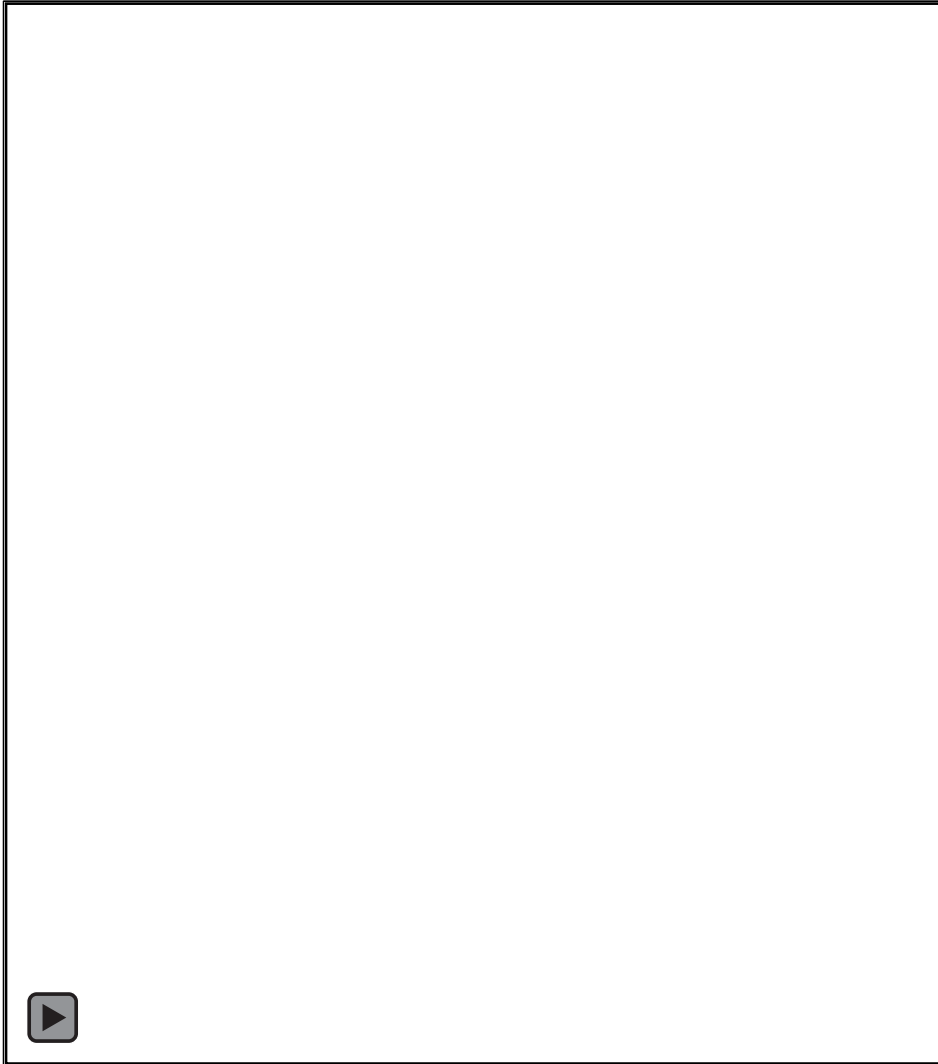
Corrective Actions Summary

- Field Document changes
 - Added multiple lines for WPR time stamps throughout the day or as conditions change
 - Clarified Routine/Non-Routine option with instruction and trigger for signature from senior supervision
 - Added Task training/5000-23 check and examples
 - Under Permits/forms required changed critical lift to “Lift/hoist/Crane Checklist”
 - Under Fatal Risk added instruction: (Use Fatal Risk Management Operator Reference Guide to mitigate all that apply on following page)
 - On Page Two under Controls added: (Check FRM)
- Administration and Training changes
 - Managers at the Daily planning meeting calls out equipment in use on each job and assigns an operator whom the managers are responsible for checking 5000-23’s along with the foreman to check during the TSA.
 - Incorporating the Safe Production Card into our on boarding training and MSHA refresher. Adoption and understanding verified through our testing at the conclusion of training
 - Retrain all current crane operators on the Critical lift requirements and Technical supplement for the Critical lift Gap analysis. Also incorporate the same supplement into new Miner and refresher training.
 - Create Various Posters and signage to enforce the Safe Production Standards as well as the supplement for the Critical lifting program
 - Ensure that segregation with flagging and barricading is done in the area to isolate
 - Additional flagging and barricading as well as any engineering controls from the critical lift permit.
- Engineering :
 - Purchase a proximity electrical warning device for alerting of electrical hazards in the area.
- Substitution
 - Use a different Crane with Logging capability for critical lifts.

Defining Routine Work

- Routine vs. Non-Routine Work
 - Considerations:
 - Frequency of Task – how often we do it
 - Experience of Crew – crews experience performing the task
 - Risk Assessment – TBD with FMI
 - Safety Plan required work for maintenance
 - Roof Work
 - HDPE
 - Tank Work
 - Work around power lines
 - Critical Lift Work that is not Routine

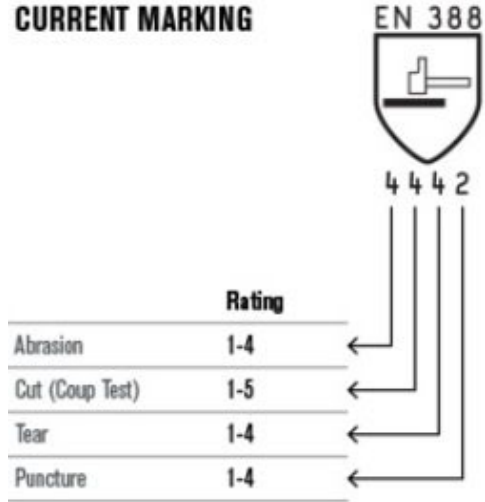
Rileys Industrial Critical Control Improvements



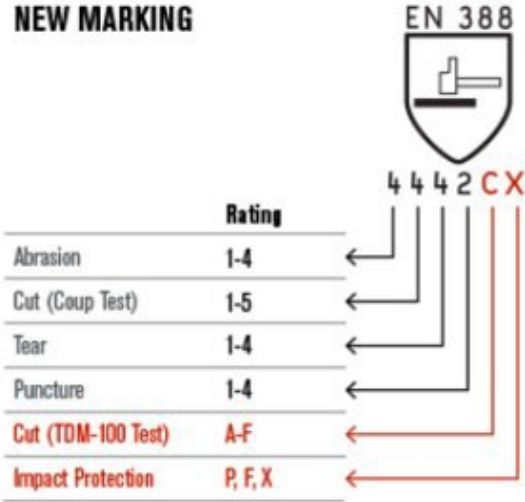
- Robotic High Pressure Spray Handler
- Remote control
- Eliminated need to go inside thickener/ operated from under canopy
- Can mount a camera
- 5k - 40k psi- adjustable
- Connect from pump truck
- Can be dismantled into 4 sections to put in hard
- Removes crew out of harms way
- Attendant and pump Operator
- MOC submitted

Glove Safety Labels & Markings

CURRENT MARKING



NEW MARKING



Organizations



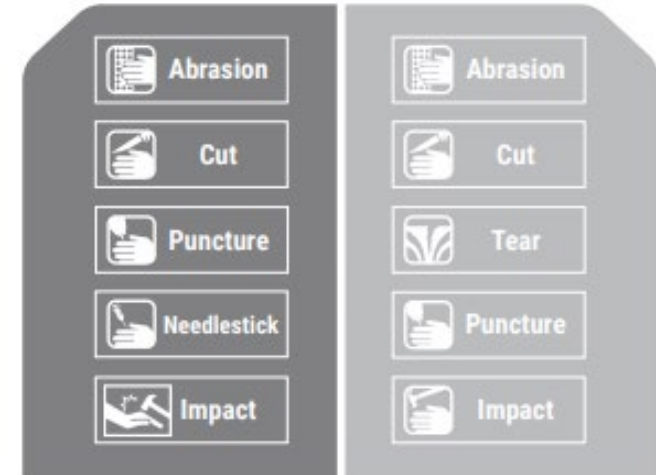
Certification



Performance standards

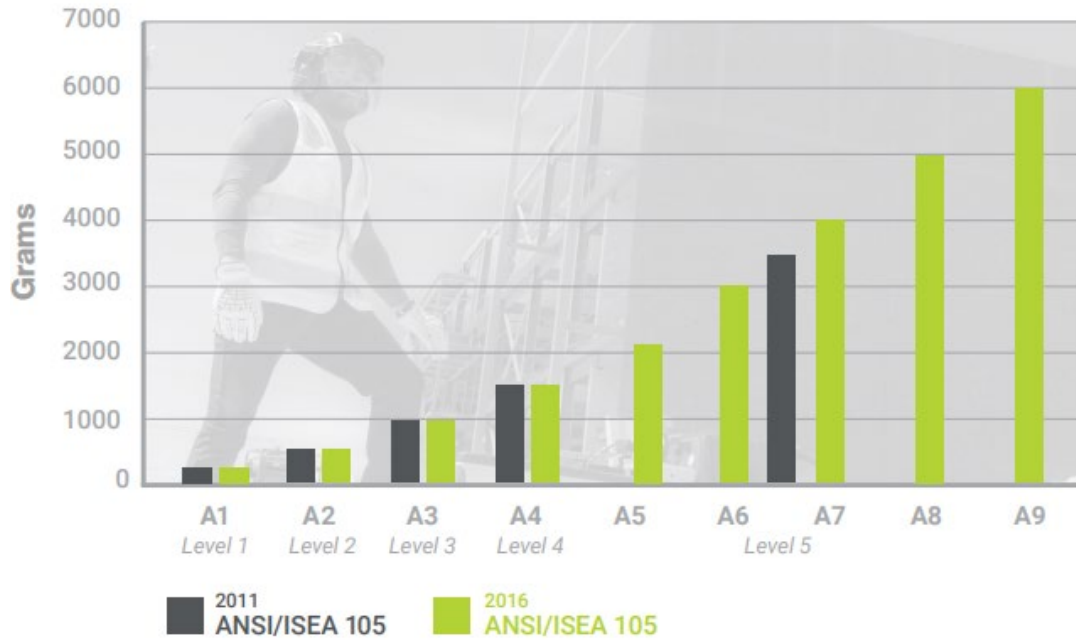


Performance tests



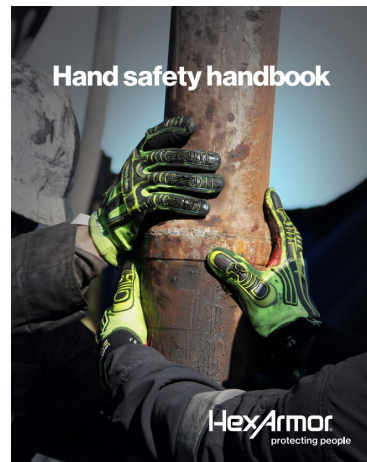
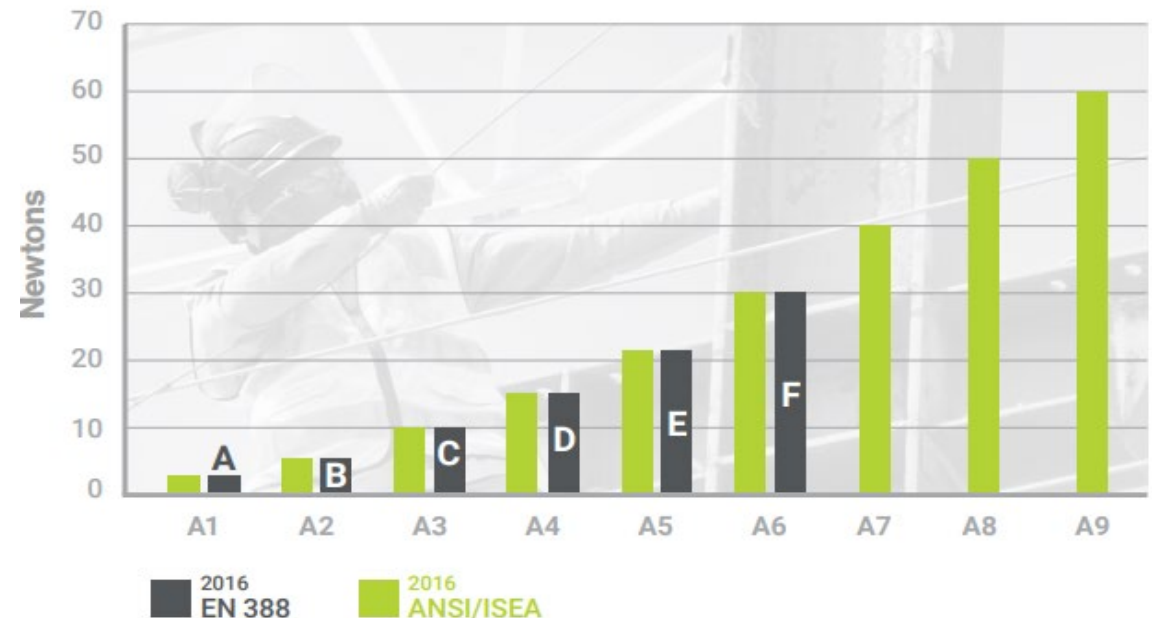
Glove Cut Ratings

Cut resistance rating system: 2011 vs. 2016







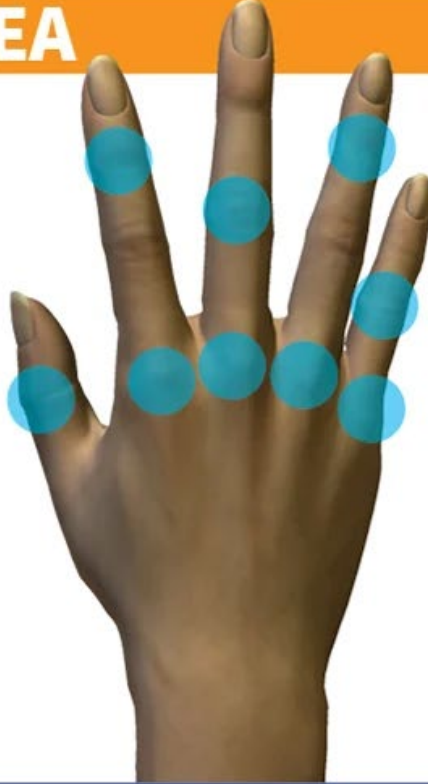
Using utility knives or similar: cut resistant sleeves and gloves with cut resistance rating of 5 (ANSI or equivalent) must be used

ANSI/ISEA & EN 388 cut test standards



[Link >](#)

Glove Impact Ratings

EN	ISEA
 <ul style="list-style-type: none"> • 4 Tests • Pass/Fail $\leq 7\text{kN}$ • EN Reference Digit <u>4244XX</u> ↑ 	<ul style="list-style-type: none"> • 18 Tests <div style="display: flex; align-items: center;">  <div style="background-color: black; color: white; padding: 5px; font-size: 24px; margin-left: 5px;">1</div> </div> <p>$\leq 9\text{kN} = \text{Level 1}$</p> <div style="display: flex; align-items: center;">  <div style="background-color: black; color: white; padding: 5px; font-size: 24px; margin-left: 5px;">2</div> </div> <p>$\leq 6.5\text{kN} = \text{Level 2}$</p> <div style="display: flex; align-items: center;">  <div style="background-color: black; color: white; padding: 5px; font-size: 24px; margin-left: 5px;">3</div> </div> <p>$\leq 4\text{kN} = \text{Level 3}$</p> 
<p>EN 388 Impact Standards : Knuckle Only</p>	<p>ISEA 138 Impact Standards : Knuckle & Fingers</p>

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**Safety Focus
September-August
Workplace Exams**

H&S Mgmt System Process Checks

- Cyclical nature of our performance around the basics-Tailgates, JSAs, Onboarding
- Set the standard for our processes
 - Partner with leaders to check, coach, and reinforce the standard
- Align teams to a direction
 - “What good looks like”
 - Demonstrate importance of the basics
 - Helps further align support groups



- *Planning and Variance Processes*
- *Tailgates and Line Outs*
- *Workplace Exams*
- *JRAs*
- *Process Audits*

Workplace Exam Guidance

Workplace Examinations

The purpose of workplace examinations is to identify and correct hazards in the workplace. Additionally, MSHA requires that workplace examination be completed once per shift, prior to starting work ([see MSHA's 56.18002](#)) The ability to identify hazards is a developed skill that requires leadership involvement and reinforcement. The prompt identification, mitigation, and correction of hazards is key to reinforcing safety as a value for our company and to keep employees safe.

Employee Responsibilities and Hazard Mitigation

- A workplace examination must be performed at least once per shift before work begins or prior to starting work in a new area by a competent individual.
- If a hazard is identified and prior to starting work, the employee notifies a supervisor to determine if the hazard can be corrected or mitigated until a permanent fix can be implemented.
- Examples of common hazards are housekeeping and access issues, electrical hazards, fire extinguisher defects, lifting or falling hazards suspended loads, low berms, etc.
- Hazard identification requires development. Pairing with other employees or a supervisor is a best practice to build skill and improve general hazard identification.

Mitigated = Installed temporary barricading, flagging, tags, signage, or other mechanisms to prevent exposure to the hazard

Corrected = Permanently resolved the hazard (barricading or stairs repaired)

Workplace Exam Guidance

Supervisor Response, Role Modeling, & Planning

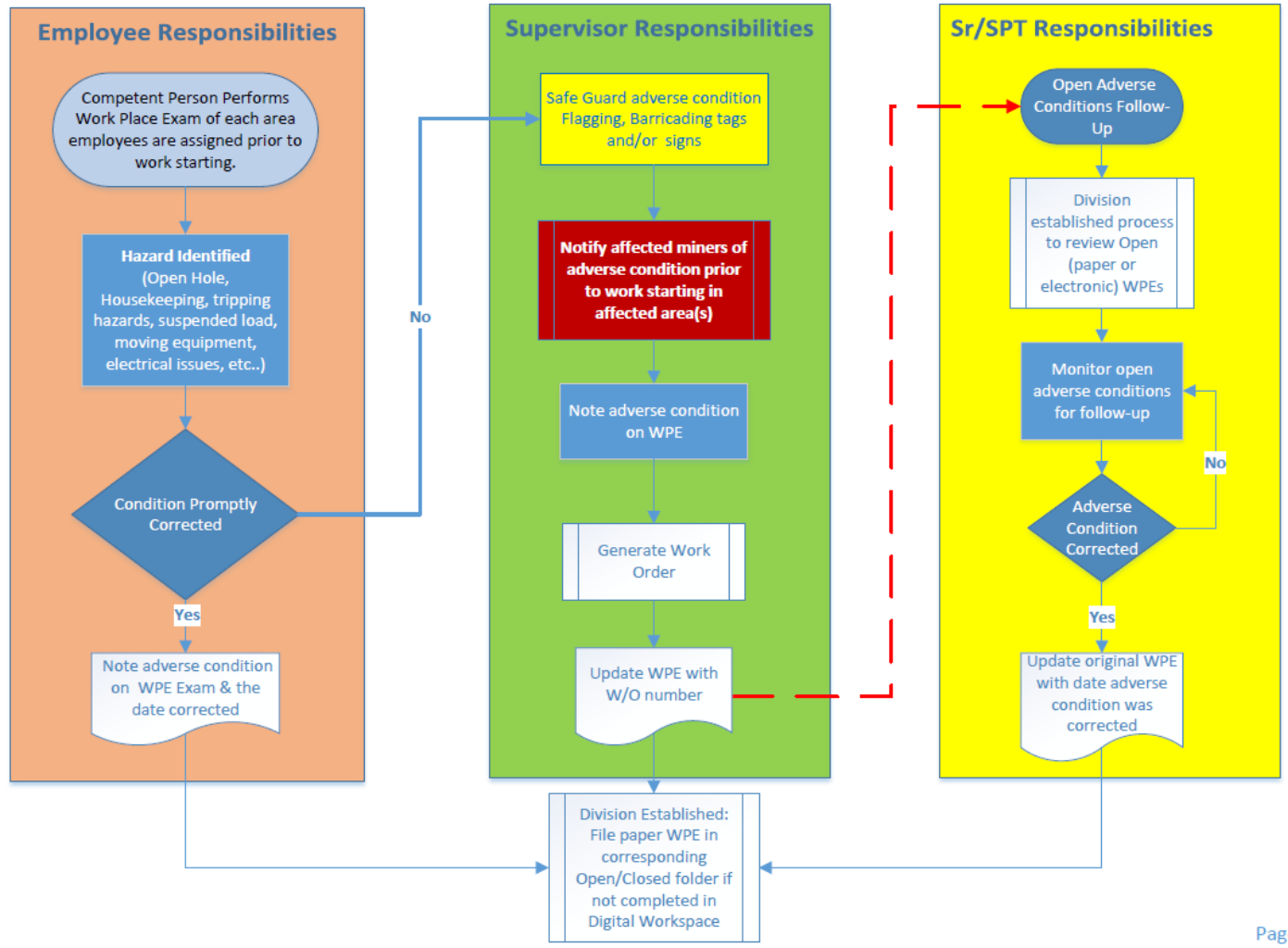
- The supervisor is responsible for ensuring employees perform workplace examinations prior to starting work and are competent and able to identify hazards.
- A supervisor should regularly perform workplace examinations with employees to role model the importance and improve the employee's hazard identification.
- When a hazard is found that cannot be corrected before beginning work, the area supervisor ensures the hazard is mitigated, communicated, and a work order is submitted to permanently correct the issue.
- If a hazard cannot be mitigated or corrected, the supervisor is responsible to notify and remove employees that may be exposed to immediate danger.
- Planners are responsible to ensure the work order is correctly prioritized and remains visible through division planning review processes.

Superintendent/Senior Supervisor Process Involvement

- Sr. leaders are key to strong governance and ensuring work areas meet regulatory requirements.
- A review process that monitors mitigated conditions that require further work prior to being corrected is necessary to ensure hazards are corrected in a timely manner.
- An established review and documentation process is required to meet regulations, specifically where records are retained through paper documentation.

Process Checks: Workplace Examinations

Work Place Examination Process Revised 6/1/2023



WPE-Process Check (Supervisor & Employee)

3. Was an effective workplace exam completed prior to the start of shift or prior to starting work? *

- 1 (Poor) - No workplace exam was completed
- 2 (Average) - Work Place exam completed but after work started

5. Is Supervision involved with WPE process? *

- 1 (Poor) WPE completion not verified or enforced by supervision. Found or known hazards are not being mitigated or corrected.
- 2 (Average) Supervision is present and verifies the WPE is completed but does not regularly verify employees understanding of hazards or if they are identifying all hazards.
- 3 (Exceptional) Supervision role models WPE process and is actively involved in skill building. Works with employees to mitigate and correct all hazards and prioritizes those that are an immediate danger.

hazards? *

- 1 (Poor) Most hazards were overlooked/not identified. Employees working in area with hazards that have not been mitigated or corrected.
- 2 (Average) Hazards were identified and mitigated (flagging, tags etc.) Hazards were not reported to supervision or work orders generated.
- 3 (Exceptional) All hazards were identified and mitigated or corrected. Work orders consistently generated for mitigated hazards.

WPE-Process Check (Sr. Supervisor & Spt)

4. Is Verification of WPE process taking place According to MSHA regulation (MSHA 56.18002)?

- 1 (Poor) There is no established process to verify that WPEs are taking place, hazards are corrected/mitigated, and documentation meets MSHA regulation.
- 2 (Average) Established process in place, but not consistently followed. Periodic spot checks on documentation and field controls identify gaps in documentation or appropriate follow-up to mitigated hazards.
- 3 (Exceptional) Established verification process that is being followed. Scheduled spot checks on documentation and follow up on area hazards is being performed.

5. Are work orders being generated as part of the WPE process?

- 1 (Poor) Hazards that cannot be immediately remedied are being identified but not corrected utilizing the planning process.
- 2 (Average) Hazards are being identified and work orders are being generated, but not prioritized. Follow up is deficient by senior leadership. Work orders are not being closed in a timely manner.
- 3 (Exceptional) Hazards are being identified and priority work orders are being created. Follow up is done to ensure they are being completed and hazards are corrected in a timely manner.

6. Are work areas being audited to ensure WPE process is followed and hazards are controlled?

- 1 (Poor) Senior leadership does not perform any area audits.
- 2 (Average) Senior leadership periodically performs area audits but does not review previous WPEs or evaluates supervisor's engagement in the process.
- 3 (Exceptional) Senior leadership performs area audits to ensure past hazards have been corrected, supervisors are engaged, and hazards are correctly being identified, corrected or mitigated.

Training / GSC Updates

- Points of contact for training will be the front office employees:
 - CliftonTraining@FCX365.onmicrosoft.com
 - Goldie Baker 928-215-2673, gbaker1@fmi.com
 - Felicianna Murillo 928-292-9192, fmurillo@fmi.com
- Contacting other staff directly may not provide information / help needed.
- This will help ensure we have direction and scheduling coming from one source in our department.
- Dave Jackson share-

What Questions do you have?

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Thank you, thank you
very much!

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