

EHS CONCEPTS

MSHA TOP 10

The ten MSHA standards cited most at U.S. mines in 2025, and the mine leader's fix list for each. A free field guide.

Ryan L. Rinehart

Retired Navy Veteran · Navy Safety Technician (NEC 9571) · Navy Rescue Swimmer
19+ years in EHS · Author of Safe on Purpose and No License to Lead

Keep your people whole.

FROM RYAN

The guard on the ground

The examples in this letter (the tail pulley guard, the spillage, the loader, the quarterly report) are composites to show the pattern, not reports of real events.

Every pit has one. The tail pulley guard that came off for a cleanup two weeks ago and is still leaning against the frame. The belt spillage that builds up under the conveyor until somebody shovels it next to a running pulley. The loader with a backup alarm that quit in the spring. Nobody decided to leave them that way. They stayed because nobody owned getting them back.

MSHA counts what its inspectors find. In calendar year 2025, the ten most frequently cited standards drew 20,889 violations, about a quarter of all violations cited at U.S. mines. No. 1 was unguarded moving machine parts, with 2,862. Nine of the ten were also on the 2024 list.

The list is not just paperwork. Mining had 33 deaths in 2025 (preliminary), up from 26 in 2024 (MSHA, as reported by Pit & Quarry). Powered haulage accounted for 13 of them, 39%, and 426 nonfatal injuries. Guards, cleanups, defects, and alarms are the controls between a miner and that list.

This guide takes the ten standards in MSHA's order. For each one you get the pain point, what the data says, the root causes, the rule in plain words with tags, controls in hierarchy order, a printable self-audit, who owns what, and one question to start a toolbox talk.

You do not need all ten. Surface operators will spend most of their time in the Part 56 sections; underground coal operators in the Part 75 sections. Start with the one your last inspection, or your own walk, would find first.

Ryan L. Rinehart

Founder, EHS Concepts — The Ways of Safety

Keep your people whole.



EHS CONCEPTS

— THE WAYS OF SAFETY —

THE VERIFIED NUMBERS

What MSHA cited most at U.S. mines in 2025

20,889

Violations of the top 10 standards in calendar year 2025, 24.69% of all MSHA violations cited

2,862

No. 1: moving machine parts not guarded (30 CFR 56.14107(a)), up from No. 2 in 2024

6 of 10

Top-10 standards from Part 56 (surface metal and nonmetal); three are underground coal (Part 75); one is reporting (Part 50)*

9

Standards on both the 2024 and 2025 lists; each of the nine drew fewer citations in 2025*

33

Mining deaths in 2025 (preliminary), up from 26 in 2024 (MSHA)

13

2025 mining deaths from powered haulage, 39% of the total, plus 426 nonfatal injuries

Citation counts are final; 2025 fatality counts are preliminary. Sources: MSHA, Top 10 Most Frequently Cited MSHA Standards 2025 and its handout (calendar year Jan. 1–Dec. 31, 2025; Mine Data Retrieval System violations data as of April 6, 2026); the 2024 list for comparison; MSHA Mine Injury and Worktime, Quarterly, January–December 2025 (preliminary), Chart 1, which includes contractor deaths; MSHA's Powered Haulage Safety page; and, for the 2024 year-end count of 26, MSHA as reported by Pit & Quarry (Jan. 5, 2026). Citation counts are counts of violations, not of mines. * Rows marked with an asterisk are EHS Concepts calculations or counts from the published figures.

The ten most cited MSHA standards in this guide

	STANDARD	2025 VIOLATIONS AND SHARE OF ALL	2024
1	Moving machine parts · 56.14107(a)	2,862 · 3.38%	2,897 (No. 2)
2	Accumulation of combustible materials · 75.400	2,843 · 3.36%	3,412 (No. 1)
3	Housekeeping · 56.20003(a)	2,368 · 2.80%	2,640 (No. 3)
4	Quarterly Employment and Coal Production Report (Form 7000-2) · 50.30(a)	2,354 · 2.78%	2,568 (No. 4)
5	Electrical conductors · 56.12004	2,280 · 2.69%	2,507 (No. 5)
6	Safety defects; examination, correction, records · 56.14100(b)	2,244 · 2.65%	2,339 (No. 6)
7	Mine ventilation plan · 75.370(a)(1)	1,693 · 2.00%	1,956 (No. 7)
8	Inspection and cover plates · 56.12032	1,497 · 1.77%	1,538 (No. 8)
9	Protection from falls of roof, face, and ribs · 75.202(a)	1,429 · 1.69%	Not in top 10
10	Horns and backup alarms · 56.14132(a)	1,319 · 1.56%	1,527 (No. 9)

Counts, ranks, and shares are MSHA's (handout table). In 2024, No. 10 was the roof control plan, 30 CFR 75.220(a)(1), with 1,493. Shares are of all MSHA violations cited in 2025, as published by MSHA.

BEFORE THE TEN STANDARDS

The five basics that sit under all ten

30 CFR 56.18002 / 75.360, 75.362

Workplace and shift exams · M/NM / COAL · final

Surface M/NM: a competent person examines each working place every shift before work starts, tells miners about hazards, fixes them, and records the exam. Coal: certified preshift and on-shift exams.

30 CFR Parts 46 and 48

Training · ALL · final

New miners get at least 24 hours of training under Part 46 (new underground miners get 40 hours under Part 48 before starting work), new task training before a new task, and at least 8 hours of annual refresher training.

30 CFR 50.10

Immediate notification · ALL · final

Call MSHA at 1-800-746-1553 within 15 minutes of knowing about a death, an injury or entrapment with reasonable potential to cause death, or another incident on MSHA's list (the rule's term is "accident," defined in 30 CFR 50.2).

Mine Act Sec. 105(c)

Miners' rights · ALL · final

Miners may report hazards, request an inspection, and exercise their other rights under the Act without discrimination or retaliation. The warning comes from miners who believe it is safe to speak.

MSHA compliance assistance

EFSMS and Small Mine Guide · GUIDANCE

MSHA's Educational Field and Small Mine Services helps operators build training and safety programs. State grant programs offer training, often free.

Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Ten-minute foundation check

#	CHECK	YES	NO
1	We pulled our own citation history from MSHA's Mine Data Retrieval System and know our top three.	☐	☐
2	Every working place is examined each shift before work, and hazards found are fixed and recorded.	☐	☐
3	Miners know they can stop and report a hazard without retaliation, and we can show one recent report that got fixed.	☐	☐
4	Everyone in charge knows to call MSHA within 15 minutes after a serious incident, and the number is posted.	☐	☐
5	Training plans are current, and new task training happens before the new task.	☐	☐
6	Contractors are covered by the same exams and controls as our own miners.	☐	☐
7	Defects found in pre-op checks are fixed or tagged out the same shift.	☐	☐
8	Leaders walk the plant or the section and look at guards, housekeeping, and equipment at least weekly.	☐	☐

HOW TO USE THIS GUIDE

Walk it. Score it. Own it.

1. Start with the standard your last inspection or your own walk would flag first, not the one at the top of this guide.
2. Print the self-audit page. Walk the plant, pit, shop, or section. Thirty minutes.
3. Score what you can see or put your hand on: the guard, the spillage, the cover plate, the alarm. If the exam book and the plant disagree, the plant is the truth.
4. Every “No” gets one owner and one date before you leave. Anything that could hurt someone this shift gets stopped and fixed now.
5. Walk it again in 30 days. A fix that is not verified is a wish.

Spotlight: powered haulage and the written mobile equipment program

THE PAIN POINT **A haul truck backs toward a pickup parked in its blind spot at a surface mine. The backup alarm works, but nobody can hear it over the crusher, and the pickup has no buggy whip.** (illustrative)

Powered haulage incidents caused 13 of the 33 mining deaths in 2025 (39%) and 426 of 4,792 nonfatal injuries, according to MSHA. Two of the top-10 standards, safety defects (56.14100(b)) and horns and backup alarms (56.14132(a)), sit right on top of this risk. (Preliminary MSHA data.)

Since July 17, 2024, surface metal and nonmetal operators (and surface coal operators, under 30 CFR 77.2100–77.2104) must have a written safety program for surface mobile equipment: identify and reduce hazards, set maintenance and repair procedures, evaluate new safety technology (collision warning, cameras, seat belt interlocks), train miners, update it at least annually, and get miners' input (30 CFR 56.23000–56.23004).

- ☐ We have a written surface mobile equipment safety program, updated in the last 12 months, with miners' input.
- ☐ Traffic rules for speed, right-of-way, and light vehicles near haul trucks are posted and followed (56.9100).

USE THIS EVERY TIME

When you find a gap: the eight-step response

1. Stop or contain.	If the gap could hurt someone this shift (a missing guard on a running conveyor, a dead backup alarm, a damaged cable, unsupported roof, a combustible buildup), stop that equipment or area now. Anyone can call it. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.
2. Fix the condition first.	Reinstall the guard, lock out and repair, tag out the machine, support the roof, clean it up. Then fix the paperwork so it says what is true.
3. Find the decision that allowed it.	Ask what made the condition normal: production pressure, a short maintenance crew, a guard that is hard to put back, a cleanup that only happens on down days. Do not stop at "they should have known."
4. One owner. One date.	One name, not a department. One date, not "ASAP."
5. Verify in the field.	The owner shows the fix at the machine or in the section. Re-check in 30 days.
6. Look sideways.	If one conveyor was missing a guard, check every conveyor this week. If one truck had a dead alarm, check the fleet.
7. Protect the person who raised it.	Thank them and tell them what changed. Retaliation against a miner for reporting a hazard or exercising rights under the Mine Act is illegal under Section 105(c).
8. Get help when you need it.	MSHA's Educational Field and Small Mine Services offers compliance assistance and training help, and state grant programs offer miner training (msha.gov/compliance-enforcement/compliance-assistance). Your insurer's loss-control staff are also a free resource.

Leaders own the conditions. Workers make choices inside the conditions we build. When a gap shows up, the first question is not "who did it?" It is "what did we build, fund, schedule, or tolerate that made this normal?"

This guide is a practical summary for planning and self-audit. It is not legal advice and does not replace the text of the Mine Act or MSHA rules, or your approved ventilation, roof control, or training plans. Regulatory text is paraphrased. When this guide and a regulation disagree, the regulation controls. Citation counts are national and will not match any one mine's experience; 2025 fatality figures are preliminary.

01

Moving machine parts

30 CFR 56.14107(a), 56.14112, 56.14105, 56.12016 [M/NM]

2,862

violations in 2025, the most cited
MSHA standard

3.38%

of all MSHA violations cited

7 ft

guards required unless parts are at
least 7 feet from walking or working
surfaces

THE PAIN POINT **A tail pulley guard came off for a cleanup and is leaning against the frame. The belt is running. A miner shovels spillage a foot from the pinch point because the shift is behind.** (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Moving machine parts was the No. 1 standard in 2025 with 2,862 violations (3.38% of all), up from No. 2 in 2024 (2,897). The count dipped slightly; the rank rose because combustible accumulations fell further. The rule covers gears, sprockets, chains, drive, head, tail, and takeup pulleys, flywheels, couplings, shafts, fan blades, and similar parts.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Guards are heavy or awkward, so they are not put back after cleanup or maintenance.
- Guards do not extend far enough to stop a reach around, over, or under.
- Cleanup is done with the belt running to protect production.
- Damaged guards are left in place but no longer protect anyone.
- New or moved equipment starts up before guards are fabricated.

REQUIREMENTS AND CONTROLS · MOVING MACHINE PARTS

What the rules require, in plain words

56.14107(a) · M/NM · final	Guard moving machine parts that can cause injury: gears, sprockets, chains, drive, head, tail, and takeup pulleys, flywheels, couplings, shafts, fan blades, and similar parts.
56.14107(b) · M/NM · final	Guards are not required where exposed moving parts are at least 7 feet away from walking or working surfaces.
56.14112 · M/NM · final	Guards must withstand vibration, shock, and wear, must not create a hazard, and must be securely in place while machinery runs, except for testing or adjustments that cannot be done without removing them.
56.14105 · M/NM · final	Do repairs and maintenance only with the power off and the machine blocked against hazardous motion, unless testing truly requires motion and people are protected.
56.12016 · M/NM · final	De-energize and lock out electrically powered equipment before mechanical work; only the person who installed a lock (or authorized personnel) removes it.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Redesign spillage points and add belt cleaners and skirting so miners do not need to clean near pulleys.
Engineer	Full-enclosure guards that prevent reach-around, hinged or lightweight sections, and interlocks on access doors.
Equipment	Remote greasing lines and extended grease fittings so lubrication does not require removing guards.
Administrative	No start-up without guards in place. Lockout for every cleanup near moving parts. Guard checks on every workplace exam.
Small-shop fix	Walk every conveyor this week with a can of paint. Mark every missing or damaged guard and assign each one to a welder with a date.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

01 · Moving machine parts

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Every head, tail, drive, and takeup pulley is guarded.	☐	☐	☐	
2	Guards prevent reaching around, over, under, or through.	☐	☐	☐	
3	Guards are securely fastened, not leaning in place.	☐	☐	☐	
4	No damaged guard is still in service.	☐	☐	☐	
5	Grease points can be reached without removing guards.	☐	☐	☐	
6	Cleanup near moving parts is done with equipment locked out and blocked.	☐	☐	☐	
7	Miners have their own locks and use them.	☐	☐	☐	
8	New or relocated equipment is guarded before start-up.	☐	☐	☐	
9	Guards are checked on each workplace exam.	☐	☐	☐	
10	Missing guards found are fixed before the equipment runs.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · MOVING MACHINE PARTS

Who owns it

Operator / mine manager	Funds guard fabrication and spillage fixes; no start-up without guards.
Plant foreman	Checks guards each shift and stops equipment with a missing guard.
Maintenance lead	Fabricates and repairs guards and installs remote grease lines.
Miners	Lock out before cleaning, replace guards after work, and report gaps.
Safety / training lead	Trains on guarding and lockout and audits guards monthly.

How to verify it is working in the field

- Walk every conveyor and crusher. Count guarded versus unguarded pinch points.
- Watch one cleanup near a pulley. Check that lockout happens.
- Ask a miner which guard is the hardest to put back, and why.

TOOLBOX TALK STARTER

Which guard on this plant is most likely to be on the ground right now?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Stop and lock out any equipment with a missing or damaged guard. Name the owner and date for the replacement guard and the root fix for why it came off. Then run the eight-step gap response at the front of this guide.

02

Accumulation of combustible materials

30 CFR 75.400, 75.400-2, 75.402, 75.403 [COAL]

2,843

violations in 2025 (No. 2)

3,412

violations in 2024, when it was No. 1

80%

minimum incombustible content of combined dust where rock dust is required

THE PAIN POINT Float coal dust builds along a belt entry between cleanups. The belt is spilling at a transfer point, and the cleanup crew was pulled to a section to keep coal running. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Accumulation of combustible materials in underground coal mines was the No. 2 standard in 2025 with 2,843 violations (3.36% of all), down from No. 1 in 2024 with 3,412. It covers coal dust (including float coal dust on rock-dusted surfaces), loose coal, and other combustibles in active workings and on electric and diesel equipment. Accumulations fuel mine fires and explosions.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Cleanup crews are pulled to production.
- Belt spillage and transfer points are not fixed, so cleanup never catches up.
- Rock dusting falls behind advancing faces.
- Equipment is not cleaned of oil, grease, and coal dust.
- The cleanup program is written but not resourced.

REQUIREMENTS AND CONTROLS · ACCUMULATION OF COMBUSTIBLE MATERIALS

What the rules require, in plain words

75.400 · COAL · final	Clean up coal dust, float coal dust on rock-dusted surfaces, loose coal, and other combustibles, and do not let them accumulate in active workings or on equipment.
75.400-2 · COAL · final	Establish and maintain a program for regular cleanup and removal of accumulations, available to MSHA.
75.402 · COAL · final	Rock dust all underground areas to within 40 feet of working faces, except areas too wet or too incombustible to propagate an explosion.
75.403 · COAL · final	Keep the incombustible content of combined dust at least 80%, increased 0.4% for each 0.1% of methane.
75.360 / 75.362 · COAL · final	Certified examiners do preshift and on-shift exams for hazardous conditions, including accumulations.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Fix spillage at the source: belt alignment, skirting, transfer chute design.
Engineer	Belt scrapers, water sprays at transfer points, and trickle dusters.
Equipment	Dedicated cleanup equipment and rock dusting machines that are not shared with production.
Administrative	A cleanup program with named crews, frequencies by area, and a rule that cleanup is not cut to make tons.
Small-shop fix	List your three worst spillage points and fix one mechanically this month. Assign cleanup crew hours that dispatch cannot pull.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

02 · Accumulation of combustible materials

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Belt entries are free of float coal dust and loose coal.	☐	☐	☐	
2	Transfer points are not spilling.	☐	☐	☐	
3	Rock dust is current to within 40 feet of faces.	☐	☐	☐	
4	Dust survey results meet the 80% incombustible minimum (higher with methane).	☐	☐	☐	
5	Equipment is free of coal dust, oil, and grease buildup.	☐	☐	☐	
6	The written cleanup program is current and followed.	☐	☐	☐	
7	Cleanup crews are not routinely pulled to production.	☐	☐	☐	
8	Preshift and on-shift exams record accumulations and their correction.	☐	☐	☐	
9	Accumulations found are cleaned before production resumes in that area.	☐	☐	☐	
10	Spillage sources are tracked and fixed, not just cleaned.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · ACCUMULATION OF COMBUSTIBLE MATERIALS

Who owns it

Operator / mine manager	Protects cleanup and rock dusting hours from production pressure.
Section foreman	Checks accumulations each shift and stops production for cleanup.
Belt / maintenance lead	Fixes spillage sources and maintains scrapers and sprays.
Miners	Report accumulations and spillage and clean up as assigned.
Safety / ventilation lead	Runs rock dust surveys and audits the cleanup program.

How to verify it is working in the field

- Walk a belt entry end to end. Mark every accumulation.
- Compare the cleanup schedule to who actually did cleanup last week.
- Review the last dust survey results by area.

TOOLBOX TALK STARTER**Where does coal spill on this belt line, and why have we not fixed it?**

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Clean up any accumulation before running in that area. Name the owner and date for the spillage source fix and for catching up rock dusting. Then run the eight-step gap response at the front of this guide.

03 Housekeeping

30 CFR 56.20003(a), 56.11001 [M/NM]

2,368

violations in 2025 (No. 3)

2,640

violations in 2024, also No. 3

2.80%

of all MSHA violations cited

THE PAIN POINT A walkway along a screen deck is half-blocked by spare parts, hoses, and spilled material. A miner carrying a bucket of tools steps over it every shift. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Housekeeping at surface metal and nonmetal mines was No. 3 in both 2024 (2,640) and 2025 (2,368, 2.80% of all violations). The standard requires workplaces, passageways, storerooms, and service rooms to be clean and orderly. Poor housekeeping drives slips, trips, and falls and blocks access to equipment and escapeways.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- There is no place to put parts, hoses, and tools, so they stay where they were used.
- Spillage builds up faster than it is cleaned.
- Cleanup is scheduled for down days that keep getting cancelled.
- Nobody owns common walkways and stairs.
- Old equipment and scrap are never hauled off.

REQUIREMENTS AND CONTROLS · HOUSEKEEPING

What the rules require, in plain words

56.20003(a) · M/NM · final	Keep workplaces, passageways, storerooms, and service rooms clean and orderly.
56.20003(b) · M/NM · final	Keep work floors clean and, as far as possible, dry; maintain drainage where wet processes are used and provide dry standing places where practicable.
56.20003(c) · M/NM · final	Keep floors, working places, and passageways free from protruding nails, splinters, holes, and loose boards, as practicable.
56.11001 · M/NM · final	Provide and maintain safe means of access to all working places.
56.18002 · M/NM · final	The workplace exam each shift looks for conditions that may affect safety, including housekeeping.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Reduce spillage at the source so there is less to clean.
Engineer	Grated walkways, drainage, and storage racks where parts and hoses are used.
Equipment	Skid steers or vacuum trucks assigned to cleanup; hose reels and tool boards.
Administrative	Owners for each area, a daily end-of-shift cleanup, and a monthly scrap haul-off.
Small-shop fix	Put a tool board and hose rack at the two busiest work areas. Assign each walkway to a crew by name.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

03 · Housekeeping

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Walkways and stairs are clear of material, parts, and hoses.	☐	☐	☐	
2	Spillage is cleaned before it builds up.	☐	☐	☐	
3	Floors are dry or drained, with dry standing places where wet processes run.	☐	☐	☐	
4	No holes, loose boards, or protruding hazards on floors and walkways.	☐	☐	☐	
5	Storerooms and shops are orderly.	☐	☐	☐	
6	Parts, hoses, and tools have a designated place.	☐	☐	☐	
7	Scrap and old equipment are removed on a schedule.	☐	☐	☐	
8	Every area has a named owner.	☐	☐	☐	
9	Safe access exists to every working place.	☐	☐	☐	
10	Housekeeping is checked on each workplace exam.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · HOUSEKEEPING

Who owns it

Operator / mine manager	Funds storage, drainage, and cleanup equipment.
Foreman	Assigns areas and checks them each shift.
Maintenance lead	Cleans up after repairs and removes old parts.
Miners	Keep their area clean and report access problems.
Safety lead	Audits housekeeping and tracks repeat areas.

How to verify it is working in the field

- Walk every stairway and walkway. Count obstructions.
- Ask who owns each area. See if the answer is a name.
- Check when scrap was last hauled off.

TOOLBOX TALK STARTER**What do you step over every day that should not be there?**

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Clear any blocked walkway or stair now. Name the owner and date for storage and spillage fixes. Then run the eight-step gap response at the front of this guide.

04 Quarterly employment and production reports (Form 7000-2)

30 CFR 50.30(a), 50.10, 50.20 [ALL]

2,354

violations in 2025 (No. 4)

15 days

after each calendar quarter to file
Form 7000-2

5 years

to keep the operator's copy

THE PAIN POINT A small sand and gravel operation runs seasonally. The office manager who filed the quarterly report retired, and nobody else knew it was due. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Failing to prepare and submit MSHA Form 7000-2, the Quarterly Employment and Coal Production Report, was No. 4 in both years: 2,568 violations in 2024 and 2,354 in 2025 (2.78% of all). It is a paperwork standard, but MSHA uses these hours to calculate injury rates, so missing reports distort the safety picture.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- One person knows the reporting requirement and nobody backs them up.
- Seasonal or intermittent mines forget quarters with little activity.
- Contractor and operator hours are confused.
- Electronic filing accounts lapse.
- Reporting is seen as optional paperwork, not a safety duty.

REQUIREMENTS AND CONTROLS · QUARTERLY EMPLOYMENT AND PRODUCTION REPORTS (FORM 7000-2)

What the rules require, in plain words

50.30(a) · ALL · final	Each operator of a mine where anyone worked during any day of a quarter files Form 7000-2 within 15 days after the end of the quarter and keeps a copy at the nearest mine office for 5 years.
50.30(b) · ALL · final	Coal mine operators also report coal production on Form 7000-2.
50.10 · ALL · final	Call MSHA within 15 minutes of knowing about a death, a life-threatening injury or entrapment, or another incident on MSHA's list (the rule says "accident").
50.20 · ALL · final	Report each incident (MSHA's term: accident), occupational injury, or occupational illness on Form 7000-1 within 10 working days.
Filing · GUIDANCE	Forms can be filed electronically through MSHA's website; MSHA's help desk supports e-filing.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Remove single-person dependency: two people trained and with access to file.
Engineer	Electronic filing with saved accounts and calendar reminders.
Equipment	A shared folder with every quarterly report and Form 7000-1 for 5 years.
Administrative	Calendar entries for Jan. 15, Apr. 15, July 15, and Oct. 15. A monthly check of injury reports against the 10-working-day deadline.
Small-shop fix	Put the four due dates on two people's calendars today, and confirm both can log in to file.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

04 · Quarterly employment and production reports (Form 7000-2)

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Form 7000-2 was filed within 15 days after each of the last four quarters.	☐	☐	☐	
2	Copies are kept at the mine office for 5 years.	☐	☐	☐	
3	Two people know how to file and have access.	☐	☐	☐	
4	Seasonal quarters with any work are reported.	☐	☐	☐	
5	Coal production is reported (coal mines).	☐	☐	☐	
6	Every reportable injury was filed on Form 7000-1 within 10 working days.	☐	☐	☐	
7	The 15-minute MSHA notification number is posted.	☐	☐	☐	
8	Supervisors know which incidents require immediate notification.	☐	☐	☐	
9	Employee hours match payroll records.	☐	☐	☐	
10	Contractor hours are not mixed with operator hours.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · QUARTERLY EMPLOYMENT AND PRODUCTION REPORTS
(FORM 7000-2)

Who owns it

Operator / mine manager	Makes sure reporting is assigned and backed up.
Office / admin lead	Files Form 7000-2 and keeps copies.
Safety lead	Files Form 7000-1 and checks deadlines.
Foremen	Report incidents and injuries the same shift.
Miners	Report every injury, even minor ones.

How to verify it is working in the field

- Pull the last four quarterly reports and check filing dates.
- Compare last year's injuries to filed Form 7000-1s.
- Ask the backup person to show you how they would file.

TOOLBOX TALK STARTER

If you got hurt today, who would report it, and by when?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

File any missing quarterly report now. Name a backup filer and put the due dates on the calendar. Then run the eight-step gap response at the front of this guide.

05 Electrical conductors

30 CFR 56.12004, 56.12016, 56.12017, 56.12028 [M/NM]

2,280

violations in 2025 (No. 5)

2,507

violations in 2024, also No. 5

Annual

grounding system continuity and resistance testing

THE PAIN POINT A portable cable to a screen plant has been run over by a loader so many times the outer jacket is split, and the inner insulation shows through. It still works, so it stays. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Electrical conductors was No. 5 in both years: 2,507 violations in 2024 and 2,280 in 2025 (2.69% of all). The standard requires conductors sized so normal heat does not damage insulation, and protection for conductors exposed to mechanical damage. Two of 2025's mining deaths were electrical incidents (MSHA classification, as reported by Pit & Quarry).

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Portable cables are run across haul roads without protection.
- Damaged cables are taped and returned to service.
- Cables are undersized for added loads.
- Strain relief and bushings are missing where cables enter boxes.
- Electrical inspections are informal or skipped.

REQUIREMENTS AND CONTROLS · ELECTRICAL CONDUCTORS

What the rules require, in plain words

56.12004 · M/NM · final	Conductors must be sized so normal operating heat does not damage insulation; conductors exposed to mechanical damage must be protected.
56.12016 · M/NM · final	De-energize and lock out electrically powered equipment before mechanical work; post signed warning notices.
56.12017 · M/NM · final	De-energize and lock out power circuits before work, unless hot-line tools are used.
56.12028 · M/NM · final	Test grounding system continuity and resistance after installation, repair, or modification, and annually; keep the latest record.
56.12032 · M/NM · final	Keep inspection and cover plates in place (see section 8).

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Hardwire or reroute power so cables do not cross haul roads.
Engineer	Cable bridges, trays, and overhead runs; proper strain relief and bushings at every entry.
Equipment	Correctly sized, mine-rated portable cable; spare cable stock so damaged lengths are replaced, not taped.
Administrative	Qualified electrician inspections on a schedule, annual ground testing, and a rule that damaged cable comes out of service.
Small-shop fix	Walk every portable cable this week. Replace or remove any with a split jacket, and put a cable crossing where loaders run over it.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

05 · Electrical conductors

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	No cable has a split jacket or exposed inner insulation.	☐	☐	☐	
2	Cables crossing roadways are protected or elevated.	☐	☐	☐	
3	Cables are sized for the load they carry.	☐	☐	☐	
4	Strain relief and bushings are in place at boxes and equipment.	☐	☐	☐	
5	Grounding systems were tested in the last 12 months, with records.	☐	☐	☐	
6	Lockout is used for mechanical and electrical work.	☐	☐	☐	
7	Only qualified persons do electrical work.	☐	☐	☐	
8	Damaged cables are removed from service, not taped.	☐	☐	☐	
9	Spare cable is on hand.	☐	☐	☐	
10	Electrical hazards are checked on workplace exams.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · ELECTRICAL CONDUCTORS

Who owns it

Operator / mine manager	Funds cable, crossings, and qualified electricians.
Electrician	Inspects, tests grounds, and repairs to standard.
Foreman	Removes damaged cable from service and enforces lockout.
Miners	Do not run over cables and report damage.
Safety lead	Audits electrical inspections and ground test records.

How to verify it is working in the field

- Walk every portable cable and mark damage.
- Find the last ground test record.
- Ask an electrician what they would replace first with an open budget.

TOOLBOX TALK STARTER

Which cable here would you not want to grab with wet gloves?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

De-energize and remove any damaged cable now. Name the owner and date for replacement and road crossings. Then run the eight-step gap response at the front of this guide.

06 Safety defects: examination, correction, and records

30 CFR 56.14100(a)–(d) [M/NM]

2,244

violations in 2025 (No. 6)

2,339

violations in 2024, also No. 6

Every shift

pre-operation inspection of self-propelled mobile equipment

THE PAIN POINT A haul truck's brake defect was written on the pre-op card on Monday. On Thursday it is still running, because the shop is short and the card went into a box nobody reads. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Safety defects not corrected in a timely manner was No. 6 in both years: 2,339 violations in 2024 and 2,244 in 2025 (2.65% of all). The standard covers any equipment, machinery, or tools. MSHA reports powered haulage caused 13 of 2025's 33 mining deaths, which makes defects on mobile equipment a fatal-risk issue, not just a citation (see the spotlight).

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Pre-op inspections become a signature without a walk-around.
- Defect reports do not reach maintenance or are not tracked.
- Production pressure keeps defective equipment running.
- There is no clear rule for when a defect means park it.
- Parts delays leave defects open for weeks.

REQUIREMENTS AND CONTROLS · SAFETY DEFECTS: EXAMINATION, CORRECTION, AND RECORDS

What the rules require, in plain words

56.14100(a) · M/NM · final	The operator of self-propelled mobile equipment inspects it before placing it in operation each shift.
56.14100(b) · M/NM · final	Correct defects on equipment, machinery, and tools that affect safety in a timely manner.
56.14100(c) · M/NM · final	When defects make operation hazardous, take the item out of service and park it in a posted area or tag it until corrected.
56.14100(d) · M/NM · final	Report and record safety defects on mobile equipment that are not corrected immediately, and keep the records until corrected.
56.23000–56.23004 · M/NM · final	The written surface mobile equipment safety program includes maintenance and repair procedures and schedules.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Retire equipment with chronic safety defects.
Engineer	Electronic pre-op checklists that route defects straight to maintenance and flag open items.
Equipment	Lockout tags and a posted out-of-service parking area.
Administrative	A clear park-it list (brakes, steering, lights, alarms, seat belts), daily defect review between operations and maintenance, and parts stocked for common failures.
Small-shop fix	Read every pre-op card from last week tomorrow morning with the shop lead. Assign each open defect a name and date.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

06 · Safety defects: examination, correction, and records

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Every self-propelled machine has a pre-op inspection each shift.	☐	☐	☐	
2	Pre-op inspections are a real walk-around, not just a signature.	☐	☐	☐	
3	Defects reported reach maintenance the same shift.	☐	☐	☐	
4	Open safety defects are tracked until closed.	☐	☐	☐	
5	Hazardous defects take equipment out of service, tagged or parked in a posted area.	☐	☐	☐	
6	Uncorrected mobile equipment defects are recorded and the records kept.	☐	☐	☐	
7	There is a written list of defects that mean park it.	☐	☐	☐	
8	Common safety parts are stocked.	☐	☐	☐	
9	Operators are not pressured to run with defects.	☐	☐	☐	
10	Defect trends are reviewed monthly.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any "No" that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · SAFETY DEFECTS: EXAMINATION, CORRECTION, AND RECORDS

Who owns it

Operator / mine manager	Backs parking equipment over making tons.
Maintenance lead	Reviews defects daily and closes them.
Foreman	Enforces pre-ops and parks equipment with hazardous defects.
Equipment operators	Do real pre-ops, report defects, and refuse unsafe equipment.
Safety lead	Audits defect records and trends.

How to verify it is working in the field

- Pull last week's pre-op cards. Count defects and how many are closed.
- Watch an operator do a pre-op.
- Find any equipment running with an open safety defect.

TOOLBOX TALK STARTER

What defect have you run with because the shop could not get to it?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Tag out and park any equipment with a hazardous defect now. Name the owner and date for every open defect. Then run the eight-step gap response at the front of this guide.

07 Mine ventilation plan

30 CFR 75.370(a)(1), 75.360, 75.362 [COAL]

1,693

violations in 2025 (No. 7)

1,956

violations in 2024, also No. 7

5 days

notice to the miners' representative
before submitting a plan or revision

THE PAIN POINT The approved plan calls for a specific curtain distance from the face and water sprays at a set pressure. On a busy shift, the curtain lags and two sprays are plugged. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Failing to develop and follow an approved ventilation plan was No. 7 in both years: 1,956 violations in 2024 and 1,693 in 2025 (2.00% of all). The plan must be designed to control methane and respirable dust. Most citations are for not following the plan as approved.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Miners and foremen do not know the plan's specific requirements.
- Curtains, sprays, and scrubbers are not maintained to plan parameters.
- Production advances faster than ventilation controls.
- Plan changes are not communicated to crews.
- Dust control exams are rushed or recorded without checking.

REQUIREMENTS AND CONTROLS · MINE VENTILATION PLAN

What the rules require, in plain words

75.370(a)(1) · COAL · final	Develop and follow a ventilation plan approved by the district manager, designed to control methane and respirable dust and suited to the mine's conditions.
75.370(a)(3) · COAL · final	Notify the representative of miners at least 5 days before submitting a ventilation plan or revision.
75.360 · COAL · final	A certified person does a preshift exam within 3 hours before each 8-hour interval when anyone is scheduled to work underground.
75.362(a)(1) · COAL · final	A certified person does an on-shift exam of each working section, including tests for methane and oxygen deficiency and air direction.
75.362(a)(2) · COAL · final	Examine and record respirable dust control parameters in the approved plan; correct deficiencies before production starts or resumes.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Plan production sequences around ventilation, not the other way around.
Engineer	Scrubbers, sprays, and curtain systems sized with margin.
Equipment	Calibrated anemometers and methane detectors; spare spray nozzles on every section.
Administrative	A one-page plan summary for each section with the key numbers, reviewed with crews at each plan change.
Small-shop fix	Make a laminated card for each section foreman with the plan's curtain distances, air quantities, and spray requirements.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

07 · Mine ventilation plan

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Each section foreman can state the plan's key ventilation requirements.	☐	☐	☐	
2	Curtain and tubing distances meet the plan.	☐	☐	☐	
3	Air quantities and velocities meet the plan at required locations.	☐	☐	☐	
4	Water sprays and scrubbers work at plan parameters.	☐	☐	☐	
5	Preshift exams are completed within 3 hours before each interval.	☐	☐	☐	
6	On-shift exams include methane, oxygen, and air direction checks.	☐	☐	☐	
7	Dust control parameters are examined and recorded.	☐	☐	☐	
8	Deficiencies are corrected before production.	☐	☐	☐	
9	Plan revisions are communicated to crews.	☐	☐	☐	
10	The miners' representative gets 5 days' notice of plan submissions.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any "No" that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · MINE VENTILATION PLAN

Who owns it

Operator / mine manager	Plans production to fit the ventilation plan.
Ventilation engineer	Maintains the plan and trains foremen on it.
Section foreman	Follows the plan every shift and stops production when controls fail.
Certified examiners	Do thorough exams and record honestly.
Miners	Maintain curtains and sprays and report problems.

How to verify it is working in the field

- Measure air at the last open crosscut and compare to the plan.
- Check spray pressure and nozzles on one continuous miner.
- Ask a foreman to state the plan requirements for their section.

TOOLBOX TALK STARTER**What part of our ventilation plan is hardest to follow on a busy shift?**

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Stop production where plan controls are not in place. Name the owner and date for fixing the control and retraining the crew. Then run the eight-step gap response at the front of this guide.

08

Inspection and cover plates

30 CFR 56.12032 [M/NM]

1,497

violations in 2025 (No. 8)

1,538

violations in 2024, also No. 8

1.77%

of all MSHA violations cited

THE PAIN POINT A junction box cover on a motor has been missing since a repair last month. Dust and water blow into the live terminals every day. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Inspection and cover plates missing from electrical equipment and junction boxes was No. 8 in both years: 1,538 violations in 2024 and 1,497 in 2025 (1.77% of all). It is a simple rule, and one of the easiest citations to prevent.

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Covers are removed for troubleshooting and not replaced.
- Screws and covers get lost.
- Covers are damaged and no spares are stocked.
- Inspections do not look at small boxes and motor terminals.
- Temporary wiring becomes permanent.

REQUIREMENTS AND CONTROLS · INSPECTION AND COVER PLATES

What the rules require, in plain words

56.12032 · M/NM · final	Keep inspection and cover plates on electrical equipment and junction boxes in place at all times, except during testing or repairs.
56.12016 · M/NM · final	Lock out electrically powered equipment before mechanical work.
56.12017 · M/NM · final	Lock out power circuits before work unless hot-line tools are used.
56.12004 · M/NM · final	Protect conductors from mechanical damage.
56.18002 · M/NM · final	Workplace exams look for conditions that affect safety, including open electrical boxes.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Consolidate small junction boxes where possible.
Engineer	Hinged covers and captive screws that cannot be lost.
Equipment	Spare covers and screws stocked in the electrical shop.
Administrative	Covers back on before equipment is re-energized. Cover checks on every workplace exam.
Small-shop fix	Walk the plant with a bag of screws and a few spare covers. Close every open box in one sweep.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

08 · Inspection and cover plates

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Every junction box has its cover in place.	☐	☐	☐	
2	Motor terminal boxes are covered.	☐	☐	☐	
3	Control panels are closed and latched.	☐	☐	☐	
4	Covers are secured with all screws or latches.	☐	☐	☐	
5	Damaged covers are replaced.	☐	☐	☐	
6	Spare covers and screws are stocked.	☐	☐	☐	
7	Covers are replaced before re-energizing.	☐	☐	☐	
8	Temporary wiring is removed or made permanent to standard.	☐	☐	☐	
9	Open boxes are checked on workplace exams.	☐	☐	☐	
10	Only qualified persons open electrical equipment.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · INSPECTION AND COVER PLATES

Who owns it

Operator / mine manager	Funds spares and hinged covers.
Electrician	Replaces covers after every job.
Foreman	Checks covers on workplace exams.
Miners	Report open or damaged boxes.
Safety lead	Audits electrical boxes monthly.

How to verify it is working in the field

- Count every open or missing cover in the plant.
- Check the electrical shop for spare covers.
- Ask an electrician why covers go missing here.

TOOLBOX TALK STARTER**Where did you last see an electrical box without a cover?**

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

De-energize if needed and replace any missing cover now. Name the owner and date for spare stock. Then run the eight-step gap response at the front of this guide.

09 Protection from falls of roof, face, and ribs

30 CFR 75.202(a)–(b), 75.220 [COAL]

1,429

violations in 2025 (No. 9), new to the top 10

1,493

roof control plan violations (75.220(a)(1)) in 2024, then No. 10

4

2025 deaths from fall of roof or back and fall of face, rib, side, or highwall (2 each)

THE PAIN POINT A rib along a travelway is sloughing between bolts. It has been like that for a week, and miners walk past it every shift. (illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Protection from falls of roof, face, and ribs in underground coal mines entered the top 10 at No. 9 in 2025 with 1,429 violations (1.69% of all). In 2024, the roof control plan standard (75.220(a)(1)) was No. 10 with 1,493. Pit & Quarry, reporting MSHA classifications, counted two 2025 deaths from fall of roof or back and two from fall of face, rib, side, or highwall (the face, rib, side, or highwall category also covers surface highwalls).

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Rib conditions change and support is not added.
- Miners travel or work under unsupported roof to save time.
- Roof and rib exams are rushed.
- The roof control plan is not followed for bolt spacing or rib bolting.
- Geologic changes are not reported or acted on.

REQUIREMENTS AND CONTROLS · PROTECTION FROM FALLS OF ROOF, FACE, AND RIBS

What the rules require, in plain words

75.202(a) · COAL · final	Support or otherwise control roof, face, and ribs where people work or travel, to protect them from falls and bursts.
75.202(b) · COAL · final	No one works or travels under unsupported roof except as the subpart allows.
75.220(a)(1) · COAL · final	Develop and follow a roof control plan approved by the district manager, suited to the geology and mining system, with additional measures for unusual hazards.
75.360 / 75.362 · COAL · final	Preshift and on-shift exams check for hazardous conditions, including roof and rib.
Part 48 · ALL · final	Annual refresher training includes review of roof or ground control plans.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Mine plans that avoid known bad ground where possible.
Engineer	Rib bolting, mesh, and supplemental support where conditions require.
Equipment	Scaling bars and supplemental support materials staged on every section.
Administrative	Roof and rib checks at every exam, a clear no-go rule for unsupported roof, and immediate reporting of changing conditions.
Small-shop fix	Mark every travelway rib with visible sloughing this week and assign supplemental support with a date.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

09 · Protection from falls of roof, face, and ribs

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Roof and ribs in work and travel areas are supported or controlled.	☐	☐	☐	
2	No one is under unsupported roof.	☐	☐	☐	
3	Bolting follows the approved roof control plan.	☐	☐	☐	
4	Rib support is added where ribs are sloughing.	☐	☐	☐	
5	Supplemental support materials are on each section.	☐	☐	☐	
6	Exams record roof and rib conditions and fixes.	☐	☐	☐	
7	Changing geologic conditions are reported and acted on.	☐	☐	☐	
8	Miners know the roof control plan for their section.	☐	☐	☐	
9	Travelways are checked for rib hazards.	☐	☐	☐	
10	Roof falls and rib rolls, even without injury, are investigated.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any “No” that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · PROTECTION FROM FALLS OF ROOF, FACE, AND RIBS

Who owns it

Operator / mine manager	Funds supplemental support and plan improvements.
Roof control engineer	Maintains the plan and adapts to geology.
Section foreman	Enforces plan compliance and the no-go rule.
Miners / roof bolters	Bolt to plan, report conditions, and refuse unsupported roof.
Safety lead	Tracks falls of ground and rib incidents.

How to verify it is working in the field

- Walk a travelway and mark rib and roof conditions.
- Measure bolt spacing in one area against the plan.
- Ask a bolter what would make them add extra support.

TOOLBOX TALK STARTER

Where have you seen the rib or roof changing, and what did we do about it?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Keep everyone out from under unsupported roof and away from bad ribs. Support it before work resumes. Name the owner and date. Then run the eight-step gap response at the front of this guide.

10 Horns and backup alarms

30 CFR 56.14132(a)–(b), 56.9100, 56.23000–56.23004 [M/NM]

1,319

violations in 2025 (No. 10)

1,527

violations in 2024 (No. 9)

13 of 33

2025 mining deaths from powered haulage (39%)

THE PAIN POINT A loader's backup alarm stopped working last week. The operator says he looks behind him. A miner walking to the scale house does not hear it coming.

(illustrative)

What the data says

Source: MSHA Top 10, CY2025; 2024 list for comparison. Horns and backup alarms on self-propelled mobile equipment was No. 10 in 2025 with 1,319 violations (1.56% of all), down from No. 9 in 2024 (1,527). It is a direct control for powered haulage, which MSHA reports caused 13 of the 33 mining deaths in 2025 (39%) and 426 nonfatal injuries (preliminary).

Why it really happens

Not worker carelessness. These are the system and leadership conditions that make this predictable.

- Alarms fail and the equipment keeps running.
- Alarms are not loud enough to be heard over plant noise.
- Horns are disconnected because operators find them annoying.
- Pre-ops do not include a horn and alarm test.
- Pedestrians and light vehicles mix with haul traffic.

REQUIREMENTS AND CONTROLS · HORNS AND BACKUP ALARMS

What the rules require, in plain words

56.14132(a) · M/NM · final	Keep manually operated horns and other audible warning devices on self-propelled mobile equipment in working condition.
56.14132(b)(1) · M/NM · final	When the operator's rear view is obstructed, use an automatic reverse alarm, a wheel-mounted bell alarm, a discriminating backup alarm covering the blind area, or an observer to signal.
56.14132(b)(2)–(3) · M/NM · final	Alarms must be audible above surrounding noise; an automatic reverse strobe may be used at night instead of an audible alarm.
56.9100 · M/NM · final	Set and follow traffic rules for speed, right-of-way, direction, and headlights; post signs or signals at hazardous locations.
56.23002–56.23003 · M/NM · final	Have a written surface mobile equipment safety program that identifies and reduces hazards, evaluates safety technology, and trains miners.

Paraphrased. Federal regulatory text checked on eCFR (current to Oct. 8, 2026) on Oct. 13, 2026. Mines are federally inspected; some states also run their own mine safety programs. Tags: M/NM = surface metal and nonmetal mines (30 CFR Part 56; Part 57 has matching rules for underground metal and nonmetal mines). COAL = underground coal mines (30 CFR Part 75). ALL = all mines (the Federal Mine Safety and Health Act of 1977 and 30 CFR Parts 46, 48, and 50). GUIDANCE = advisory; it is not a rule and cannot be cited by itself.

Controls that work, in hierarchy order

Eliminate	Separate pedestrians and light vehicles from haul routes with berms, walkways, and dedicated parking.
Engineer	Proximity detection, cameras, and collision warning systems on large equipment.
Equipment	Broadband (white noise) or discriminating backup alarms that can be heard over plant noise, and buggy whips with flags and lights on light vehicles.
Administrative	Horn and alarm tests at every pre-op, park-it if they fail, and traffic rules posted and enforced.
Small-shop fix	Test every horn and backup alarm in the fleet tomorrow morning. Park anything that fails until it is fixed.

Leaders own the conditions. If the guard, the cleanup, or the alarm only gets fixed when an inspector pulls in, it is not a control. Build it so the safe condition is the normal condition, every shift.

30-MINUTE SELF-AUDIT · PRINT AND TAKE TO THE FLOOR

10 · Horns and backup alarms

SITE	AREA / JOB / CREW	AUDITOR	DATE
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#	CHECK WHAT YOU CAN SEE OR PUT YOUR HAND ON	YES	NO	N/A	NOTES
1	Every horn on mobile equipment works.	☐	☐	☐	
2	Every machine with an obstructed rear view has a working backup alarm or an observer.	☐	☐	☐	
3	Alarms can be heard over surrounding noise.	☐	☐	☐	
4	Horn and alarm tests are part of every pre-op.	☐	☐	☐	
5	Equipment with failed alarms is parked or uses an observer.	☐	☐	☐	
6	Traffic rules for speed and right-of-way are posted and followed.	☐	☐	☐	
7	Pedestrian routes are separated from haul traffic.	☐	☐	☐	
8	Light vehicles near haul trucks have flags or lights visible to operators.	☐	☐	☐	
9	A written surface mobile equipment safety program is in place and updated annually.	☐	☐	☐	
10	New safety technology has been evaluated in the last year.	☐	☐	☐	

#	GAP FOUND	OWNER (ONE NAME)	DUE	VERIFIED

Rule: any "No" that is a live exposure gets stopped or contained before you leave the area. Stop is a right on this site. Restart is a decision. A named person makes it after the control is in place.

PREVENTION PLAYBOOK · HORNS AND BACKUP ALARMS

Who owns it

Operator / mine manager	Funds alarms, cameras, and traffic separation.
Maintenance lead	Repairs alarms and horns as a priority.
Foreman	Enforces pre-op tests and traffic rules.
Equipment operators	Test horns and alarms and report failures.
Safety lead	Owens the written mobile equipment program and traffic plan.

How to verify it is working in the field

- Test every horn and backup alarm in the fleet.
- Stand where pedestrians walk and listen for alarms over the plant noise.
- Read the written surface mobile equipment program and check its last update.

TOOLBOX TALK STARTER

Where on this site do people on foot and mobile equipment come closest together?

Ask it at the job, not in the break room. Then listen. Write down what you hear and give it an owner before you leave.

IF YOU FIND A GAP

Park any equipment with a dead horn or backup alarm, or assign an observer, now. Name the owner and date for the repair and traffic separation. Then run the eight-step gap response at the front of this guide.

CHECK OUR WORK

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Sources retrieved and checked October 13, 2026. This guide is a practical summary for planning and self-audit. It is not legal advice and does not replace the text of the Mine Act or MSHA rules, or your approved ventilation, roof control, or training plans. Regulatory text is paraphrased. When this guide and a regulation disagree, the regulation controls. Citation counts are national and will not match any one mine's experience; 2025 fatality figures are preliminary.

FREE FIELD TOOL · NEXT STEP

ONE MACHINE. SEVEN MINUTES.

The free 7-Minute Safety Walk is a one-page field tool. Pick one conveyor, one crusher, or one piece of mobile equipment running right now. Look at the guards, the spillage, the cables, and the alarms. Then ask the miner who runs it what they would fix first. It is the fastest way to find out whether the fixes in this guide are working at your mine today.

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