

OSHA New Contractor Safety Starter Kit

FORBES SAFETY SOLUTIONS

Complete bundle — 25 templates included

Editable Word/Excel/PowerPoint versions available at forbessafety.com/downloads/

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DAILY CONSTRUCTION SITE SAFETY INSPECTION

Forbes Safety Solutions

Project Name:			
Date:		Weather:	
Inspector:		Site Address:	

#	Inspection Item	Status	Comments
HOUSEKEEPING			
1	Walkways and access routes clear of obstructions		
2	Materials stored properly and securely		
3	Waste disposal containers available and not overflowing		
4	Trip hazards identified and addressed		
5	Adequate lighting in all work areas		
PPE COMPLIANCE			
6	Hard hats worn in all required areas		
7	Safety glasses/goggles in use where required		
8	High-visibility vests worn as required		
9	Safety boots/steel-toed footwear worn		
10	Gloves appropriate for task being worn		
FALL PROTECTION			
11	Guardrails intact and properly installed		
12	Floor openings covered and secured		
13	Harnesses inspected and properly worn		
14	Anchorage points adequate and accessible		
15	Ladders secured and in good condition		
ELECTRICAL SAFETY			
16	GFCIs in use on all temporary circuits		
17	Extension cords undamaged and rated properly		
18	Temporary power panels secured		
19	Panel access clear of obstructions (36" min.)		
EXCAVATION			
20	Shoring/sloping/shielding in place per plan		
21	Access ladders within 25 ft. of workers		
22	Spoil pile set back minimum 2 ft. from edge		

23	Utility markings visible and intact		
FIRE PREVENTION			
24	Fire extinguishers accessible and charged		
25	Hot work permits posted and current		
26	Flammable materials stored properly		
EQUIPMENT			
27	Daily equipment inspections completed		
28	Operators have valid certifications		
29	Seatbelts in use on all applicable equipment		
30	Backup alarms functional on all equipment		

INSPECTION SUMMARY	
Total Items Inspected	0
Items Compliant (Yes)	0
Items Needing Correction (No)	0
Not Applicable (N/A)	0
Compliance Rate	0.0%
Overall Site Rating	

CORRECTIVE ACTIONS REQUIRED				
#	Description	Priority	Assigned To	Status
1				
2				
3				
4				
5				
6				
7				
8				

SIGNATURES

Inspector
Signature

Date:

Superintendent
Signature

Date:

INSTRUCTIONS — Daily Construction Site Safety Inspection

Forbes Safety Solutions

PURPOSE

This form provides a standardized daily inspection checklist for construction sites.
It helps ensure compliance with OSHA regulations and company safety policies.
Complete this form at the start of each work day before work begins.

HOW TO USE

1. Fill in all header information (Project Name, Date, Inspector, Weather, Site Address).
2. Walk the entire site and inspect each item in every category.
3. Select 'Yes' if the item is compliant, 'No' if it is not, or 'N/A' if not applicable.
4. Add comments for any item marked 'No' — describe the specific issue observed.
5. The Summary section will automatically calculate compliance metrics.
6. Document all corrective actions needed in the Corrective Actions section.
7. Both the Inspector and Site Superintendent must sign and date the form.

RATING CRITERIA

Satisfactory — 90%+ compliance rate with no high-priority corrective actions needed.
Needs Improvement — 75-89% compliance rate or minor corrective actions identified.
Unsatisfactory — Below 75% compliance rate or significant safety hazards found.
Stop Work — Imminent danger identified; all work must cease until hazard is corrected.

CORRECTIVE ACTION PRIORITIES

High — Imminent danger or serious OSHA violation. Must be corrected immediately.
Medium — Potential hazard that should be corrected within 24 hours.
Low — Minor issue or best-practice improvement. Correct within one week.

RECORD KEEPING

Completed forms must be retained for the duration of the project plus 3 years.
Store copies in the project safety file and provide copies to the site superintendent.

Forms with 'Unsatisfactory' or 'Stop Work' ratings must be escalated to the Safety Director.

EQUIPMENT PRE-USE INSPECTION LOG

Forbes Safety Solutions

EQUIPMENT INFORMATION

Equipment Type:		Equipment ID:	
Date:		Operator Name:	
Hours/Mileage:		Project/Site:	

PRE-USE INSPECTION CHECKLIST

#	Inspection Item	Status	Notes / Details
FLUID LEVELS			
1	Engine oil level within operating range		
2	Hydraulic fluid level within operating range		
3	Coolant level within operating range		
4	Fuel level adequate for planned work		
TIRES / TRACKS / UNDERCARRIAGE			
5	Tires/tracks in acceptable condition (no cuts, bulges, or excessive wear)		
LIGHTS & SIGNALS			
6	All lights operational (head, tail, work, warning)		
7	Turn signals and hazard lights functional		
SAFETY DEVICES			
8	Horn functional and audible		
9	Backup alarm operational		
10	Seatbelt in good condition and functional		
11	Fire extinguisher present, accessible, and charged		
12	Mirrors clean, adjusted, and undamaged		
STRUCTURAL / PROTECTIVE			
13	ROPS/FOPS intact and properly secured		
14	Boom/arm/bucket condition acceptable (if applicable)		
15	Outriggers functional and pads available (if applicable)		
16	Load chart visible and legible (if applicable)		

CONTROLS & OPERATION			
17	Brakes — service and parking brakes functional		
18	Steering responsive and operating normally		
19	All controls operating smoothly		
20	Gauges and instruments functioning properly		
GENERAL CONDITION			
21	No visible leaks (oil, hydraulic, coolant, fuel)		
22	Guards and covers in place and secure		
23	Cab/operator area clean and free of loose items		

INSPECTION SUMMARY	
Items Inspected	0
Items Passed	0
Items Failed	0
Not Applicable	0

OVERALL EQUIPMENT STATUS	
Equipment Determination:	

DEFICIENCIES FOUND / CORRECTIVE ACTIONS		
#	Deficiency Description	Action Taken / Required
1		
2		
3		
4		
5		
6		

OPERATOR CERTIFICATION & SIGNATURES
<i>I certify that I have inspected this equipment and it is in the condition indicated above. I am trained and authorized to operate this equipment.</i>

or
Signatu

Date:

or
Signatu

Date:

FE-014									
FE-015									
FE-016									
FE-017									
FE-018									
FE-019									
FE-020									

Notes / Deficiencies:

CON LOG

Year: _____

Review
Review Date:

_____ Date: _____

[illegible]

FIRE EXTINGUISHER

Monthly Visual Inspection Che

Use this checklist as a reference when performing monthly fire exting
Pass (P) or Fail (F) on the Monthly Inspection Log.

#	Inspection Item
1	Accessible & Visible
2	Pressure Gauge
3	Safety Pin & Tamper Seal
4	Physical Condition
5	Inspection Tag
6	Hose & Nozzle
7	Mounting & Height

ADDITIONAL REQUIREMENTS

- Annual professional inspection required by a certified fire pro
- 6-year maintenance: Internal examination for stored-pressure
- 12-year hydrostatic test required for applicable extinguisher t

- Immediately remove from service and replace any extinguisher.
- Document all deficiencies and corrective actions taken.
- Maintain records for a minimum of 1 year (check local requirements).

INSPECTION CRITERIA

Checklist | 29 CFR 1910.157 / NFPA 10

Extinguisher inspections. Each item must be verified for every extinguisher. Mark

What to Check
Extinguisher is not blocked by storage, equipment, or materials. Clearly visible or location is marked with signage. Travel distance requirements met per NFPA 10.
Gauge needle is in the green/operable range. If gauge is missing, damaged, or reads outside the operable range, mark as Fail. Note: CO2 extinguishers do not have a pressure gauge — weigh instead.
Pull pin is in place and not bent. Tamper seal/indicator is intact and unbroken. If seal is broken or pin is missing, the extinguisher may have been used or tampered with.
No visible damage, dents, corrosion, or leakage on the cylinder. Check the bottom for corrosion. No chemical residue around the nozzle. Nameplate and operating instructions are legible.
Current inspection tag is attached. Previous monthly inspections are documented on the tag. Tag shows last professional service/annual inspection date. Replace tag if full or illegible.
Hose is not cracked, cut, or blocked. Nozzle is clear of debris and obstructions. Hose connections are tight and not corroded. For wheeled units, check the hose length and condition.
Extinguisher is properly mounted in bracket, cabinet, or on wall hook. Mounting height: top handle no more than 5 ft (60 in.) from floor for units ≤40 lbs; no more than 3.5 ft (42 in.) for heavier units. Cabinet door opens freely if applicable.

tection specialist (NFPA 10, Chapter 7).

≥ extinguishers every 6 years.

ypes.

er that fails inspection.

ments for longer retention).

HARNESS & LANYARD INSPECTION LOG

Company Name _____

Inspector Nam

[illegible]

[illegible]

Webbing Condition

Stitching Condition

D-Rings / Hardware

Buckles / Grommets

Labels Legible

Lanyard Condition

SRL (Self-Retracting Lifeline)

Shock Absorber Pack

IMPORTANT REMINDERS:



ARNESS & LANYARD INSPECTION GUIDE

Inspect for Each Component — Per OSHA & Manufacturer Guidelines

• Look for cuts, frays, abrasions, or pulled stitches
• Check for chemical damage (discoloration, stiffness, softening)
• Inspect for UV degradation (fading, chalky texture)
• Check for heat/burn damage (hard, shiny spots)
• Verify no knotting or unauthorized modifications

• All stitching intact with no broken, pulled, or cut threads
• Check load-bearing stitch patterns at connection points
• Look for stitching that has pulled through webbing
• Verify contrasting-color thread visible (indicates load indicators)

• Check for cracks, distortion, or sharp edges
• Verify D-ring pivots freely (not seized or corroded)
• Inspect for excessive wear or pitting
• Back D-ring, front D-ring, and side D-rings if applicable
• Check that all rivets and grommets are secure

• Tongue buckles: check for distortion, loose tongue, proper engagement
• Quick-connect buckles: verify positive locking and release function
• Check for cracks, corrosion, or excessive wear
• Ensure friction buckles hold webbing securely
• Grommets not pulled loose or distorted

• Manufacturer name and address visible
• Date of manufacture readable
• Model/part number legible

- ANSI/OSHA compliance markings present
- Weight capacity rating visible
- If labels missing/unreadable — REMOVE FROM SERVICE

- Inspect full length for cuts, abrasion, kinks, or knots
- Check snap hooks for gate operation, lock function, and corrosion
- Verify snap hook gate closes fully and locks automatically
- Check for any evidence of deployment (shock absorber activation)
- Web lanyards: check stitching and webbing per above
- Wire rope lanyards: check for broken wires, kinks, corrosion

- Check housing for cracks, dents, or damage
- Verify line retracts smoothly under slight tension
- Test locking mechanism by sharp pull
- Inspect cable/webbing for damage at exit point
- Check hook/carabiner for proper gate function
- Verify fall indicator has not been deployed

- Check outer cover/pack for damage, tears, or openings
- Verify deployment indicators have NOT been activated
- Any sign of deployment = IMMEDIATE removal from service
- Check that pack is properly attached to lanyard
- Look for elongation or stretching of pack

5

Inspect ALL fall protection equipment BEFORE EACH USE per 29 CFR 1926.502(d).

Equipment involved in a fall arrest event MUST be immediately removed from service.

Equipment showing any defect MUST be tagged 'OUT OF SERVICE' and removed immediately.

Only the manufacturer or a qualified person may repair fall protection equipment.

Never use equipment beyond manufacturer's recommended service life.

Maintain inspection records for the lifetime of each piece of equipment.

Competent person must perform inspections — training documentation required.

LADDER INSPECTION LOG | 29 CFR 1926.1053

Date: _____

Inspection Frequency:

[illegible]

FORBES SAFETY SOLUTIONS

LADDER INSPECTION GUIDE | 29 CFR 1926.1053

Component	What to Inspect
Rails (Side Rails)	Check both side rails for cracks, bends, dents, or corrosion. Verify rails are straight and free of sharp edges. Inspect for heat damage or chemical exposure damage.
Rungs / Steps	Test each rung for tightness — twist and push. Check for bends, cracks, grease, or slippery surfaces. Verify anti-slip material is intact. Check rung spacing is uniform.
Spreaders / Locks (Stepladders)	Open and close spreader arms. Verify locking mechanism engages fully. Check spreader braces and rivets for damage.
Feet / Shoes (Safety Feet)	Inspect rubber or pivoting feet for wear, cracks, or missing pads. Verify feet swivel freely and grip surfaces. Check for debris buildup.
Labels / Markings	Verify duty rating label is legible. Check for ANSI/OSHA compliance stickers. Confirm weight capacity, type rating, and warning labels are readable.
Rope & Pulley (Extension Ladders)	Inspect rope for fraying, cuts, or UV damage. Test pulley for smooth operation. Check rope attachment points and knots. Verify locks engage at each rung.
Hardware (Rivets, Bolts, Nuts)	Check all rivets for looseness or shearing. Inspect bolts and nuts for tightness. Look for missing hardware.
Overall Structure	Set ladder on flat surface — check for wobble or twist. Open fully and verify stability. Check for signs of overloading (permanent deformation).

IMPORTANT REMINDERS

- Ladders must be inspected before each use by the user AND periodically by a competent person.
- Defective ladders must be tagged "DO NOT USE" and removed from service immediately.
- Never attempt to repair a damaged ladder — remove from service and replace.
- Portable ladders must support at least 4x the maximum intended load (OSHA requirement).
- Extension ladders must extend 3 feet above the landing surface.
- Maintain 3-point contact at all times when climbing.
- Set extension ladders at a 4:1 ratio (1 foot out for every 4 feet of height).
- Metal ladders must NOT be used near exposed electrical conductors.

Reference: 29 CFR 1926.1053 | Forbes Safety Solutions | General



Failure Criteria (Remove from Service)

Cracked, bent, or split rails; excessive corrosion or pitting; broken welds; evidence of heat damage; fiberglass rails showing exposed glass fibers

Loose, bent, broken, or missing rungs; damaged anti-slip surface; excessive grease/oil that cannot be cleaned; rung-to-rail connection compromised

Spreader does not lock fully open; broken or bent spreader arms; missing or damaged rivets; spreader allows ladder to fold during use

Missing, worn smooth, cracked, or hardened foot pads; feet do not pivot or grip; broken foot bracket

Duty rating label missing or illegible; safety warning labels destroyed; unable to determine ladder's weight capacity or type classification

Frayed, cut, or rotted rope; seized or broken pulley; rope attachment failure; rung locks do not engage or hold under load

Loose, missing, or sheared rivets; missing bolts or nuts; hardware corroded beyond function

Ladder wobbles, twists, or leans; permanent bowing or warping; evidence of repair with unauthorized methods (tape, wire, etc.)



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JOB HAZARD ANALYSIS

Concrete Placement & Finishing Operations

Applicable Standards: 29 CFR 1926 Subpart Q (1926.700–1926.706) — Concrete & Masonry; 29 CFR 1926.1153 — Respirable Crystalline Silica; ACI 347 — Formwork

Project Name: _____	Date: _____
Location: _____	Supervisor: _____
Crew Members: _____	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
1	Inspect formwork, shoring, and bracing for structural adequacy	Formwork collapse under concrete weight; shoring failure; workers struck by falling forms	Competent person inspects all formwork per ACI 347 and 1926.703(a). Verify shoring designed by qualified engineer for anticipated loads. Check bracing connections, wedges, and tie spacing. No worker under forms being raised/moved.	
2	Place and tie reinforcing steel (rebar) and embed items	Impalement on exposed rebar ends; cuts/lacerations from wire ties; manual handling strain; falls from elevated rebar mats	Install rebar caps (mushroom type) on all exposed vertical rebar per 1926.701(b). Cut-resistant gloves for tie wire work. Two-person carry for rebar >20 ft. Planking over rebar mats for worker access. Rebar impalement protection required at all heights.	
3	Set up and position concrete pump truck — outriggers, boom reach, and exclusion zone	Pump truck tip-over; boom contact with overhead power lines; struck-by from boom swing; outrigger bearing failure	Level truck on firm ground. Fully extend outriggers with timber cribbing pads. Maintain min 20-ft clearance from power lines per 1926.1408. Establish swing radius exclusion zone. Certified pump operator only. Pre-pour safety briefing with all crew.	
4	Receive and place concrete from ready-mix trucks	Struck-by from chute swing; contact with wet concrete (alkaline burns pH 12+); silica dust from dry areas; slip hazards	Spotter guides trucks — wheel chocks on grade. Long sleeves, waterproof gloves, rubber boots, and splash-proof goggles for all workers contacting concrete. Eye wash station on-site. Wash skin immediately upon contact. No kneeling in wet concrete.	
5	Consolidate concrete using internal vibrators	Hand-arm vibration syndrome (HAVS); electrical shock from vibrator in wet conditions; noise exposure >85 dBA	GFCI protection on all electrical vibrators. Limit continuous vibrator use to 15-min intervals. Anti-vibration gloves. Hearing protection required (ear plugs + muffs near pump). Rotate vibrator operators to limit exposure.	
6	Screed, bull float, and finish concrete surface	Ergonomic strain (bending/kneeling for extended periods); silica exposure during power trowel operations; slips on wet surface	Knee boards for finishing. Rotate finishers every 30 min. Wet methods during cutting/grinding per 1926.1153 Table 1. Non-slip rubber boots. Power trowel operators trained — kill switch functional. Dust mask or respirator for dry finishing.	
7	Apply curing compound or wet cure methods	Chemical inhalation from curing compounds (VOC exposure); skin irritation; slip hazard on treated surfaces	Review SDS for curing compound. Apply with low-pressure sprayer to minimize aerosolization. Half-face respirator with OV cartridge in enclosed areas. Chemical-resistant gloves. Barricade cured areas to prevent foot traffic until set.	
8	Strip forms and remove shoring per engineered sequence	Premature form removal (structural collapse); falling forms/shores; pinch points between forms and structure; nail punctures	Strip only after concrete reaches specified strength (cylinder break tests or maturity method). Follow engineer's reshoring sequence. Two workers minimum for panel	

⚠ This JHA must be reviewed and signed by all crew members before work begins. Conditions on the jobsite may change — reassess hazards throughout the shift and update this JHA as necessary.

REVIEW & APPROVAL

Reviewed By (Print Name)

Signature

Date _____

JOB HAZARD ANALYSIS

Electrical Rough-In — Commercial & Residential

Applicable Standards: 29 CFR 1926 Subpart K (1926.400–1926.449) — Electrical; NFPA 70E — Electrical Safety in the Workplace; 29 CFR 1926.405 — Wiring Methods; NEC Article 210–230

Project Name: _____	Date: _____
Location: _____	Supervisor: _____
Crew Members: _____	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
1	Review electrical drawings and conduct panel board layout / circuit identification	Errors from outdated drawings leading to incorrect installation; conflict with other trades; energized existing circuits in remodel work	Verify drawings are latest revision (RFI log current). Coordinate with GC and other trades on routing conflicts. Use non-contact voltage tester on ALL existing wiring before handling. Lock-out/tag-out (LOTO) per 1926.417 on any energized panel.	
2	Install electrical boxes (junction, device, and panel enclosures)	Struck-by from overhead work; cuts from sheet metal box edges; falls from ladders or scaffolds; dust/debris in eyes	Wear safety glasses and cut-resistant gloves. Inspect ladder before each use — three-point contact. Secure boxes per NEC mounting requirements. Hard hat in multi-trade work areas. Deburr box knockouts before pulling wire.	
3	Run conduit (EMT, rigid, or PVC) and support per NEC spacing requirements	Musculoskeletal injury from overhead conduit installation; struck-by from falling conduit; cuts from conduit reaming; silica dust from concrete penetrations	Use mechanical benders — no improvised bending methods. Two-person lift for runs >10 ft. Support per NEC 358.30 (EMT) intervals. Ream all cut ends to prevent wire insulation damage. Core drill with dust collection or wet method for concrete penetrations.	
4	Pull conductors through conduit and cable tray systems	Electrical shock from contact with existing energized conductors; hand/finger pinch or crush injuries at pull points; eye injury from wire snap-back	Confirm circuits de-energized — LOTO verified with voltage tester at point of work. Wear leather gloves at pull points. Safety glasses mandatory. Communication between puller and feeder (radios for long runs). Wire pulling lubricant to reduce tension.	
5	Make conductor terminations and splices in junction boxes	Electrocution from energized circuits; arc flash from improper connections; cuts from wire strippers; confined space in electrical rooms	Zero-energy verification at each termination point. Use insulated tools rated for voltage class. Proper wire nut or compression connector sizing — no electrical tape as primary splice method. Follow NEC box fill calculations (314.16).	
6	Install grounding electrode system and equipment bonding conductors	Electrocution during ground rod driving; struck-by from hammer/driver; inadequate grounding creating future shock hazard	De-energize all circuits during grounding work. Use ground rod driver — never strike rod directly with hammer. Verify ground resistance with fall-of-potential test (<25 ohms per NEC 250.53). Torque all bonding connections to manufacturer specs.	
7	Install temporary power distribution and GFCI protection	Electrical shock from improper temporary wiring; fire from overloaded circuits; tripping hazards from cords	All temporary power circuits protected by GFCI per 1926.405(a)(2)(ii). Assured equipment grounding conductor program as alternative. No daisy-chaining power strips. Protect cords from damage — elevate or use cord covers across walkways.	
8	Conduct insulation resistance testing (megger test) on completed circuits	Electric shock from test voltage (500V–1000V DC); damage to sensitive equipment; miswired circuits	Verify all circuits isolated before testing. Post warning signs at both ends during megger test. Only qualified electricians perform testing. Discharge conductors after testing.	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
			Document readings per circuit.	
9	Energize panels and perform circuit verification / labeling	Arc flash during initial energization; electrocution; burns from fault current; incorrect circuit identification	Energize with panel door closed — stand to the side (arc flash protection position). Wear appropriate PPE per NFPA 70E arc flash risk assessment (Category 2 minimum for 208V panels). Verify each circuit with receptacle tester. Label all breakers accurately.	

 **This JHA must be reviewed and signed by all crew members before work begins.** Conditions on the jobsite may change — reassess hazards throughout the shift and update this JHA as necessary.

REVIEW & APPROVAL

Reviewed By (Print Name)

Signature

Date

JOB HAZARD ANALYSIS

Excavation & Trenching Operations

Applicable Standards: 29 CFR 1926 Subpart P (1926.650–1926.652); OSHA Excavation Standard; 29 CFR 1926.651(c) — Utility Locates

Project Name: _____	Date: _____
Location: _____	Supervisor: _____
Crew Members: _____	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
1	Conduct pre-excavation site survey and review utility locate markings (811 call confirmation)	Utility strikes (gas, electric, water, fiber); unmarked underground hazards	Verify 811 utility locate completed (min. 48 hrs prior). Review as-built drawings. Hand-dig within 18" of marked utilities. Use ground-penetrating radar for unknown areas.	
2	Establish excavation perimeter barricades and traffic control	Struck-by from vehicles or mobile equipment; unauthorized entry into excavation zone	Install high-visibility barricades and warning signs per MUTCD standards. Assign flaggers for active roadways. Maintain 6-ft setback for spoil piles from trench edge.	
3	Perform soil classification by competent person (visual and manual tests)	Incorrect soil classification leading to inadequate protective systems; cave-in risk	Competent person conducts thumb penetration, plasticity, and dry strength tests per 29 CFR 1926.652 Appendix A. Document soil type (A, B, or C) in writing. Reassess after rain events.	
4	Excavate trench using hydraulic excavator	Equipment tip-over; struck-by from bucket swing; overhead power line contact	Ensure operator is trained/certified. Maintain 10-ft clearance from power lines (20-ft for >350kV). No workers in swing radius. Ground guide with radio communication required. Spotters for blind spots.	
5	Install protective system — shoring, shielding, or sloping per soil classification	Cave-in / trench collapse; engulfment; crushing injuries	Install system before any worker enters trench >5 ft deep (OSHA 1926.652). Use tabulated data for shoring specs. Hydraulic shores installed from top down. Trench boxes rated for soil type and depth.	
6	Place access/egress ladders within 25 ft of lateral travel for all workers	Inability to escape during emergency; falls from ladder; ladder displacement	Position ladders per 1926.651(c)(2) — max 25 ft travel distance. Ladders extend 3 ft above trench edge. Secure at top to prevent displacement. Inspect daily before use.	
7	Monitor atmospheric conditions in trench (>4 ft deep)	Oxygen deficiency; toxic gases (H ₂ S, CO, methane); hazardous atmosphere from nearby operations	Continuous atmospheric monitoring with 4-gas meter (O ₂ , LEL, CO, H ₂ S). Calibrate instrument daily. Ventilate with mechanical blowers if readings are abnormal. Rescue plan and retrieval system in place.	
8	Perform work activities within the trench (pipe installation, utility repair, etc.)	Struck-by from falling materials/tools; manual handling injuries; water accumulation	Keep materials/tools 2 ft back from trench edge. Use buckets or tool lanyards to lower items. Pump standing water continuously. No workers under suspended loads. Competent person inspects trench daily and after weather events.	
9	Backfill operations and compaction	Workers caught between equipment and trench wall; uncontrolled soil movement; vibration exposure	Clear all personnel from trench before backfilling. Remove shoring bottom-up. Backfill in lifts and compact per engineer specs. Operator maintains visual contact with spotter. Anti-vibration gloves for compaction equipment.	
10	Demobilize equipment and restore site	Struck-by during equipment movement; unguarded open	Barricade any open excavations left overnight with steel plates or fencing. Restore traffic	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
		excavations; trip hazards	control. Final inspection by competent person. Document JHA completion and any incidents.	

 **This JHA must be reviewed and signed by all crew members before work begins.** Conditions on the jobsite may change — reassess hazards throughout the shift and update this JHA as necessary.

REVIEW & APPROVAL

Reviewed By (Print Name)

Signature

Date

JOB HAZARD ANALYSIS

Rigging & Crane Lift Operations

Applicable Standards: 29 CFR 1926 Subpart CC (1926.1400–1926.1442) — *Cranes & Derricks*; ASME B30.5 — *Mobile Cranes*; ASME B30.9 — *Slings*; OSHA 1926.1431 — *Hoisting Personnel*

Project Name: _____	Date: _____
Location: _____	Supervisor: _____
Crew Members: _____	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
1	Conduct pre-lift planning — review lift plan, load weight, crane capacity at required radius	Crane overloading (structural failure/tip-over); incorrect load weight estimate; inadequate ground conditions	Qualified rigger calculates total load (object + rigging + block). Verify crane load chart at planned radius and boom length — stay below 75% of rated capacity for routine lifts. Review ground bearing capacity. Document lift plan — critical lifts (>75% capacity) require engineered lift plan.	
2	Set up crane on firm, level ground — extend outriggers and verify LMI/anti-two-block function	Crane tip-over from inadequate ground support; outrigger pad failure; LMI malfunction leading to undetected overload	Level crane within 1% grade (or per manufacturer spec). Outriggers fully extended with timber mats rated for ground pressure. Function-test LMI (Load Moment Indicator) and anti-two-block device before first lift. Daily crane inspection per 1926.1412.	
3	Inspect all rigging hardware — slings, shackles, hooks, and spreader beams	Rigging failure from damaged or overloaded hardware; dropped load; struck-by from failed rigging component	Qualified rigger inspects all rigging per ASME B30.9 — reject any sling with visible damage, broken wires, or missing ID tags. Verify hardware WLL (Working Load Limit) exceeds calculated sling loads. Use proper sling angles (never <30° included angle). Document inspection.	
4	Rig the load — attach slings, connect shackles, verify center of gravity, install taglines	Crush injuries during rigging attachment; pinch points between load and rigging; unbalanced load; tag line entanglement	Only qualified riggers attach hardware to loads. Hands clear of pinch points — use push/pull sticks. Verify CG with trial lift (raise 6-12 inches and pause). Install taglines of sufficient length — never wrap around hands. Use softeners on sling contact edges.	
5	Clear the lift zone — establish swing radius barricades and verify power line clearance	Workers struck by suspended load or crane components; boom contact with overhead power lines (electrocution); unauthorized entry into lift zone	Barricade swing radius plus 10 ft. Assign signal person with dedicated radio channel. Verify min 20-ft clearance from power lines per 1926.1408 (or use table for voltage >350kV). No personnel under suspended load at any time. Air horn for lift initiation warning.	
6	Execute the lift — signal person directs crane operator through pick, swing, and travel	Struck-by from load swing; crane tip-over during dynamic loading; loss of communication between operator and signal person; two-blocking	Standard hand signals or radio per 1926.1419–1926.1421. Smooth, controlled movements — no sudden stops or swings. Monitor LMI continuously. One signal person at a time (designated). Stop lift immediately for any "all stop" signal from any worker.	
7	Set and land the load at designated location	Crush injuries during landing; workers caught between load and structure; loss of load control in wind; rigging snagging on structure	Tagline operators guide load to within 12 inches. Landing zone crew clear until load is within 2 ft of landing. Use dunnage/cribbing at set point. Workers approach from upwind side only. Release load tension before disconnecting rigging. Wind speed limit: suspend lifts if sustained winds >20 mph (or per lift plan).	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
8	Disconnect rigging from landed load	Load shift after tension release; falling hardware when disconnecting; residual energy in rigging (snap-back)	Verify load is stable and fully supported before disconnecting. Rigger confirms no residual tension on slings. Remove rigging from topside when possible. Stack rigging hardware properly — never leave on ground in walkways. Inspect rigging for damage before next lift.	
9	Multi-crane lifts (when applicable) — coordinated dual-crane operations	Unequal load sharing leading to overload; boom collision; communication failure between operators; loss of synchronization	Engineered lift plan mandatory for all multi-crane lifts. Each crane limited to 75% of capacity at max radius. Dedicated signal person for each crane + lift director. Pre-lift meeting with all operators. Continuous radio communication. Abort procedure agreed upon and rehearsed.	
10	Secure crane at end of shift — boom stow, lockout, and documentation	Unattended crane movement; boom interference with other operations; theft/vandalism	Boom lowered and secured per manufacturer procedure. Swing lock engaged. Main disconnect locked out. Remove keys. Complete operator daily log — note any deficiencies. Report maintenance items to crane coordinator. Barricade crane perimeter if left on-site.	

 **This JHA must be reviewed and signed by all crew members before work begins.** Conditions on the jobsite may change — reassess hazards throughout the shift and update this JHA as necessary.

REVIEW & APPROVAL

Reviewed By (Print Name)

Signature

Date

JOB HAZARD ANALYSIS

Roofing Operations — Commercial & Residential

Applicable Standards: 29 CFR 1926 Subpart M (1926.500–1926.503) — Fall Protection; 29 CFR 1926.501(b)(10) — Roofing; OSHA 3150 — Fall Protection in Construction

Project Name: _____	Date: _____
Location: _____	Supervisor: _____
Crew Members: _____	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
1	Establish roof access via ladder, scaffold, or aerial lift	Falls from height during access/egress; ladder tip-over or displacement; overreaching	Extension ladder extends 3 ft above roof edge. Secure at top and base. 4:1 ratio setup. Use ladder stabilizer on soft ground. Three-point contact rule enforced. Workers wear 100% tie-off harness when transitioning to roof.	
2	Install perimeter fall protection (guardrails, warning line system, or personal fall arrest)	Unprotected roof edge — falls to lower level (leading cause of roofing fatalities)	Install guardrails meeting 1926.502(b) — 42" top rail, 21" mid rail, capable of 200 lb force. For low-slope roofs: warning line at 6 ft from edge + safety monitor OR personal fall arrest system. Anchor points rated 5,000 lbs per worker.	
3	Hoist materials to roof level using crane, conveyor, or manual methods	Struck-by from falling materials; overloaded hoist; musculoskeletal injuries from manual lifting	Establish exclusion zone below hoisting area. Tag loads — no riding loads. Inspect rigging hardware pre-use. Limit manual carries to <50 lbs per person. Two-person lift for bundles. Hard hats mandatory in hoist zone.	
4	Remove existing roofing materials (tear-off operations)	Falls through weakened decking or skylights; exposure to asbestos/lead in older buildings; nail puncture wounds	Survey for fragile decking and skylights — cover or guard per 1926.502(i). Pre-demolition hazmat survey for buildings pre-1980. Cut-resistant gloves and puncture-resistant boot insoles. Debris chute or controlled drop zone for waste.	
5	Inspect and repair roof deck substrate	Structural collapse of weakened deck; falls through openings; splinter/cut injuries	Competent person evaluates structural integrity before loading. Cover all deck openings — secure covers labeled "HOLE" per 1926.502(i). Replace rotted decking before proceeding. Maximum material staging load per structural engineer limits.	
6	Install underlayment, insulation, and vapor barrier	Heat illness (especially on dark roofs in summer); slips on smooth membrane; adhesive/solvent fume inhalation	Implement heat illness prevention plan — water, rest, shade per OSHA guidance. Cool-down breaks every 20 min when >90°F. Non-slip footwear required. Half-face respirator with OV cartridge for adhesive application. Ventilation for enclosed areas.	
7	Install primary roofing system (shingles, membrane, or metal panels)	Repetitive motion injuries; nail gun injuries; burns from hot-applied materials (BUR/modified bitumen); electrical contact with rooftop equipment	Sequential trigger on nail guns only (no bump firing). Hot kettle operators trained and certified — fire extinguisher within 25 ft. Maintain 10-ft clearance from electrical equipment. Rotate task assignments to reduce repetitive strain.	
8	Perform edge and flashing detail work (drip edge, valley, penetrations)	Falls from roof edge during low-position work; lacerations from sheet metal; dropped tools striking workers below	100% personal fall arrest at roof edge — 6-ft max free fall. Use retractable SRL when working near edge. Cut-resistant gloves for metal flashing. Tool lanyards on all hand tools. Drop zone barricaded below.	

Step #	Job Steps	Potential Hazards	Hazard Controls	Responsible Person
9	Conduct final inspection, cleanup, and debris removal	Puncture wounds from exposed fasteners; trip hazards from debris; struck-by during waste removal	Magnetic nail sweeper on deck and ground level. Bundle debris for controlled lowering — no throwing materials. Maintain fall protection until last worker descends. Final walkthrough by supervisor. Document punch list items.	

 **This JHA must be reviewed and signed by all crew members before work begins.** Conditions on the jobsite may change — reassess hazards throughout the shift and update this JHA as necessary.

REVIEW & APPROVAL

Reviewed By (Print Name)

Signature

Date

CONFINED SPACE ENTRY PROGRAM

Written Safety Program

[COMPANY NAME]

[Company Address]

[City, State ZIP]

[Phone Number]

Revision Date: [MM/DD/YYYY]

Revision Number: [1.0]

Prepared by Forbes Safety Solutions

Document Control

This document is the property of [COMPANY NAME]. It must be reviewed and updated at least annually or when conditions change.

Revision #	Date	Description of Change	Approved By
1.0	[Date]	Initial Release	[Name/Title]

Table of Contents

Note: Right-click and select "Update Field" to refresh the Table of Contents after editing.

1. Purpose and Scope

1.1 Purpose

The purpose of this Confined Space Entry Program is to establish the procedures and practices necessary to protect employees from the hazards of entry into permit-required confined spaces. This program complies with OSHA's Permit-Required Confined Spaces standard and provides a systematic approach to identifying confined spaces, evaluating their hazards, and implementing controls to ensure safe entry and work.

Confined spaces represent some of the most hazardous work environments. Atmospheric hazards, engulfment, entrapment, and other serious dangers claim an average of 92 worker lives each year. This program is designed to prevent such incidents at [COMPANY NAME].

1.2 Scope

This program applies to all [COMPANY NAME] employees, subcontractors, and temporary workers who may enter or work in or around confined spaces. This includes, but is not limited to:

- Storage tanks, process vessels, and silos
- Vaults, pits, and manholes
- Pipelines and ductwork large enough for employee entry
- Boilers, furnaces, and heat exchangers
- Sewers, storm drains, and underground utility vaults
- Hoppers, bins, and rail tank cars
- Excavations and trenches that meet confined space criteria
- Attic spaces, crawl spaces, and similar areas with limited access

1.3 Regulatory References

- 29 CFR 1910.146 – Permit-Required Confined Spaces (General Industry)
- 29 CFR 1926 Subpart AA – Confined Spaces in Construction
- 29 CFR 1910.147 – Control of Hazardous Energy (Lockout/Tagout)
- 29 CFR 1910.134 – Respiratory Protection
- 29 CFR 1910.1200 – Hazard Communication
- ANSI/ASSE Z117.1 – Safety Requirements for Confined Spaces
- NFPA 350 – Guide for Safe Confined Space Entry and Work

2. Definitions

Confined Space: A space that (1) is large enough and so configured that an employee can bodily enter and perform assigned work, (2) has limited or restricted means for entry or exit, and (3) is not designed for continuous employee occupancy.

Permit-Required Confined Space (PRCS): A confined space that has one or more of the following characteristics: (1) contains or has a potential to contain a hazardous atmosphere, (2) contains a material that has the potential for engulfing an entrant, (3) has an internal configuration such that an entrant could be trapped or asphyxiated, or (4) contains any other recognized serious safety or health hazard.

Non-Permit Confined Space: A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Acceptable Entry Conditions: Conditions that must exist in a permit space to allow safe entry and work. Includes atmospheric monitoring results within acceptable limits.

Atmospheric Testing: The process of monitoring the air within a confined space using calibrated direct-reading instruments to determine if the atmosphere is safe for entry.

Authorized Entrant: An employee who is authorized by the employer to enter a permit space.

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties.

Entry Supervisor: The person responsible for determining if acceptable entry conditions are present at a permit space, for authorizing entry, overseeing entry operations, and terminating entry.

Engulfment: The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance.

Hazardous Atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following: flammable gas/vapor/mist >10% of LEL; airborne combustible dust; oxygen <19.5% or >23.5%; atmospheric concentration of any substance exceeding its PEL; any other condition that is IDLH.

Hot Work: Operations capable of providing a source of ignition (e.g., riveting, welding, cutting, burning, heating).

Immediately Dangerous to Life or Health (IDLH): Any condition that poses an immediate or delayed threat to life, or that would cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a permit space.

Isolation: The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as blanking or blinding, misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout; or blocking or disconnecting all mechanical linkages.

Inerting: The displacement of the atmosphere in a permit space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible. **WARNING:** An inerted space is IDLH and requires supplied air for entry.

Retrieval System: The equipment used for non-entry rescue of persons from permit spaces, including a retrieval line, chest or full-body harness, wristlets, and a mechanical device or fixed point sufficient to aid in rescue.

3. Roles and Responsibilities

3.1 Employer / Management

- Establish, implement, and maintain this Confined Space Entry Program
- Identify and evaluate all confined spaces in the workplace
- Inform employees of the existence, location, and danger of permit-required confined spaces by posting danger signs or other effective means
- Provide all necessary confined space entry equipment at no cost to employees
- Ensure all employees involved in confined space operations are properly trained
- Coordinate entry operations when both host employer and contractor employees will be working in or near permit spaces
- Conduct annual program review and update as necessary
- Ensure rescue services are available and capable of responding in a timely manner
- Maintain all required documentation and records

3.2 Entry Supervisor

- Know the hazards that may be faced during entry, including the mode, signs/symptoms, and consequences of exposure
- Verify that all tests specified by the permit have been conducted and that all procedures and equipment are in place before endorsing the permit and allowing entry
- Terminate the entry and cancel the permit when entry operations are completed or when a prohibited condition arises
- Verify that rescue services are available and that means for summoning them are operable
- Remove unauthorized individuals from the permit space or its vicinity
- Determine that entry operations remain consistent with the terms of the permit and acceptable entry conditions are maintained
- Ensure the permit is completed, signed, and posted at the entry point

3.3 Authorized Entrant

- Know the hazards that may be faced during entry, including the mode, signs/symptoms, and consequences of exposure
- Properly use all equipment as required (PPE, monitoring equipment, communications, rescue equipment)
- Communicate with the attendant as necessary so the attendant can monitor entrant status and alert entrants to evacuate if necessary
- Alert the attendant when the entrant recognizes any warning sign or symptom of a dangerous condition or detects a prohibited condition

- Exit the permit space as quickly as possible when ordered to evacuate, when recognizing signs of exposure, when a prohibited condition exists, or when an evacuation alarm is activated

3.4 Attendant

- Know the hazards that may be faced during entry, including the mode, signs/symptoms, and consequences of exposure
- Remain outside the permit space during entry operations and maintain an accurate count of entrants
- Maintain effective and continuous communication with authorized entrants
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain
- Order the entrants to evacuate immediately if a prohibited condition is detected, if behavioral effects of exposure are observed, if a situation outside the space could endanger entrants, or if the attendant cannot effectively perform all required duties
- Summon rescue and emergency services as soon as it is determined that entrants may need assistance
- Perform non-entry rescue procedures as specified in the rescue plan
- Do NOT enter the permit space for any reason unless relieved by another authorized attendant
- Keep unauthorized persons from entering the permit space
- Inform entrants and the entry supervisor if unauthorized persons enter the space

4. Confined Space Entry Procedures

4.1 Space Identification and Evaluation

[COMPANY NAME] shall identify all confined spaces in the workplace using the Space Inventory Form (Appendix C). Each space shall be evaluated to determine if it is a permit-required confined space. The evaluation shall consider:

- Configuration and physical characteristics of the space
- Potential for hazardous atmospheres (from the process, materials stored, adjacent operations, or the space itself)
- Potential for engulfment by stored materials
- Internal configuration hazards (inwardly converging walls, floors that slope to a smaller cross-section)
- Other recognized serious hazards (mechanical, electrical, hydraulic, thermal, chemical)
- Historical information about the space (previous incidents, materials processed)

Spaces shall be re-evaluated whenever conditions change, processes are modified, or new information about the space becomes available.

4.2 Permit System

A Confined Space Entry Permit (Appendix A) shall be completed and authorized before any employee enters a permit-required confined space. The permit shall include:

- Space identification and location
- Purpose of entry and authorized duration
- Date and time of entry authorization and expiration
- Names of authorized entrants, attendants, and the entry supervisor
- Hazards of the permit space
- Measures used to isolate the permit space and eliminate or control hazards (lockout/tagout, ventilation, etc.)
- Acceptable entry conditions (atmospheric limits, temperature, etc.)
- Results of initial and periodic atmospheric tests with tester's initials
- Rescue and emergency services and how to summon them
- Communication procedures between entrants and attendants
- Equipment required (PPE, testing, communications, lighting, barriers)
- Hot work permit number (if applicable)
- Any other permits issued in connection with the entry (e.g., hot work, lockout/tagout)

The permit shall be posted at the entry point and shall be valid for one work shift only. Permits shall be canceled when entry operations are completed or when a prohibited condition arises. Canceled permits shall be retained for at least one year for program review.

4.3 Atmospheric Testing

Atmospheric testing is mandatory before any entry into a permit-required confined space and shall continue throughout the duration of entry. Testing shall be performed in the following order:

4.3.1 Testing Sequence

Atmospheric testing shall always be performed in this specific order:

- 1. OXYGEN (O₂) — Test first because combustible gas meters require adequate oxygen to function accurately. Acceptable range: 19.5% to 23.5%.
- 2. COMBUSTIBLE GASES (LEL) — Test second. Acceptable level: Less than 10% of the Lower Explosive Limit (LEL).
- 3. TOXIC GASES — Test third. Common toxic gases and their Permissible Exposure Limits include: Hydrogen Sulfide (H₂S): Less than 10 ppm; Carbon Monoxide (CO): Less than 25 ppm. Additional toxic substances shall be tested based on the specific hazards of the space.

4.3.2 Atmospheric Monitoring Requirements

- Testing shall be conducted at multiple levels within the space (top, middle, bottom) because gases stratify by weight
- Initial testing shall be performed from outside the space using remote probes or sampling lines
- Continuous monitoring shall be maintained throughout the duration of the entry
- If continuous monitoring is not feasible, periodic monitoring shall be conducted at intervals not exceeding 15 minutes
- All atmospheric monitoring results shall be documented on the Atmospheric Testing Log (Appendix B) and on the entry permit
- If the atmosphere is found to be outside acceptable limits at any time, all entrants shall immediately evacuate the space

4.3.3 Acceptable Atmospheric Conditions

Atmospheric Hazard	Acceptable Level	Action Level	IDLH Level
Oxygen (O ₂)	19.5% – 23.5%	< 19.5% or > 23.5%	< 16%
Combustible Gas (LEL)	< 10% LEL	≥ 10% LEL	≥ 20% LEL
Hydrogen Sulfide (H ₂ S)	< 10 ppm	≥ 10 ppm	100 ppm
Carbon Monoxide (CO)	< 25 ppm	≥ 25 ppm	1,200 ppm

4.3.4 Instrument Calibration

All atmospheric monitoring instruments shall be:

- Calibrated according to the manufacturer's instructions before each day of use (bump test minimum)
- Full calibration performed at intervals specified by the manufacturer (typically monthly or per manufacturer's schedule)
- Calibrated using certified calibration gas that is traceable to NIST standards
- Maintained with current calibration records that include date, gas concentrations used, and person performing calibration
- Removed from service immediately if calibration fails or if the instrument is damaged
- Replaced or repaired by qualified personnel only

4.4 Ventilation

Mechanical ventilation shall be provided to maintain acceptable atmospheric conditions within the permit space:

- Forced-air ventilation shall be used to maintain oxygen levels within the acceptable range and to reduce concentrations of toxic and combustible gases below action levels
- Ventilation equipment shall be positioned to direct fresh air into the space and to avoid recirculating contaminated air
- The air supply for ventilation shall be from a clean source — never from areas where contaminants may be present
- Ventilation shall be started before entry and continued for a sufficient time to purge the space before the initial entry
- Ventilation shall continue throughout the duration of entry operations
- If ventilation is interrupted, all entrants shall evacuate and the space shall be re-tested before re-entry
- Natural ventilation alone is generally NOT sufficient for permit-required confined spaces

4.5 Isolation and Lockout/Tagout

Before entry, the permit space shall be isolated from all energy sources and material inputs:

- All pipes, lines, and ducts carrying materials into the space shall be blanked, blinded, disconnected, or double block-and-bleed
- All mechanical equipment within the space shall be locked out and tagged out per 29 CFR 1910.147
- Electrical energy sources shall be de-energized and locked out
- Hydraulic, pneumatic, and other stored energy sources shall be relieved, blocked, and secured
- Physical barriers shall be used where blanking/blinding is not feasible

- The entry supervisor shall verify all isolation and LOTO measures before authorizing entry

4.6 Rescue Procedures

[COMPANY NAME] shall ensure that rescue services are available for confined space emergencies. The following rescue hierarchy shall be used:

4.6.1 Non-Entry Rescue (Preferred)

Non-entry rescue is the preferred rescue method and shall be used whenever possible:

- Each authorized entrant shall wear a chest or full-body harness with a retrieval line attached to the center of the back near shoulder level, above the head, or at another point approved by the manufacturer
- The other end of the retrieval line shall be attached to a mechanical retrieval device or fixed point outside the space
- The retrieval system shall be configured so that rescue can begin as soon as the need is recognized
- A mechanical retrieval device (tripod with winch) shall be available at vertical entries exceeding 5 feet in depth
- Retrieval lines shall be managed to prevent entanglement and to maintain the ability to retrieve the entrant at all times

4.6.2 Entry Rescue

If non-entry rescue is not feasible or fails, entry rescue shall be performed only by trained rescue personnel:

- Entry rescuers shall be trained in CPR, first aid, and the use of rescue equipment including SCBA/SAR
- Rescuers shall practice rescue operations at least once every 12 months using simulated confined space conditions
- Rescue services shall be capable of responding within a timeframe appropriate to the identified hazards
- If using a third-party rescue service (fire department, etc.), [COMPANY NAME] shall evaluate the service's capabilities, response time, and ability to function in the specific permit spaces
- Rescue personnel shall be provided with all information about the space, its hazards, and the conditions of the entrants
- Rescuers entering the space shall be treated as authorized entrants and all entry procedures shall apply

4.7 Contractor Coordination

When [COMPANY NAME] hires contractors to perform confined space work on company premises, the following coordination shall occur:

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program
- Apprise the contractor of the hazards identified in the specific permit space(s)
- Apprise the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near permit spaces
- Coordinate entry operations with the contractor when both host and contractor employees will be working in or near the same permit space
- Debrief the contractor after entry operations regarding any hazards confronted or created during entry
- Obtain the contractor's confined space program and entry procedures for review

5. Training Requirements

5.1 General Training

All employees who may be involved in confined space operations shall receive training appropriate to their assigned duties. Training shall be provided before the employee is first assigned duties involving confined spaces and before there is a change in assigned duties.

5.2 Training by Role

5.2.1 Authorized Entrant Training

- Recognition of confined space hazards (atmospheric, physical, engulfment, entrapment)
- Signs, symptoms, and consequences of exposure to atmospheric hazards
- Proper use of atmospheric monitoring equipment
- Proper use of personal protective equipment (PPE), including respiratory protection
- Communication procedures with the attendant
- Emergency and self-rescue procedures
- Prohibition against unauthorized self-rescue by other entrants

5.2.2 Attendant Training

- All topics covered in Authorized Entrant Training
- Duties and responsibilities of the attendant role
- Procedures for summoning rescue and emergency services
- Non-entry rescue procedures and equipment use
- Maintaining an accurate count and identity of entrants
- Recognizing behavioral effects of hazard exposure in entrants
- Procedures for preventing unauthorized entry

5.2.3 Entry Supervisor Training

- All topics covered in Authorized Entrant and Attendant Training
- Permit completion, authorization, and cancellation procedures
- Hazard assessment and acceptable entry condition verification
- Coordination of entry operations and multi-employer communication
- Authority to terminate entry and cancel permits
- Program administration and documentation requirements

5.2.4 Rescue Team Training

- All topics covered in Authorized Entrant Training
- CPR and first aid certification (current)

- Use of rescue equipment (retrieval systems, SCBA/SAR, patient packaging)
- Practice rescue operations at least once every 12 months using simulated conditions representative of actual permit spaces
- Recognition and treatment of medical emergencies common to confined space incidents

5.3 Retraining

Retraining shall be provided when:

- Job duties change or new confined spaces are introduced
- A change in permit space operations creates a hazard about which the employee has not been trained
- The employer has reason to believe there are deviations from the entry procedures or inadequacies in the employee's knowledge
- After any confined space incident or near miss
- At minimum, annual refresher training shall be provided to maintain competency

5.4 Training Documentation

Training records shall include: employee name and signature, date(s) of training, trainer name and qualifications, topics covered, and duration. Records shall be maintained for the duration of employment plus three years. Use the Training Sign-Off Sheet (Appendix E) to document each session.

6. Inspection and Audit Procedures

6.1 Permit Review

[COMPANY NAME] shall review canceled entry permits within one year of each entry to ensure that the program is protecting employees. The review shall evaluate:

- Whether the permit procedures were followed correctly
- Whether the atmospheric testing results were within acceptable limits
- Whether rescue provisions were adequate
- Whether any problems or deviations occurred during entry
- Whether any corrective actions are needed to improve the program

6.2 Annual Program Audit

A comprehensive audit of the entire Confined Space Entry Program shall be conducted annually. The audit shall be performed by a person knowledgeable about confined space entry and shall evaluate:

- Space inventory accuracy and completeness
- Permit adequacy and compliance
- Atmospheric monitoring procedures and instrument calibration records
- Training adequacy and currency of all involved employees
- Rescue plan effectiveness and rescue drill results
- Equipment condition and availability
- Contractor coordination effectiveness
- Incident and near-miss investigation results and corrective actions
- Compliance with applicable OSHA standards

6.3 Equipment Inspection

All confined space entry equipment shall be inspected before each use and maintained per manufacturer specifications:

- Atmospheric monitoring instruments — daily bump test, monthly full calibration
- Ventilation equipment — functional test, power source verification
- Retrieval systems (tripod, winch) — mechanical inspection, cable/harness check
- Communication equipment — functional test before each entry
- Respiratory protection — inspection per 29 CFR 1910.134
- Personal protective equipment — visual inspection for damage, proper fit verification
- Lighting — functional test, intrinsically safe verification where required

7. Documentation and Recordkeeping

[COMPANY NAME] shall maintain the following records:

Record Type	Retention Period	Responsible Party
Confined Space Inventory	Duration of space existence + 1 year	Safety Manager
Entry Permits (canceled)	Minimum 1 year	Entry Supervisor
Atmospheric Testing Logs	1 year minimum (retain with permit)	Entry Supervisor
Instrument Calibration Records	Duration of instrument service + 1 year	Safety Manager
Training Records	Duration of employment + 3 years	Safety Manager
Rescue Drill Records	5 years minimum	Safety Manager
Incident/Near Miss Reports	5 years minimum	Safety Manager
Annual Program Audit Reports	5 years minimum	Management
Contractor Coordination Records	Duration of contract + 1 year	Safety Manager

All records shall be readily accessible for review by OSHA compliance officers, employees, and their designated representatives.

Appendix A: Confined Space Entry Permit

Field	Information
Permit Number:	[]
Space Name/ID:	[]
Space Location:	[]
Purpose of Entry:	[]
Date of Entry:	[]
Time Authorized:	[] Time Expires: []

Personnel

Role	Name(s)
Entry Supervisor:	
Authorized Entrant(s):	
Attendant(s):	
Rescue Team/Service:	

Hazard Identification

- ☐ Hazardous Atmosphere ☐ Oxygen Deficiency ☐ Oxygen Enrichment
- ☐ Flammable Gas/Vapor ☐ Toxic Gas/Vapor ☐ Combustible Dust
- ☐ Engulfment Hazard ☐ Entrapment Hazard ☐ Mechanical Hazard
- ☐ Electrical Hazard ☐ Thermal Hazard ☐ Noise Hazard
- ☐ Falling Object Hazard ☐ Slip/Trip/Fall Hazard ☐ Other: _____

Hazard Control Measures

- ☐ Lockout/Tagout completed ☐ Lines blanked/blinded/disconnected
- ☐ Mechanical ventilation in place ☐ Continuous atmospheric monitoring
- ☐ Pedestrian/vehicle barricades ☐ Hot work permit issued (#____)
- ☐ Retrieval system in place ☐ Communication system verified
- ☐ Emergency services notified ☐ Other: _____

Atmospheric Test Results

Time	O ₂ (%)	LEL (%)	H ₂ S (ppm)	CO (ppm)	Other	Tester Initials

Required PPE / Equipment

- ☐ Hard Hat ☐ Safety Glasses ☐ Hearing Protection ☐ Gloves (Type: _____)
- ☐ Steel-Toe Boots ☐ FR Clothing ☐ Chemical-Resistant Suit
- ☐ Full-Body Harness with Retrieval Line ☐ SCBA ☐ SAR (Supplied Air)
- ☐ Explosion-Proof Lighting ☐ GFCI Protected Power ☐ Radio/Communication
- ☐ Multi-Gas Monitor ☐ Tripod/Winch ☐ Other: _____

Authorization

I verify that all precautions have been taken, acceptable entry conditions exist, and rescue services are available.

Entry Supervisor Signature: _____ Date/Time: _____

Permit Canceled By: _____ Date/Time: _____

Reason for Cancellation: ☐ Work Complete ☐ Prohibited Condition ☐ Shift Change ☐ Other:

Appendix B: Atmospheric Testing Log

Field	Information
Space Name/ID:	[]
Permit Number:	[]
Date:	[]
Monitor Make/Model:	[]
Monitor Serial #:	[]
Last Calibration Date:	[]
Bump Test Performed:	☐ Yes ☐ No Time: [] By: []

Monitoring Results

Test at top, middle, and bottom of space. Record all readings.

Time	Level (T/M/B)	O ₂ (%)	LEL (%)	H ₂ S (ppm)	CO (ppm)	Other (specify)	Tester Initials

Acceptable Limits: O₂: 19.5–23.5% | LEL: <10% | H₂S: <10 ppm | CO: <25 ppm

Tester Signature: _____ Date: _____

Appendix C: Confined Space Inventory Form

This inventory shall be reviewed and updated at least annually. All spaces shall be evaluated to determine permit-required status.

Space ID #	Space Name / Description	Location	Permit Required? (Y/N)	Primary Hazards	Last Evaluation Date	Evaluated By

Inventory Completed By: _____ Date: _____

Reviewed By: _____ Date: _____

Appendix D: Pre-Entry Checklist

Field	Information
Space Name/ID:	[]
Permit Number:	[]
Date:	[]
Entry Supervisor:	[]

Pre-Entry Verification

#	Item	Yes	No	N/A	Initials
1	Has the space been identified and evaluated?				
2	Has the entry permit been completed and authorized?				
3	Have all entrants, attendants, and supervisors been trained?				
4	Has the space been isolated (LOTO, blanking, blinding)?				
5	Has atmospheric testing been performed (O ₂ , LEL, toxics)?				
6	Are atmospheric readings within acceptable limits?				
7	Is mechanical ventilation in place and operating?				
8	Is continuous atmospheric monitoring available?				
9	Is the retrieval system set up and operational?				
10	Is rescue equipment on-site and ready for use?				
11	Has the rescue service been notified/confirmed?				
12	Is communication equipment tested and working?				
13	Is all required PPE available and properly fitted?				
14	Are barricades/barriers in place around the entry point?				
15	Is the entry permit posted at the entry point?				
16	Has a pre-entry safety briefing been conducted?				
17	Is hot work permit issued (if applicable)?				
18	Is adequate lighting available (intrinsically safe if required)?				

Entry Supervisor Signature: _____ Date: _____

Appendix E: Training Sign-Off Sheet

Field	Information
Training Topic:	Confined Space Entry Program
Training Date:	[]
Training Location:	[]
Trainer Name:	[]
Trainer Qualifications:	[]
Training Duration:	[]

Topics Covered

- ☐ Confined space identification and classification
- ☐ Permit system and entry procedures
- ☐ Atmospheric testing procedures and instrument operation
- ☐ Ventilation requirements and procedures
- ☐ Roles and responsibilities (entrant, attendant, supervisor)
- ☐ Isolation and lockout/tagout requirements
- ☐ Rescue procedures (non-entry and entry rescue)
- ☐ Personal protective equipment use
- ☐ Emergency procedures and evacuation
- ☐ Applicable OSHA standards (29 CFR 1910.146, 1926 Subpart AA)

Employee Acknowledgment

By signing below, I acknowledge that I have received training in the above topics, understand the material presented, had the opportunity to ask questions, and agree to comply with the confined space entry requirements of [COMPANY NAME].

#	Employee Name (Print)	Employee Signature	Date	Role Trained (E/A/S/R)

E = Entrant | A = Attendant | S = Supervisor | R = Rescue

Trainer Signature: _____ Date: _____

FORBES SAFETY SOLUTIONS

ELECTRICAL SAFETY PROGRAM

OSHA-Compliant Workplace Safety Program

[COMPANY NAME]

Effective Date: [DATE]

Revision Number: [REV #]

Prepared By: [NAME / TITLE]

Approved By: [NAME / TITLE]

Approval Date: [DATE]

TABLE OF CONTENTS

1. PURPOSE & SCOPE

The purpose of this Electrical Safety Program is to establish minimum requirements and procedures for protecting [COMPANY NAME] employees from electrical hazards encountered during work activities. This program applies to all employees, contractors, and visitors who may be exposed to electrical hazards at [COMPANY NAME] job sites and facilities.

This program addresses both general industry and construction electrical safety requirements, ensuring compliance with applicable OSHA standards and recognized industry best practices.

Scope of Application:

- All work performed on or near energized electrical equipment or conductors
- Installation, maintenance, and repair of electrical systems
- Use of portable electrical equipment and extension cords
- Work performed near overhead and underground power lines
- Arc flash hazard assessment and mitigation

2. REGULATORY REFERENCES

This program is designed to comply with the following regulatory standards:

- **29 CFR 1910.331–335** — OSHA General Industry: Electrical Safety-Related Work Practices
- **29 CFR 1910.301–308** — OSHA General Industry: Electrical Design Safety Standards
- **29 CFR 1926 Subpart K (§1926.400–449)** — OSHA Construction: Electrical
- **NFPA 70E** — Standard for Electrical Safety in the Workplace (current edition)
- **NFPA 70** — National Electrical Code (NEC)
- **ASTM F1506** — Standard Performance Specification for FR Textile Materials for Wearing Apparel
- **IEEE 1584** — Guide for Performing Arc Flash Hazard Calculations

3. DEFINITIONS

3.1 Qualified Person

An individual who has training and demonstrated skills and knowledge in the construction and operation of electrical equipment and installations, and has received safety training to identify and avoid the

hazards involved. A Qualified Person must be able to distinguish exposed live parts, determine nominal voltage, and know the clearance distances required per NFPA 70E.

3.2 Unqualified Person

An individual with little or no training regarding electrical hazards. Unqualified persons must be trained in and familiar with any electrically related safety practices necessary for their safety. Unqualified persons shall not approach energized parts closer than the Limited Approach Boundary without the guidance of a Qualified Person.

3.3 Approach Boundaries

NFPA 70E defines the following shock protection approach boundaries for AC systems:

- **Limited Approach Boundary** — The distance from an exposed energized conductor within which a shock hazard exists. Unqualified persons may not cross this boundary.
- **Restricted Approach Boundary** — The distance from an exposed energized conductor within which there is an increased likelihood of electric shock. Only Qualified Persons wearing appropriate PPE may cross this boundary.
- **Prohibited Approach Boundary** — The distance from an exposed energized conductor within which work is considered the same as making contact with the conductor. Crossing this boundary requires the same PPE and procedures as direct contact.
- **Arc Flash Boundary** — The distance from an arc source at which incident energy equals 1.2 cal/cm² (the threshold for a second-degree burn).

4. ROLES & RESPONSIBILITIES

4.1 Management / Employer

- Provide adequate resources for implementation and maintenance of this program
- Ensure an arc flash hazard analysis is performed and labels are applied to equipment
- Provide appropriate PPE and ensure it is maintained in safe, reliable condition
- Ensure only Qualified Persons perform work on energized electrical equipment
- Maintain and make available all required safety documentation and permits

4.2 Safety Manager

- Administer this Electrical Safety Program and ensure compliance

- Conduct periodic audits of electrical safety practices (at least annually)
- Review and approve all Energized Electrical Work Permits
- Investigate all electrical incidents and near-misses
- Coordinate training programs for Qualified and Unqualified Persons

4.3 Qualified Persons / Employees

- Follow all established electrical safety work practices and procedures
- Inspect tools, equipment, and PPE before each use
- Report unsafe conditions, damaged equipment, and near-misses immediately
- Maintain current training qualifications
- Participate in all required safety training

5. PROGRAM PROCEDURES

5.1 Energized Electrical Work Permit

All work on energized electrical conductors or circuit parts operating at 50 volts or more shall be de-energized before work begins, unless one of the following conditions applies:

- De-energization introduces additional or increased hazards (e.g., loss of ventilation in a hazardous location, deactivation of emergency systems)
- De-energization is infeasible due to equipment design or operational limitations

When energized work is justified, an **Energized Electrical Work Permit** (see Appendix A) must be completed and approved by the Safety Manager before work begins. The permit must document:

- Description and location of the circuit/equipment
- Justification for why the work must be performed energized
- Shock and arc flash hazard analysis results
- Safe work practices to be employed
- Required PPE for each task
- Means of restricting access to the work area
- Evidence of job briefing completion

5.2 De-Energization (Lockout/Tagout) Procedures

The following steps shall be followed for de-energizing electrical equipment:

1. Identify all sources of electrical energy and the means of disconnecting them.

2. Notify all affected personnel that equipment will be de-energized.
3. Load the equipment/circuit, if applicable, before disconnecting.
4. Open the disconnecting device(s) for each source of energy.
5. Apply lockout/tagout devices per [COMPANY NAME]'s LOTO program.
6. Verify the equipment is de-energized using an appropriately rated voltage testing device. Test the tester before and after use on a known live source.
7. Ground all phase conductors if there is a possibility of induced voltage or stored electrical energy.
8. Perform work only after all steps are complete and verified.

Re-Energization: Before circuits or equipment are re-energized, conduct visual inspection to ensure all tools, test equipment, and personnel are clear. Remove lockout/tagout devices. Notify affected personnel before energizing.

5.3 PPE Categories and Arc Flash PPE Table

The following table outlines the minimum PPE requirements for each arc flash PPE Category per NFPA 70E:

PPE Category	Cal/cm ² Rating	Required PPE
CAT 1	4 cal/cm ²	Arc-rated long-sleeve shirt and pants or coverall (min 4 cal/cm ²); arc-rated face shield or flash suit hood; hard hat; safety glasses; hearing protection; heavy-duty leather gloves; leather footwear
CAT 2	8 cal/cm ²	Arc-rated long-sleeve shirt and pants or coverall (min 8 cal/cm ²); arc-rated flash suit hood or face shield with balaclava; hard hat; safety glasses; hearing protection; arc-rated gloves; leather footwear
CAT 3	25 cal/cm ²	Arc flash suit (jacket, pants, and hood) rated min 25 cal/cm ² ; arc-rated gloves; hard hat; safety glasses; hearing protection; arc-rated jacket and pants worn underneath; leather footwear
CAT 4	40 cal/cm ²	Arc flash suit (jacket, pants, and hood) rated min 40 cal/cm ² ; arc-rated gloves; hard hat; safety glasses; hearing protection; arc-rated shirt and pants worn underneath; leather footwear

Note: All arc-rated clothing and equipment must be properly maintained and inspected before each use. Contaminated, damaged, or worn PPE must be replaced immediately.

5.4 GFCIs and Assured Equipment Grounding

Per 29 CFR 1926.404(b)(1), [COMPANY NAME] shall use one or both of the following methods on construction sites:

Ground-Fault Circuit Interrupters (GFCIs):

- All 120-volt, single-phase, 15- and 20-ampere receptacle outlets on construction sites that are not part of the permanent wiring shall have GFCI protection.

- GFCIs shall be tested before each day's use per manufacturer's instructions.
- Defective GFCIs shall be removed from service immediately.

Assured Equipment Grounding Conductor Program (AEGCP):

- As an alternative or supplement to GFCIs, [COMPANY NAME] may implement an AEGCP.
- All equipment grounding conductors shall be tested for continuity and correct attachment.
- Testing shall occur before first use, after any repair, at intervals not exceeding 3 months, and before use after any incident that could cause damage.
- A competent person shall be designated to implement the program.
- All tests shall be documented and records maintained at the jobsite.

5.5 Overhead Power Line Clearance Distances

Per 29 CFR 1926.1408 and OSHA requirements, the following minimum clearance distances must be maintained from overhead power lines:

Voltage Range (kV)	Minimum Clearance Distance
Up to 50 kV	10 feet (3.05 m)
Over 50 to 200 kV	15 feet (4.60 m)
Over 200 to 350 kV	20 feet (6.10 m)
Over 350 to 500 kV	25 feet (7.62 m)
Over 500 to 750 kV	35 feet (10.67 m)
Over 750 to 1,000 kV	45 feet (13.72 m)

Note: If voltage is unknown and the utility owner cannot provide the information, the minimum clearance distance is 20 feet for lines rated over 350 kV to 1,000 kV, or 10 feet for voltages below 50 kV.

5.6 Temporary Wiring Requirements

Temporary electrical wiring on construction sites must comply with the following:

- Temporary wiring shall be removed immediately upon completion of the project or purpose.
- All temporary branch circuits shall originate from an approved power outlet or panel board.
- Receptacles on temporary circuits shall be of the grounding type.
- All flexible cords shall be rated for hard or extra-hard usage (e.g., S, ST, SO, STO, SJ, SJT, SJO, SJTO types).
- Flexible cords shall not be fastened with staples, hung from nails, or suspended by wire.
- All cords passing through work areas shall be protected from damage (covered, elevated, or routed away from traffic).
- Extension cords used with portable tools and equipment shall be the three-wire type.
- Each temporary circuit shall be protected by an overcurrent device of appropriate rating.

6. TRAINING REQUIREMENTS

[COMPANY NAME] shall provide electrical safety training to all employees who face risk of electric shock or arc flash hazards. Training shall be appropriate to the employee's job duties and classification.

6.1 Qualified Person Training

- Skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment
- Skills and techniques necessary to determine nominal voltage of exposed live parts
- Knowledge of approach boundary distances for the voltage levels involved
- Decision-making process for determining degree and extent of the hazard, including arc flash hazard analysis
- Proper selection and use of arc-rated PPE
- Lockout/tagout procedures for de-energizing electrical equipment
- Emergency procedures, including CPR/AED and rescue from contact with energized conductors
- Retraining at intervals not exceeding three (3) years or when procedures change

6.2 Unqualified Person Training

- Recognition of electrical hazards and understanding of approach boundaries
- Procedures for safe interaction around electrical equipment
- Emergency response and reporting procedures
- Proper use of GFCIs and extension cords

7. RECORDKEEPING

[COMPANY NAME] shall maintain the following records:

- **Training records:** Names, dates, content, and trainer information for all electrical safety training. Retained for duration of employment plus three (3) years.
- **Energized Electrical Work Permits:** All completed permits retained for a minimum of three (3) years.
- **Arc flash hazard analysis records:** All arc flash study reports, labels, and updates retained for the life of the equipment.
- **Equipment inspection and testing records:** GFCI testing logs, AEGCP testing records, and PPE inspection logs.

- **Incident investigation reports:** All electrical incidents and near-misses retained for a minimum of five (5) years.

APPENDIX A: ENERGIZED ELECTRICAL WORK PERMIT

ENERGIZED ELECTRICAL WORK PERMIT

Permit Number: _____ Date: _____

Job Location / Description: _____

Equipment / Circuit Identification: _____

Voltage Level: _____

Justification for Energized Work (check one):

- ☐ De-energization would create additional or increased hazards
- ☐ De-energization is infeasible due to equipment design or operational limitations

Explain justification: _____

: _____

Hazard Analysis Results:

Shock Hazard Analysis: _____ Available Fault Current: _____

Arc Flash Boundary: _____ Incident Energy (cal/cm²): _____

PPE Category Required: _____ Working Distance: _____

Required PPE for This Task:

- ☐ Arc-rated clothing (min _____ cal/cm²)
- ☐ Arc-rated face shield / flash suit hood
- ☐ Arc-rated gloves (Class _____)
- ☐ Hard hat (non-conductive)
- ☐ Safety glasses / goggles
- ☐ Hearing protection
- ☐ Insulated tools
- ☐ Voltage-rated rubber gloves with leather protectors

☐ Rubber insulating matting

☐ Other: _____

Safe Work Practices:

Barriers / barricades used: _____

Means of restricting access: _____

Shock protection approach boundaries identified? (Y/N):

Job Briefing Conducted:

Briefing Conducted By: _____ **Date / Time:** _____

Attendees:

1: _____

2: _____

3: _____

Approvals:

Requested By (Qualified Person): _____ **Date:** _____

Approved By (Safety Manager): _____ **Date:** _____

APPENDIX B: ELECTRICAL SAFETY INSPECTION CHECKLIST**ELECTRICAL SAFETY INSPECTION CHECKLIST**

Project / Location: _____

Date: _____

Inspector Name: _____

Title: _____

General Electrical Safety:

- ☐ All electrical panels are accessible (36-inch clearance maintained)
- ☐ Panel covers and doors are in place and closed
- ☐ Circuit breakers and disconnects are properly labeled
- ☐ No evidence of overheating, burning, or smoke damage
- ☐ Arc flash labels are present on all applicable equipment
- ☐ Approach boundary signage is posted where required

Portable Equipment & Extension Cords:

- ☐ Extension cords are rated for hard or extra-hard usage
- ☐ No visible damage to cords (cuts, fraying, exposed conductors)
- ☐ All cords have grounding prongs intact
- ☐ GFCIs are in use on all temporary circuits
- ☐ GFCIs have been tested today
- ☐ Cords are protected from damage in traffic areas
- ☐ No cords run through doors, windows, or holes in walls/ceilings

Overhead Power Lines:

- ☐ Minimum clearance distances are maintained
- ☐ Warning signs/barriers in place where applicable
- ☐ Spotters assigned for crane/equipment operations near power lines

PPE & Tools:

- ☐ Insulated tools are in good condition (no cracks or damage)

- ☐ Voltage-rated gloves are within test date
- ☐ Arc-rated clothing is clean and undamaged
- ☐ Voltage detectors are functioning and calibrated

Corrective Actions Required:

Item 1: _____

Item 2: _____

Item 3: _____

Inspector Signature: _____

Date: _____

Supervisor Signature: _____

Date: _____

FORBES SAFETY SOLUTIONS

EMERGENCY ACTION PLAN

[COMPANY NAME]

[PROJECT NAME / SITE ADDRESS]

Per 29 CFR 1910.38 & 29 CFR 1926.35
Effective Date: [DATE] | Revision: [REV #]

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6. Medical Emergency Procedures
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8. Utility Emergency Procedures
9. Communication Procedures
10. Training Requirements
11. Plan Review & Maintenance

1. PURPOSE & SCOPE

This Emergency Action Plan (EAP) establishes procedures and responsibilities for responding to emergencies at [COMPANY NAME] project sites. This plan complies with OSHA requirements under 29 CFR 1910.38 (Emergency Action Plans) and 29 CFR 1926.35 (Employee Emergency Action Plans) for construction operations.

This plan applies to:

- All employees, subcontractors, and visitors at [PROJECT NAME] site
- All work shifts and operations
- Emergency situations including fire, severe weather, medical emergencies, hazardous material spills, and utility emergencies

Responsible parties:

- Site Superintendent / Project Manager: Overall EAP implementation and coordination
- Safety Manager: Plan development, training, and compliance monitoring
- All Employees: Familiarity with plan and participation in drills

Plan Administrator: [Name / Title]

Site Location: [Full Address]

Nearest Cross Streets: []

2. EMERGENCY CONTACT NUMBERS

Post this information at all site entrances, break areas, and in the site office. All personnel must be aware of these numbers.

Contact	Phone Number	Notes / Address
Emergency Services (Police/Fire/EMS)	911	All emergencies
Nearest Hospital: [HOSPITAL NAME]	[PHONE]	[ADDRESS / DISTANCE]
Nearest Urgent Care	[PHONE]	[ADDRESS]
Poison Control Center	1-800-222-1222	24/7 national hotline
National Weather Service	[LOCAL #]	Severe weather alerts
Local Fire Department (Non-Emergency)	[PHONE]	[ADDRESS]
Utility Company — Electric	[PHONE]	Power line emergencies
Utility Company — Gas	[PHONE]	Gas leak emergencies
Utility Company — Water	[PHONE]	Water main issues
811 — Call Before You Dig	811	Underground utility locates

Company Emergency Contacts

Role	Name	Phone	Email / Info
Project Manager	[NAME]	[PHONE]	[EMAIL]
Site Superintendent	[NAME]	[PHONE]	[EMAIL]
Safety Manager / Officer	[NAME]	[PHONE]	[EMAIL]
Company Owner / Principal	[NAME]	[PHONE]	[EMAIL]
Insurance Carrier	[COMPANY]	[PHONE]	[POLICY #]
After-Hours Emergency	[NAME]	[PHONE]	

3. EVACUATION PROCEDURES

3.1 Evacuation Signal

The emergency evacuation signal is:

- [DESCRIBE SIGNAL — e.g., continuous air horn blast for 30 seconds, PA system announcement, etc.]

When you hear the evacuation signal:

1. Stop all work immediately and secure any hazardous operations (shut down equipment, close valves)
2. Alert others in your immediate area who may not have heard the signal
3. Proceed to the nearest designated evacuation route — DO NOT RUN
4. Assist any injured or disabled personnel if safe to do so
5. Report to the designated assembly point for your work area
6. Report to your foreman/supervisor for headcount
7. DO NOT re-enter the site until 'All Clear' is given by the Site Superintendent

3.2 Evacuation Routes

Primary and secondary evacuation routes are posted at:

- Site office / job trailer entrance
- Each floor/level of structures under construction
- Break areas and toolboxes

[Attach or describe site-specific evacuation map showing routes, exits, and assembly points]

3.3 Assembly Points

Area / Zone	Assembly Point Location	Headcount Coordinator
Zone A — [Description]	[LOCATION]	[NAME / TITLE]
Zone B — [Description]	[LOCATION]	[NAME / TITLE]
Zone C — [Description]	[LOCATION]	[NAME / TITLE]
Visitors / Office	[LOCATION]	[NAME / TITLE]

3.4 Headcount Procedures

8. Each foreman/supervisor maintains a daily sign-in sheet for their crew
9. Upon arriving at assembly point, foreman conducts headcount against sign-in sheet
10. Report headcount results to Site Superintendent within 5 minutes
11. If any person is unaccounted for, report immediately — DO NOT re-enter to search
12. Emergency responders will conduct search and rescue for missing persons

4. FIRE EMERGENCY PROCEDURES

4.1 If You Discover a Fire

13. Alert others in the immediate area — shout 'FIRE!'
14. Activate the nearest alarm or notify the Site Superintendent
15. Call 911 (or have someone call while you respond)
16. If the fire is small and you are trained, attempt to extinguish using the nearest appropriate fire extinguisher (PASS method: Pull, Aim, Squeeze, Sweep)
17. If the fire cannot be controlled quickly, evacuate immediately
18. Close doors behind you to slow fire spread if possible
19. Proceed to assembly point and report to your supervisor

4.2 Fire Extinguisher Locations

Fire extinguishers are located at:

- [LIST SPECIFIC LOCATIONS — e.g., site office, each floor, near hot work areas, fuel storage, etc.]

Fire extinguisher inspections are conducted monthly. Annual servicing records are maintained in the site safety file.

4.3 Hot Work

All hot work (welding, cutting, grinding) requires a Hot Work Permit. A fire watch must be maintained during and for 30 minutes after hot work operations. Fire watch personnel must have appropriate extinguishing equipment immediately available.

5. SEVERE WEATHER PROCEDURES

5.1 Tornado / High Wind

When a Tornado Watch is issued:

- Monitor weather conditions and NOAA Weather Radio
- Identify shelter locations and review with all personnel
- Secure loose materials and equipment

When a Tornado Warning is issued or a tornado is sighted:

20. Sound the alarm — [DESCRIBE TORNADO-SPECIFIC SIGNAL]
21. All personnel immediately move to designated shelter areas
22. Shelter in the lowest level of a permanent structure, interior rooms away from windows
23. If no permanent structure is available, lie flat in a low-lying area away from structures, trees, and vehicles
24. DO NOT shelter under bridges, overpasses, or in vehicles
25. Remain in shelter until 'All Clear' is given

5.2 Lightning

When thunder is heard or lightning is observed within 10 miles (30/30 rule):

26. Suspend all outdoor work, especially elevated work (cranes, scaffolding, roofing)
27. Lower crane booms if time permits
28. Move all personnel to enclosed buildings or hard-topped vehicles
29. Wait 30 minutes after last thunder/lightning before resuming work

5.3 Extreme Heat

When the heat index exceeds 90°F, implement the following:

- Provide water, rest, and shade per OSHA's heat illness prevention guidelines
- Schedule heavy work for early morning or late afternoon
- Implement mandatory rest breaks (per OSHA heat index action levels)
- Monitor workers for signs of heat illness (confusion, dizziness, heavy sweating that stops)
- Use buddy system — never allow workers to work alone in extreme heat

6. MEDICAL EMERGENCY PROCEDURES

6.1 Immediate Response

30. Assess the scene — ensure the area is safe for responders
31. Call 911 immediately for serious injuries (provide exact location, nature of injury, number of victims)
32. Do NOT move the injured person unless there is an immediate danger to life
33. Send someone to meet and guide EMS to the exact location on site
34. Apply first aid if trained — control bleeding, maintain airway, treat for shock
35. If cardiac arrest suspected, begin CPR and use AED immediately

6.2 First Aid Kits & AED Locations

First Aid Kit Locations	AED Locations
[Site office / job trailer]	[Site office / job trailer]
[Each floor / work level]	[Nearest permanent structure]
[Break area / tool trailer]	[Additional location]

6.3 Certified First Aid / CPR Personnel

[List names, certification types, and expiration dates of all certified personnel on site]

At least one person with valid First Aid/CPR/AED certification must be present during all work operations.

7. HAZARDOUS MATERIAL SPILL RESPONSE

7.1 Immediate Actions

36. Alert personnel in the immediate area and evacuate upwind/uphill
37. Identify the material if possible (SDS, container labels, placards) — DO NOT taste or smell unknown substances
38. Notify the Site Superintendent and Safety Manager immediately
39. Call 911 if the spill is large, involves unknown chemicals, or threatens public safety
40. If trained and safe to do so, contain the spill using available spill kits (absorbents, berms, etc.)
41. Do NOT attempt to clean up spills you are not trained to handle

7.2 Spill Kit Locations

- [LIST LOCATIONS — e.g., near fuel storage, chemical storage area, each work area with hazardous materials]

7.3 Reporting

All spills must be reported to the Site Superintendent regardless of size. Reportable spills (per EPA/state regulations) must be reported to:

- National Response Center: 1-800-424-8802
- State Environmental Agency: [PHONE]
- [LOCAL REQUIREMENTS]

8. UTILITY EMERGENCY PROCEDURES

8.1 Gas Leak

- 42. Evacuate the area immediately — move upwind at least 500 feet
- 43. DO NOT operate any electrical switches, phones, or equipment in the affected area
- 44. DO NOT start vehicles near the leak
- 45. Call 911 and the gas utility company from a safe distance
- 46. Do NOT re-enter the area until cleared by the gas company and fire department

8.2 Electrical Emergency

- 47. If a power line is contacted or downed, keep everyone at least 35 feet away
- 48. Call 911 and the electric utility company
- 49. If someone is in contact with an energized source, DO NOT touch them
- 50. If a vehicle contacts a power line, occupants should stay inside until the utility company de-energizes
- 51. Shut off power at the source/breaker if it can be done safely

8.3 Water Main Break

- 52. Move personnel away from the area to prevent slips/falls or undermining
- 53. Notify the water utility company
- 54. Shut off water at the nearest valve if accessible and safe
- 55. Protect electrical equipment and panels from water contact

9. COMMUNICATION PROCEDURES

9.1 Alarm Systems

Alarm Type	Signal Description	Meaning / Action
Evacuation	[Continuous air horn — 30 sec]	Evacuate to assembly point
Tornado / Severe Weather	[Three short blasts repeated]	Move to shelter immediately
All Clear	[Single long blast]	Emergency over — resume work
Medical Emergency	[PA announcement / radio]	First aid team respond

9.2 Chain of Command

In an emergency, the chain of command is:

56. Site Superintendent (Incident Commander until emergency services arrive)
57. Safety Manager / Competent Person
58. Project Manager
59. Company Owner / Principal

The Incident Commander is responsible for:

- Directing evacuation and headcount procedures
- Communicating with emergency services
- Authorizing re-entry after 'All Clear'
- Notifying company management and regulatory agencies as required

10. TRAINING REQUIREMENTS

Per 29 CFR 1910.38(e) and 29 CFR 1926.35, training must be provided:

Initial Training (before beginning work on site):

- Review of this Emergency Action Plan
- Location of evacuation routes, exits, and assembly points
- Alarm signals and what they mean
- Location of fire extinguishers, first aid kits, and AEDs
- Emergency contact numbers and reporting procedures
- Individual roles and responsibilities during emergencies

Refresher Training (required when):

- The plan is changed or updated
- Employee responsibilities change
- New hazards are introduced to the site
- Evacuation drills reveal deficiencies

Emergency Drills:

- Evacuation drills conducted at least [QUARTERLY / SEMI-ANNUALLY]
- Drill results documented including response time, headcount accuracy, and corrective actions
- Drill records maintained in site safety file

Training Documentation

Employee Name	Date	Trainer	Signature

11. PLAN REVIEW & MAINTENANCE

This Emergency Action Plan shall be reviewed and updated:

- At least annually by the Safety Manager
- Whenever the workplace layout or design changes
- When new equipment, materials, or processes introduce new hazards
- After any emergency incident or drill that reveals deficiencies
- When employee responsibilities or emergency personnel change
- When regulatory requirements change

Plan Revision History

Rev #	Date	Description of Changes	Approved By
1			
2			
3			
4			
5			

Plan Approval

Prepared By: [Safety Manager Name]

Signature: _____ **Date:** _____

Approved By: [Project Manager / Company Principal]

Signature: _____ **Date:** _____

*Forbes Safety Solutions | Emergency Action Plan Template | Per 29 CFR 1910.38 & 29 CFR 1926.35
This template must be customized with site-specific information before use. Consult your safety professional.*

EXCAVATION & TRENCHING SAFETY PROGRAM

Written Safety Program

[COMPANY NAME]

[Company Address]

[City, State ZIP]

[Phone Number]

Revision Date: [MM/DD/YYYY]

Revision Number: [1.0]

Prepared by Forbes Safety Solutions

Document Control

This document is the property of [COMPANY NAME]. It must be reviewed and updated at least annually or when conditions change.

Revision #	Date	Description of Change	Approved By
1.0	[Date]	Initial Release	[Name/Title]

Table of Contents

Note: Right-click and select "Update Field" to refresh the Table of Contents after editing.

1. Purpose and Scope

1.1 Purpose

The purpose of this Excavation and Trenching Safety Program is to establish the procedures, practices, and responsibilities necessary to protect employees from the hazards associated with excavation and trenching operations. Excavation cave-ins are among the most deadly construction hazards — the weight of soil that collapses can easily exceed thousands of pounds and can bury a worker in seconds.

This written program establishes minimum requirements for excavation and trenching activities performed by or on behalf of [COMPANY NAME] and complies with the requirements of 29 CFR 1926, Subpart P — Excavations.

1.2 Scope

This program applies to all [COMPANY NAME] employees, subcontractors, and temporary workers involved in excavation and trenching operations, including but not limited to:

- Foundation excavations
- Utility trenching (water, sewer, gas, electric, communications)
- Pipe installation and repair
- Basement excavations
- Roadway and infrastructure construction
- Grading operations where workers enter the excavation
- Any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal

This program does NOT apply to excavations made entirely in stable rock or excavations less than 5 feet in depth where examination of the ground by the competent person provides no indication of a potential cave-in (per 29 CFR 1926.652(a)(1)).

1.3 Regulatory References

- 29 CFR 1926.650 – Scope, Application, and Definitions
- 29 CFR 1926.651 – Specific Excavation Requirements
- 29 CFR 1926.652 – Requirements for Protective Systems
- 29 CFR 1926 Subpart P, Appendix A – Soil Classification
- 29 CFR 1926 Subpart P, Appendix B – Sloping and Benching
- 29 CFR 1926 Subpart P, Appendix C – Timber Shoring for Trenches
- 29 CFR 1926 Subpart P, Appendix D – Aluminum Hydraulic Shoring for Trenches
- 29 CFR 1926 Subpart P, Appendix E – Alternatives to Timber Shoring
- 29 CFR 1926 Subpart P, Appendix F – Selection of Protective Systems
- OSHA Publication 2226 – Excavation: Hazard Recognition in Trenching and Shoring

2. Definitions

Benching (Benching System): A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-in: The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. For excavation, the competent person must be trained in soil analysis and protective system selection.

Excavation: Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Hazardous Atmosphere: An atmosphere that by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Protective System: A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching, shield systems, and other systems that provide the necessary protection.

Registered Professional Engineer: A person who is registered as a professional engineer in the state where the work is to be performed.

Shield (Shield System): A structure that is able to withstand the forces imposed on it by a cave-in and thereby protects employees within the structure. Also known as a trench box or trench shield.

Shoring (Shoring System): A structure such as a metal, hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sloping (Sloping System): A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as soil type, environmental conditions of exposure, and application of surcharge loads.

Stable Rock: Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed.

Trench: A narrow excavation (in relation to its length) made below the surface of the ground, generally with a depth greater than its width, but with a width not exceeding 15 feet.

Type A Soil: Cohesive soils with an unconfined compressive strength of 1.5 tsf (tons per square foot) or greater. Examples: clay, silty clay, sandy clay, clay loam. Excludes fissured soil, soil subject to vibration, previously disturbed soil, and soil part of a layered system.

Type B Soil: Cohesive soil with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf. Examples: angular gravel, silt, silt loam, sandy loam, previously disturbed soils except those classified as Type C, fissured cohesive soils, dry rock that is not stable.

Type C Soil: Cohesive soil with an unconfined compressive strength of 0.5 tsf or less. Examples: granular soils (gravel, sand, loamy sand), submerged soil, soil from which water is freely seeping, submerged rock that is not stable.

3. Roles and Responsibilities

3.1 Employer / Management

- Establish, implement, and maintain this Excavation and Trenching Safety Program
- Designate a competent person for each excavation project who has training and experience in soil classification and protective system selection
- Provide all necessary excavation safety equipment (protective systems, monitoring instruments, access/egress equipment) at no cost to employees
- Ensure utility locating services (811) are contacted before any excavation begins
- Ensure all employees involved in excavation operations receive appropriate training
- Investigate all excavation-related incidents and near misses
- Maintain documentation of inspections, soil classifications, and training records
- Conduct annual program reviews and update as necessary

3.2 Competent Person

- Conduct daily inspections of excavations, adjacent areas, and protective systems before each shift, after every rainstorm, and after any event that could increase the hazard (e.g., vibration from nearby construction, heavy equipment movement)
- Classify soils at each excavation site using at least one visual test and one manual test
- Select and design protective systems appropriate for the soil type, depth, and site conditions
- Monitor excavation operations for changing conditions that could affect employee safety
- Determine the need for atmospheric testing in excavations deeper than 4 feet or where hazardous atmospheres may exist
- Authority to immediately remove employees from the excavation when a hazardous condition is detected
- Ensure that means of egress (ladders, ramps, stairs) are provided within 25 feet of lateral travel for all employees in trenches 4 feet or more in depth
- Evaluate adjacent structures, utility locations, and surface conditions before excavation begins
- Document all inspections, soil classifications, and corrective actions

3.3 Supervisors

- Ensure the competent person has inspected the excavation before allowing employees to enter
- Verify that protective systems are installed and functioning properly
- Enforce compliance with this program and all excavation safety requirements
- Ensure employees use proper access/egress routes
- Conduct daily pre-work briefings covering excavation hazards

- Report all incidents, near misses, and changed conditions to the competent person and management
- Ensure spoil piles are placed at least 2 feet from the edge of the excavation
- Keep heavy equipment and surcharge loads away from the excavation edge

3.4 Employees

- Comply with all excavation safety requirements in this program
- Never enter an excavation that has not been inspected by the competent person
- Use only designated access/egress routes (ladders, ramps, stairs)
- Report any signs of cave-in potential, water accumulation, or changing conditions to the competent person or supervisor immediately
- Wear required personal protective equipment at all times in and around excavations
- Keep materials, equipment, and spoil piles at least 2 feet from the edge of the excavation
- Never work under raised loads or operate heavy equipment near the excavation edge without authorization
- Attend and participate in all required excavation safety training
- Immediately evacuate the excavation when ordered to do so

4. Excavation and Trenching Procedures

4.1 Pre-Excavation Planning

Before any excavation begins, the following pre-excavation planning steps shall be completed:

4.1.1 Utility Location

- Contact 811 (the national "Call Before You Dig" service) at least 48 to 72 hours (per state requirements) before any excavation begins
- All known utilities shall be marked by the utility owners before excavation starts
- The exact location of underground installations shall be determined by safe and acceptable means (hand digging, vacuum excavation, or other non-destructive methods) when working within the tolerance zone of marked utilities
- Utility owners/operators shall be contacted for specific guidance when working near high-pressure gas lines, electrical cables, or other critical infrastructure
- If utilities cannot be located with certainty, hand dig or use vacuum excavation methods
- Maintain at least 18 inches clearance from any confirmed underground utility during mechanical excavation
- Document all utility locate requests, locate ticket numbers, and utility markings on the Daily Trench Inspection Form (Appendix A)

4.1.2 Adjacent Structure Assessment

The competent person shall evaluate the stability of adjacent structures (buildings, walls, sidewalks, roadways, and other structures) that may be affected by excavation operations:

- Determine if shoring, bracing, or underpinning is necessary to ensure the stability of adjacent structures
- Monitor adjacent structures for signs of movement, settlement, or cracking throughout excavation operations
- Maintain a safe distance from structures that could be undermined by excavation activities
- Install support systems as necessary to protect adjacent structures from damage or collapse
- Contact a registered professional engineer if there is any doubt about the structural integrity of adjacent features

4.1.3 Surface Water and Drainage

Adequate measures shall be taken to prevent surface water from entering the excavation:

- Divert surface water drainage away from the excavation using berms, ditches, or other effective means
- Install dewatering pumps if water accumulation occurs within the excavation

- Employees shall not work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken
- If water removal equipment is used, it shall be monitored by the competent person to ensure proper operation
- Inspect for evidence of a situation that could result in a boiling condition, surface water runoff, or water buildup in the excavation

4.2 Soil Classification

The competent person shall classify the soil at each excavation site to determine the appropriate protective system. Soil classification shall be performed using at least one visual test and one manual test.

4.2.1 Soil Types

Soil Type	Unconfined Compressive Strength	Examples	Maximum Slope Angle
Type A	1.5 tsf or greater	Clay, silty clay, sandy clay, clay loam, and hardpan (cemented soils)	¾:1 (53°)
Type B	0.5 to 1.5 tsf	Angular gravel, silt, silt loam, sandy loam, previously disturbed Type A soils, fissured cohesive soils, dry unstable rock	1:1 (45°)
Type C	0.5 tsf or less	Gravel, sand, loamy sand, submerged soil, soil from which water is freely seeping, submerged unstable rock	1½:1 (34°)
Stable Rock	N/A	Natural solid mineral material that can be excavated with vertical sides and remain intact	Vertical (90°)

4.2.2 Visual Tests

The competent person shall perform the following visual tests:

- Observe the excavated soil for grain size, particle type (granular vs. cohesive), and signs of moisture
- Examine the excavation walls for cracks, spalling, raveling, or other signs of instability
- Look for layered soil systems where one soil type overlies another
- Check for previously disturbed soil (e.g., previous excavation backfill, utility trenches)
- Observe whether the soil clumps when dug or easily breaks apart
- Assess the presence of water seepage, a high water table, or standing water in the excavation
- Look for evidence of vibration from traffic, construction equipment, or other sources
- Observe the type of soil in the spoil pile (does it hold together or crumble?)

4.2.3 Manual Tests

At least one of the following manual tests shall be performed:

- Pocket Penetrometer Test — A direct-reading instrument that measures the unconfined compressive strength of the soil. Type A: ≥ 1.5 tsf; Type B: 0.5–1.5 tsf; Type C: < 0.5 tsf.
- Thumb Penetration Test — Press your thumb into the soil sample. If the thumb penetrates no further than the thumbnail, the soil may be Type A. If the thumb penetrates the full length with moderate effort, the soil may be Type B. If the thumb penetrates easily, the soil is Type C.
- Dry Strength Test — Dry a sample until completely dry. If it crumbles on its own or with moderate pressure, it is granular (Type C). If it breaks into clumps that can only be broken with difficulty, it may be clay combined with other soils (Type A or B).
- Plasticity (Ribbon) Test — Mold a moist sample into a ball and roll it into a thread. If a 2-inch thread can be held on one end without tearing, the soil is cohesive (Type A or B). If it fails, it is granular (Type C).
- Shear Vane Test — A direct-reading device that measures the shear strength of soil, which can be correlated to unconfined compressive strength.

Document all soil classification results on the Soil Classification Worksheet (Appendix B). When in doubt, classify the soil as the weaker type.

4.3 Protective Systems

Employees shall NOT enter excavations 5 feet or more in depth unless a protective system is in place (unless the excavation is made entirely in stable rock). For excavations less than 5 feet, a protective system is required if the competent person identifies a potential for cave-in.

4.3.1 Sloping

Sloping involves cutting the sides of the excavation at an angle away from the excavation to prevent cave-ins. Maximum allowable slopes:

- Type A Soil: $\frac{3}{4}$:1 (horizontal to vertical) — 53 degrees from horizontal
- Type B Soil: 1:1 — 45 degrees from horizontal
- Type C Soil: $1\frac{1}{2}$:1 — 34 degrees from horizontal
- Stable Rock: Vertical (90 degrees)
- For excavations 20 feet or deeper, sloping and benching designs must be approved by a registered professional engineer
- Short-term exposure (24 hours or less) in Type A soil: Maximum slope of $\frac{1}{2}$:1 (63 degrees) is permitted for excavations 12 feet or less in depth

4.3.2 Benching

Benching creates a series of horizontal steps in the excavation wall. Benching is NOT permitted in Type C soil.

- Type A Soil: Maximum bench height of 4 feet. Simple or multiple bench configuration permitted.
- Type B Soil: Maximum bench height of 4 feet. Steps must be below the maximum slope angle (1:1).
- Type C Soil: Benching is NOT allowed due to soil instability.
- The first bench must begin at the excavation floor level.
- Benching designs for excavations over 20 feet must be prepared by a registered professional engineer.

4.3.3 Shoring

Shoring systems support the excavation walls and prevent cave-in. Common shoring systems include:

- Timber Shoring — Installed per OSHA Subpart P, Appendix C. Includes wales, cross braces, and uprights.
- Aluminum Hydraulic Shoring — Lightweight, adjustable systems installed per OSHA Subpart P, Appendix D. Must be installed per manufacturer's tabulated data.
- Screw Jack Shoring — Adjustable metal systems that can be used with timber or metal sheeting.
- All shoring must be installed from the top down and removed from the bottom up.
- Shoring must be designed for the specific soil conditions and depth of excavation.
- Employees shall not be permitted in the excavation while shoring is being installed or removed unless protected by another system.
- Manufacturer's tabulated data must be on-site for all manufactured shoring systems.

4.3.4 Shielding (Trench Boxes)

Trench shields (trench boxes) are portable structures placed inside the excavation to protect workers from cave-ins:

- Trench shields shall be certified by the manufacturer for the specific depth and soil type
- Manufacturer's tabulated data (maximum depth, soil type, dimensions) must be available on-site
- Shields shall extend at least 18 inches above the surrounding surface or the excavation shall be sloped back from the top of the shield at an angle not steeper than 1½:1
- Workers shall not remain in the shield during installation, removal, or vertical movement of the shield
- Backfill shall be placed evenly on both sides to prevent the shield from tipping
- Shields shall be inspected before each use for damage, deformation, and proper operation of spreader bars or hydraulic cylinders
- Multiple shields may be stacked for deeper excavations if designed for that purpose by the manufacturer
- Lateral movement of shields is permitted if the support provided is continuous

4.4 Access and Egress

Safe means of access and egress shall be provided for all excavations 4 feet or more in depth:

- Structural ramps used as access/egress must be designed by a competent person qualified in structural design, or by a registered professional engineer if used by vehicles
- Ladders, stairways, or ramps shall be located within 25 feet of lateral travel for all employees in the excavation
- Ladders shall extend at least 3 feet above the edge of the excavation and be secured to prevent displacement
- Ramps and runways shall be constructed of non-slip materials or treated surfaces
- Employees shall not use heavy equipment (bucket, boom, etc.) as a means of access or egress
- Access/egress points shall be kept clear of materials, equipment, and debris at all times
- The competent person shall evaluate and approve all access/egress routes before employees enter the excavation

4.5 Atmospheric Testing

Atmospheric testing shall be performed in excavations where hazardous atmospheres may exist or may reasonably be expected to develop:

- Excavations deeper than 4 feet where the possibility of an oxygen deficiency or a hazardous atmosphere exists shall be tested before employees enter
- Excavations in areas where hazardous substances have been stored, where landfill operations have occurred, or near petroleum facilities, gas lines, or chemical plants require atmospheric testing regardless of depth
- Testing shall include oxygen content (19.5%–23.5%), combustible gases (<10% LEL), and toxic gases (H_2S <10 ppm, CO <25 ppm) as appropriate
- If a hazardous atmosphere is detected, emergency rescue equipment (SCBA) shall be readily available
- Ventilation shall be provided as necessary to maintain safe atmospheric conditions
- Continuous monitoring is required when atmospheric conditions may change due to work activities or environmental factors
- Employees shall be removed from the excavation immediately if atmospheric testing reveals hazardous conditions

4.6 Hazard Prevention

4.6.1 Spoil Pile Management

- All excavated material (spoil) shall be placed at least 2 feet from the edge of the excavation, measured from the nearest edge of the spoil pile to the edge of the excavation

- Spoil piles shall be contained or retained as necessary to prevent materials from falling into the excavation
- Spoil shall not be stored on the downhill side of the excavation where it could wash into the trench
- Rock, soil, or other materials shall be effectively retained or restrained to prevent them from falling or rolling into the excavation

4.6.2 Mobile Equipment

- When mobile equipment is operated adjacent to an excavation, a warning system shall be utilized (barricades, hand/mechanical signals, stop logs, or grade-level berms)
- Equipment shall not be permitted to operate closer to the edge of an excavation than the depth of the excavation, unless the excavation is supported or shored
- Employees shall not work under loads being handled by lifting or digging equipment
- Employees shall stand away from vehicles being loaded or unloaded to avoid being struck by any spillage or falling materials

4.6.3 Water Accumulation Hazards

- Employees shall not work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken to protect employees (water removal, safety harnesses and lifelines, or other means)
- The competent person shall monitor water removal equipment and the operations throughout the work shift
- If water is controlled or prevented from accumulating by the use of water removal equipment, the operation shall be monitored by the competent person
- Diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation

4.6.4 Falling Load Protection

- No employee shall be permitted underneath loads handled by lifting or digging equipment
- Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by spillage or falling materials
- When overhead operations or falling hazards exist, employees working in the excavation shall wear hard hats
- Barricades, barriers, or physical separation shall be used to protect workers in excavations from vehicular traffic

5. Inspection Requirements

5.1 Daily Inspections

The competent person shall inspect the excavation, adjacent areas, and protective systems at the following intervals:

- Before the start of each work shift
- After every rainstorm or other hazard-increasing occurrence (flooding, vibration from nearby blasting or heavy equipment, etc.)
- As conditions change throughout the work shift
- When fissures, seepage, undermining, bulging at the bottom, or other signs of instability occur

If the competent person identifies evidence of a situation that could result in a cave-in, exposure to a hazardous atmosphere, or other hazardous condition, all exposed employees shall be removed from the hazardous area until the necessary precautions have been taken.

5.2 Inspection Checklist Items

The following items shall be evaluated during each inspection (use the Daily Trench Inspection Form — Appendix A):

- Condition of excavation walls (cracks, spalling, bulging, sloughing, raveling)
- Condition and adequacy of protective systems (shoring tight, shields level, slopes correct)
- Water accumulation or seepage
- Condition of spoil piles (placement, retention, distance from edge)
- Access/egress availability and condition (ladder within 25 feet, extending 3 feet above edge)
- Underground utility exposure or proximity
- Adjacent structure stability
- Surface conditions and drainage adequacy
- Equipment placement relative to the excavation edge
- Employee compliance with safety requirements
- Atmospheric conditions (if applicable)
- Barricades and warning systems for pedestrian and vehicular traffic

6. Training Requirements

6.1 Competent Person Training

Competent persons shall receive comprehensive training in:

- OSHA Subpart P — Excavations (29 CFR 1926.650–652) and all Appendices
- Soil classification methods (visual and manual testing)
- Protective system selection and design (sloping, benching, shoring, shielding)
- Excavation hazard recognition and abatement
- Atmospheric testing procedures and equipment operation
- Emergency response and rescue procedures
- Utility damage prevention and 811 procedures
- Inspection documentation requirements

6.2 Employee Training

All employees who work in or around excavations shall receive training in:

- Recognition and avoidance of excavation hazards (cave-in, falling materials, hazardous atmospheres, water accumulation, utilities)
- Understanding of protective systems and their limitations
- Proper use of access/egress equipment (ladders, ramps, stairs)
- Safe work practices in and around excavations
- Spoil pile placement and material handling near excavations
- Emergency procedures and evacuation routes
- Personal protective equipment requirements (hard hats, high-visibility vests, etc.)
- Authority and duty to refuse to enter an unsafe excavation
- Incident and near-miss reporting procedures

6.3 Retraining

Retraining shall be provided when:

- Changes in site conditions or excavation methods require new knowledge or skills
- An employee demonstrates inadequate knowledge of excavation safety procedures
- After any excavation-related incident or near miss
- When new equipment or protective systems are introduced
- At minimum, annual refresher training shall be provided

6.4 Training Documentation

Training records shall include: employee name and signature, date(s) of training, trainer name and qualifications, topics covered, and duration. Records shall be maintained for the duration of employment plus three years. Use the Training Sign-Off Sheet (Appendix D) to document each session.

7. Documentation and Recordkeeping

[COMPANY NAME] shall maintain the following records:

Record Type	Retention Period	Responsible Party
Daily Trench Inspection Forms	Duration of project + 3 years	Competent Person
Soil Classification Worksheets	Duration of project + 3 years	Competent Person
Utility Locate Tickets/Records	Duration of project + 1 year	Project Manager
Competent Person Designation Records	Duration of assignment + 1 year	Management
Training Records	Duration of employment + 3 years	Safety Manager
Incident/Near Miss Reports	5 years minimum	Safety Manager
Program Audit Reports	5 years minimum	Management
Manufacturer's Tabulated Data (Shoring/Shields)	Duration of equipment use	Competent Person
PE-Designed Protective Systems (if applicable)	Duration of project + 3 years	Project Manager

All records shall be readily accessible for review by OSHA compliance officers, employees, and their designated representatives.

Appendix A: Daily Trench Inspection Form

Field	Information
Project Name/Number:	[]
Location/Address:	[]
Date:	[] Weather Conditions: []
Competent Person:	[]
Excavation Depth:	[] ft Length: [] ft Width: [] ft
Soil Classification:	☐ Type A ☐ Type B ☐ Type C ☐ Stable Rock ☐ Layered
Protective System:	☐ Sloping ☐ Benching ☐ Shoring ☐ Shielding ☐ Other: _____

Inspection Checklist

#	Inspection Item	Yes	No	N/A	Comments
1	811 utility locates completed and documented?				
2	All utilities identified, marked, and protected?				
3	Excavation walls stable — no cracks, bulging, or sloughing?				
4	Protective system installed and in good condition?				
5	Spoil pile at least 2 feet from excavation edge?				
6	Ladder/ramp within 25 feet of lateral travel?				
7	Ladder extends 3 feet above the excavation edge?				
8	No water accumulation in excavation?				
9	Surface water diverted from excavation?				
10	Adjacent structures stable and not undermined?				
11	Equipment positioned at safe distance from edge?				
12	Barricades/warning systems in place for traffic?				
13	Atmospheric testing performed (if required)?				
14	Atmospheric readings within acceptable limits?				
15	Hard hats and PPE being worn by all workers?				
16	Workers using designated access/egress routes?				
17	No loads being raised/lowered over workers?				
18	Manufacturer's tabulated data on-site (if applicable)?				

Deficiencies Noted / Corrective Actions Taken

Description of Deficiency	Corrective Action Taken	Completed By	Time

Atmospheric Test Results (if applicable)

Time	O ₂ (%)	LEL (%)	H ₂ S (ppm)	CO (ppm)	Tester Initials

Competent Person Signature: _____ Date: _____

Reviewed By (Supervisor): _____ Date: _____

Appendix B: Soil Classification Worksheet

Field	Information
Project Name/Number:	[]
Location:	[]
Date:	[]
Competent Person:	[]
Excavation Depth:	[]
Sample Location/Depth:	[]

Visual Tests Performed

Visual Test	Observations	Result
Soil particle size and type (granular vs. cohesive)		
Presence of fissures or cracks in walls		
Layered soil systems		
Previously disturbed soil		
Water seepage or standing water		
Evidence of vibration effects		
Soil clumping behavior in spoil pile		
Spalling, raveling, or sloughing of walls		

Manual Tests Performed

Manual Test	Method/Reading	Result
Pocket Penetrometer	Reading: _____ tsf	Type: _____
Thumb Penetration Test	Depth of penetration: _____	Type: _____
Dry Strength Test	Crumbles / Breaks with difficulty	Type: _____
Plasticity (Ribbon) Test	Thread length before breaking: _____	Type: _____
Shear Vane Test	Reading: _____ tsf	Type: _____

Classification Determination

Field	Information
Final Soil Classification:	☐ Type A ☐ Type B ☐ Type C ☐ Stable Rock
Layered System:	☐ Yes ☐ No If yes, describe: []
Classification Basis:	[]
Factors Downgrading Classification:	☐ Fissured ☐ Vibration ☐ Previously Disturbed ☐ Submerged ☐ Seepage ☐ Layered

Protective System Selected

Field	Information
Selected System:	☐ Sloping (Angle: _____) ☐ Benching ☐ Shoring ☐ Shield/Trench Box
System Details:	[]
PE Design Required:	☐ Yes ☐ No PE Name: []

Competent Person Signature: _____ Date: _____

Appendix C: Competent Person Designation Form

[COMPANY NAME] hereby designates the following individual as a Competent Person for excavation and trenching operations in accordance with 29 CFR 1926.650–652:

Field	Information
Employee Name:	[]
Employee Title:	[]
Employee ID/SSN Last 4:	[]
Date of Designation:	[]
Designation Valid Through:	[]

Qualifications and Training

Training/Qualification	Provider	Date Completed	Certification #
OSHA Excavation Safety (Subpart P)			
Soil Classification Training			
OSHA 30-Hour Construction			
Competent Person Course — Excavation			
First Aid / CPR			

Experience

Description of Relevant Experience	Duration	Employer/Project

Authorization

As a designated Competent Person, the individual named above has the training, knowledge, and authority to:

- Classify soil types using visual and manual testing methods
- Select, design, and inspect protective systems for excavations
- Conduct daily inspections of excavations, protective systems, and adjacent areas
- Identify existing and predictable excavation hazards
- Authorize employees to enter excavations
- Order immediate evacuation of excavations when hazardous conditions exist
- Take prompt corrective measures to eliminate identified hazards

Designated By (Management): _____ Title: _____

Signature: _____ Date: _____

Employee Acknowledgment: _____ Date: _____

Appendix D: Training Sign-Off Sheet

Field	Information
Training Topic:	Excavation & Trenching Safety Program
Training Date:	[]
Training Location:	[]
Trainer Name:	[]
Trainer Qualifications:	[]
Training Duration:	[]

Topics Covered

- ☐ Excavation hazard recognition (cave-in, utilities, water, atmosphere)
- ☐ Soil classification methods and types (A, B, C, Stable Rock)
- ☐ Protective systems (sloping, benching, shoring, shielding)
- ☐ Access and egress requirements (ladders within 25 feet)
- ☐ Utility locating procedures and 811 requirements
- ☐ Spoil pile placement (minimum 2 feet from edge)
- ☐ Water accumulation hazards and controls
- ☐ Atmospheric testing requirements (excavations >4 feet depth)
- ☐ Daily inspection requirements and competent person duties
- ☐ Emergency procedures and evacuation
- ☐ Applicable OSHA standards (29 CFR 1926.650–652)

Employee Acknowledgment

By signing below, I acknowledge that I have received training in the above topics, understand the material presented, had the opportunity to ask questions, and agree to comply with the excavation and trenching safety requirements of [COMPANY NAME].

#	Employee Name (Print)	Employee Signature	Date	Company/Trade

Trainer Signature: _____ Date: _____

FALL PROTECTION PROGRAM

Written Safety Program

[COMPANY NAME]

[Company Address]

[City, State ZIP]

[Phone Number]

Revision Date: [MM/DD/YYYY]

Revision Number: [1.0]

Prepared by Forbes Safety Solutions

Document Control

This document is the property of [COMPANY NAME]. It must be reviewed and updated at least annually or when conditions change.

Revision #	Date	Description of Change	Approved By
1.0	[Date]	Initial Release	[Name/Title]

Table of Contents

Note: Right-click and select "Update Field" to refresh the Table of Contents after editing this document.

1. Purpose and Scope

1.1 Purpose

The purpose of this Fall Protection Program is to establish the policies, procedures, and practices that [COMPANY NAME] will implement to protect employees from fall hazards. This program provides a systematic approach to identifying fall hazards, selecting appropriate fall protection methods, and ensuring all employees are properly trained and equipped to work safely at heights.

This written program fulfills the requirements of OSHA standards for employers to develop and implement a fall protection plan when employees are exposed to fall hazards of 6 feet or more in construction (29 CFR 1926.502) or 4 feet or more in general industry (29 CFR 1910.28).

1.2 Scope

This program applies to all [COMPANY NAME] employees, subcontractors, and temporary workers who are exposed to fall hazards during the course of their work. This includes, but is not limited to, work performed on:

- Unprotected sides and edges 6 feet (construction) or 4 feet (general industry) or more above a lower level
- Leading edges
- Hoist areas
- Holes (including skylights)
- Formwork and reinforcing steel
- Ramps, runways, and other walkways
- Excavations
- Dangerous equipment
- Overhand bricklaying and related work
- Roofing work (both low-slope and steep-slope)
- Precast concrete erection
- Wall openings
- Residential construction activities

1.3 Regulatory References

- 29 CFR 1926.500 – Scope, Application, and Definitions (Construction)
- 29 CFR 1926.501 – Duty to Have Fall Protection (Construction)
- 29 CFR 1926.502 – Fall Protection Systems Criteria and Practices (Construction)
- 29 CFR 1926.503 – Training Requirements (Construction)
- 29 CFR 1910.28 – Duty to Have Fall Protection (General Industry)

- 29 CFR 1910.29 – Fall Protection Systems and Falling Object Protection Criteria (General Industry)
- 29 CFR 1910.30 – Training Requirements (General Industry)
- ANSI Z359.1 – Safety Requirements for Personal Fall Arrest Systems
- ANSI Z359.2 – Minimum Requirements for a Comprehensive Managed Fall Protection Program
- ANSI Z359.6 – Specifications and Design Requirements for Active Fall Protection Systems

2. Definitions

Anchorage: A secure point of attachment for lifelines, lanyards, or deceleration devices. Must be capable of supporting at least 5,000 pounds per employee attached, or designed, installed, and used as part of a complete PFAS maintaining a safety factor of at least two, under the supervision of a qualified person.

Competent Person: One who is capable of identifying existing and predictable fall hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Controlled Access Zone (CAZ): An area in which certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and access to the zone is controlled.

Deceleration Device: Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifeline/lanyard, that serves to dissipate energy during a fall arrest.

Guardrail System: A barrier erected to prevent employees from falling to lower levels. Consists of top rail (42 inches $\pm$ 3 inches), mid rail, and toeboards where required.

Hole: A gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.

Lanyard: A flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Leading Edge: The edge of a floor, roof, or formwork for a floor or other walking/working surface that changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed.

Personal Fall Arrest System (PFAS): A system used to arrest an employee in a fall from a working level. Consists of an anchorage, connectors, body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Qualified Person: A person with a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter.

Safety Net System: A system of nets and hardware installed below a walking/working surface to catch employees who fall.

Self-Retracting Lifeline/Lanyard (SRL): A deceleration device that contains a drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Warning Line System: A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems.

3. Roles and Responsibilities

3.1 Employer / Management

- Establish, implement, and maintain this Fall Protection Program
- Provide all necessary fall protection equipment at no cost to employees
- Designate a competent person for each work site where fall hazards exist
- Ensure all employees receive initial and refresher training on fall protection
- Conduct periodic program audits to evaluate effectiveness
- Investigate all fall-related incidents and near misses
- Ensure subcontractors comply with this program when working on company-controlled sites
- Allocate adequate resources for fall protection equipment, training, and rescue capabilities
- Maintain documentation of training records, inspections, and incident reports

3.2 Competent Person

- Conduct fall hazard assessments and surveys before work begins at each job site
- Select appropriate fall protection methods for each task and location
- Identify and evaluate anchorage points to ensure they meet the 5,000 lb. requirement
- Inspect all fall protection equipment prior to each use and remove defective equipment from service
- Monitor work operations to ensure compliance with this program
- Authorize employees to enter controlled access zones
- Stop work immediately when imminent fall hazards are identified
- Ensure that a site-specific rescue plan is in place before any work at heights begins
- Document hazard surveys, inspections, and corrective actions

3.3 Supervisors

- Enforce compliance with this Fall Protection Program at all times
- Ensure employees under their supervision are trained before performing work at heights
- Verify that appropriate fall protection equipment is available and being used correctly
- Conduct daily pre-work safety briefings that include fall hazard awareness
- Report all fall-related incidents, near misses, and equipment deficiencies immediately
- Coordinate with the competent person on fall protection requirements for each task
- Ensure rescue equipment and trained rescuers are available before elevated work begins

3.4 Employees

- Comply with all fall protection requirements established by this program
- Properly use and care for all fall protection equipment as trained
- Inspect personal fall protection equipment before each use and report any defects
- Report fall hazards, unsafe conditions, and equipment damage to their supervisor immediately
- Attend and actively participate in all required fall protection training
- Never alter, misuse, or remove fall protection equipment or systems
- Understand and follow the site-specific rescue plan
- Refuse to perform work at heights if proper fall protection is not in place

4. Fall Protection Procedures

4.1 Fall Hazard Survey

Before work begins at any job site, the competent person shall conduct a comprehensive fall hazard survey to identify all areas where employees may be exposed to fall hazards. The survey shall:

- Identify all locations where employees will be working at heights of 6 feet or more above a lower level (construction) or 4 feet or more (general industry)
- Document the specific fall hazards present at each location (unprotected edges, holes, skylights, leading edges, etc.)
- Determine the appropriate fall protection method for each identified hazard
- Identify suitable anchorage points and evaluate their load-bearing capacity
- Assess environmental factors that may affect fall protection (wind, weather, temperature, lighting)
- Evaluate access and egress routes to elevated work areas
- Identify potential falling object hazards to workers below
- Document the survey results on the Fall Hazard Survey Form (Appendix A)

The fall hazard survey shall be updated whenever site conditions change, new work activities begin, or the competent person identifies previously unrecognized hazards.

4.2 Fall Protection Methods

4.2.1 Guardrail Systems

Guardrail systems are the preferred method of fall protection and shall be used wherever feasible.

Guardrail systems shall meet the following requirements:

- Top rail height shall be 42 inches (± 3 inches) above the walking/working level
- Mid rails shall be installed midway between the top rail and the walking/working surface
- Guardrails shall be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction
- Mid rails shall withstand a force of at least 150 pounds in any outward or downward direction
- The surface of the top rail shall be smooth to prevent punctures, lacerations, or snagging of clothing
- Toeboards shall be installed when materials or tools could fall on workers below (minimum 3.5 inches tall)
- Openings in guardrail systems shall not allow passage of a sphere larger than 19 inches in diameter
- Wire rope used as a top rail shall be flagged with high-visibility material at intervals not exceeding 6 feet

4.2.2 Personal Fall Arrest Systems (PFAS)

When guardrail systems are not feasible, personal fall arrest systems shall be used. All PFAS components shall meet ANSI Z359 standards and shall include:

- Full-body harness (body belts are NOT permitted for fall arrest)
- Connecting device: shock-absorbing lanyard, self-retracting lifeline (SRL), or rope grab with lifeline
- Anchorage point capable of supporting at least 5,000 pounds per attached employee
- Total fall distance must be calculated and documented to ensure adequate clearance below the worker (free fall distance shall not exceed 6 feet)
- The system must bring the employee to a complete stop and limit the maximum deceleration distance to 3.5 feet
- The maximum arresting force on an employee shall not exceed 1,800 pounds when using a body harness
- Employees must be able to be rescued or rescue themselves within 6 minutes of a fall arrest to prevent suspension trauma

4.2.3 Safety Net Systems

Safety net systems may be used where other methods are not practical. Safety nets shall:

- Be installed as close as practical beneath the walking/working surface, but no more than 30 feet below
- Extend outward from the outermost projection of the work surface (8 feet for up to 5 feet of fall, 10 feet for 5-10 feet, 13 feet for more than 10 feet)
- Be drop-tested or certified by a qualified person after installation and before use
- Have mesh openings no larger than 6 inches by 6 inches
- Be inspected at least weekly for wear, damage, and other deterioration
- Have all objects that have fallen into the net removed as soon as possible

4.2.4 Hole Covers

All holes on walking/working surfaces shall be covered or protected by guardrails. Hole covers shall:

- Be capable of supporting at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time
- Be secured to prevent accidental displacement by wind, equipment, or workers
- Be clearly marked with the word "HOLE" or "COVER" to provide warning of the hazard
- Be color coded or otherwise identified as hole covers where marking is not practical

4.2.5 Controlled Access Zones

Controlled access zones may be established for certain operations (leading edge work, overhand bricklaying, precast concrete erection) as an alternative fall protection method. Controlled access zones shall:

- Be defined by a control line erected not less than 6 feet and not more than 25 feet from the unprotected edge
- Be marked with control lines consisting of ropes, wires, or tapes, flagged at 6-foot intervals, supported at a height of 39 to 45 inches
- Restrict access to only those employees actively engaged in the specific work operation
- Be supervised by the competent person at all times when in use
- Never be used as a substitute for conventional fall protection where such protection is feasible

4.2.6 Warning Line Systems

Warning line systems may be used on low-slope roofs (4:12 or less) and shall meet the following criteria:

- Erected around all sides of the roof work area not less than 6 feet from the roof edge
- Made of rope, wire, or chain flagged with high-visibility material at intervals not exceeding 6 feet
- Rigged so that the lowest point (including sag) is at least 34 inches and the highest point is no more than 39 inches from the roof surface
- Stanchions capable of resisting a force of at least 16 pounds without tipping over
- Must be used in conjunction with a safety monitor or other fall protection for work within the warning line area

4.3 Anchorage Requirements

Anchorage points are critical to the effectiveness of personal fall arrest systems. The following requirements apply:

- Anchorages for PFAS shall be capable of supporting at least 5,000 pounds per employee attached, or be designed, installed, and used under the supervision of a qualified person as part of a complete system maintaining a safety factor of at least two
- Anchorages for positioning device systems shall be capable of supporting at least twice the potential impact load or 3,000 pounds, whichever is greater
- Anchorages shall be independent of any anchorage used to support or suspend platforms
- The competent person shall evaluate and approve all anchorage points before use
- Manufactured anchorage devices shall be installed according to the manufacturer's instructions
- Structural steel members, concrete inserts, and other structural elements may serve as anchorage points when evaluated by a qualified person

- Cross-arm straps, beam clamps, and other temporary anchorage connectors shall be inspected before each use
- Anchorage points shall be located above the D-ring attachment point on the harness whenever possible to minimize free fall distance

4.4 Equipment Inspection

All fall protection equipment shall be inspected in accordance with the following schedule:

4.4.1 Pre-Use Inspection (Before Each Use)

Every employee shall inspect their personal fall protection equipment before each use. At a minimum, the following checks shall be performed:

Equipment	Inspection Points
Full-Body Harness	Check webbing for cuts, burns, fraying, abrasion, chemical damage, or excessive wear. Inspect all buckles, D-rings, and grommets for cracks, distortion, or corrosion. Verify all labels and markings are legible. Ensure proper fit and adjustment.
Shock-Absorbing Lanyard	Inspect webbing/rope for cuts, burns, fraying, or damage. Check snap hooks for gate closure, locking mechanism, and distortion. Verify shock absorber has not been deployed (pack should be intact). Check stitching for pulled or cut threads.
Self-Retracting Lifeline (SRL)	Test retraction and locking mechanism. Inspect housing for cracks or damage. Check cable/webbing for cuts, kinks, or corrosion. Verify snap hook operates properly. Ensure inspection tag/label is current.
Rope Grab / Vertical Lifeline	Inspect rope for fraying, cuts, or abrasion. Check rope grab for proper operation and locking. Verify compatibility between rope grab and lifeline diameter. Inspect termination hardware.
Anchorage Connectors	Inspect cross-arm straps, beam clamps, or other connectors for deformation, cracks, or wear. Verify proper engagement and load rating.

4.4.2 Periodic Formal Inspection

The competent person shall conduct formal documented inspections of all fall protection equipment at least every six (6) months, or more frequently as specified by the manufacturer. Use the Harness Inspection Checklist (Appendix B) for documentation.

4.4.3 Equipment Removal from Service

Fall protection equipment shall be immediately removed from service and destroyed or tagged "Out of Service" when:

- The equipment has been subjected to impact forces during a fall arrest event
- The equipment shows signs of damage, excessive wear, or deterioration during inspection
- The equipment has been exposed to chemicals, extreme heat, or other conditions that may compromise its integrity
- The equipment has reached its manufacturer's recommended service life

- Any component fails to operate as designed during inspection or testing
- Labels or markings are missing or illegible, preventing identification of the manufacturer, model, or date of manufacture

4.5 Rescue Planning

A rescue plan shall be developed and in place before any work at heights begins. Prompt rescue is essential to prevent suspension trauma (harness hang syndrome), which can become life-threatening within minutes of a fall arrest event.

4.5.1 Rescue Requirements

- Rescue of a fallen worker must be accomplished within six (6) minutes of the fall arrest
- Self-rescue methods shall be provided where feasible (trauma relief straps, self-rescue devices)
- Non-entry rescue methods are preferred over entry rescue methods where possible
- The rescue plan shall identify the rescue method(s), equipment, and trained personnel for each work location
- Rescue equipment shall be readily available at the work site (rescue retrieval systems, ladders, aerial lifts, etc.)
- At least two employees at each work site shall be trained in fall rescue procedures
- Emergency services (911) shall be identified as a backup rescue resource, but shall not be the primary rescue plan
- Rescue drills shall be conducted at least annually to verify the effectiveness of the plan

4.5.2 Suspension Trauma Prevention

All employees who use personal fall arrest systems shall be trained to recognize the symptoms of suspension trauma and the following preventive measures:

- Trauma suspension straps shall be attached to all full-body harnesses
- Employees shall be trained to use leg straps to maintain blood circulation if suspended
- Employees shall try to maintain leg movement and push against any available surface
- Rescued employees who have been suspended shall be placed in a seated or reclined position — never lay flat immediately, as sudden blood redistribution can cause cardiac arrest
- Medical evaluation shall be obtained for any employee who has been suspended in a harness for any period of time

5. Training Requirements

5.1 Initial Training

[COMPANY NAME] shall provide training for each employee who might be exposed to fall hazards. Training shall be provided by a competent person qualified in the following areas and shall enable each employee to recognize the hazards of falling and the procedures to follow to minimize those hazards.

Training shall cover, at a minimum:

- The nature of fall hazards in the work area
- The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection
- The role of employees in the fall protection plan and this program
- OSHA standards applicable to fall protection (29 CFR 1926.500-503, 29 CFR 1910.28-30)
- The limitations of each fall protection system
- Proper fitting and use of full-body harnesses
- Equipment inspection procedures (pre-use and formal)
- Fall distance calculations and swing-fall hazards
- Anchorage point selection and evaluation
- Rescue procedures and suspension trauma awareness
- Incident and near-miss reporting procedures

5.2 Retraining

Retraining shall be provided when:

- Changes in the workplace render previous training obsolete
- Changes in the types of fall protection systems or equipment being used
- Inadequacies in an affected employee's knowledge or use of fall protection systems indicate that the employee has not retained the requisite understanding or skill
- An employee is observed failing to comply with fall protection requirements
- After any fall-related incident or near miss involving the employee
- At minimum, annual refresher training shall be provided to all employees exposed to fall hazards

5.3 Training Documentation

Training records shall be maintained and include:

- Name and signature of each employee trained
- Date(s) of training
- Name and qualifications of the trainer(s)
- Subject matter and duration of training
- Type of fall protection systems covered
- Verification that employees demonstrated competency in equipment use and inspection

Training records shall be maintained for the duration of employment and shall be made available upon request. Use the Training Sign-Off Sheet (Appendix D) to document training sessions.

6. Inspection and Audit Procedures

6.1 Ongoing Site Inspections

The competent person shall conduct daily inspections of all fall protection systems in use, including:

- Visual inspection of guardrail systems for damage, missing components, or displacement
- Verification that hole covers are in place, secured, and properly marked
- Inspection of PFAS anchorage points for integrity
- Review of controlled access zone and warning line system configurations
- Observation of employee compliance with fall protection requirements
- Assessment of changing site conditions that may introduce new fall hazards

6.2 Program Audit

[COMPANY NAME] shall conduct a formal audit of this Fall Protection Program at least annually. The audit shall evaluate:

- Effectiveness of fall protection measures in preventing falls and fall-related injuries
- Compliance with OSHA standards and this written program
- Adequacy of training programs and employee competency
- Condition and availability of fall protection equipment
- Completeness and accuracy of documentation and recordkeeping
- Effectiveness of rescue plans and rescue drill results
- Investigation and corrective action follow-up for fall-related incidents
- Employee feedback and suggestions for program improvement

Audit findings shall be documented and corrective actions shall be tracked to completion. Management shall review audit results and authorize necessary changes to this program.

7. Documentation and Recordkeeping

[COMPANY NAME] shall maintain the following records related to this Fall Protection Program:

Record Type	Retention Period	Responsible Party
Fall Hazard Survey Forms	Duration of project + 3 years	Competent Person
Equipment Inspection Records	Duration of equipment service life + 1 year	Competent Person
Training Records	Duration of employment + 3 years	Safety Manager
Incident/Near Miss Reports	5 years minimum	Safety Manager
Rescue Plan Documentation	Duration of project	Competent Person
Program Audit Reports	5 years minimum	Management
Equipment Manufacturer Documentation	Duration of equipment service life	Safety Manager
Competent Person Designation Records	Duration of assignment	Management

All records shall be readily accessible for review by OSHA compliance officers, employees, and their designated representatives. Records shall be stored in a secure location and backed up periodically.

Appendix A: Fall Hazard Survey Form

Field	Information
Project Name:	[]
Project Location:	[]
Survey Date:	[]
Competent Person:	[]
Survey Revision #:	[]

Hazard Identification

Location / Area	Fall Hazard Description	Height (ft)	Protection Method Selected	Anchorage Point(s)	Action Required

Additional Notes / Observations

Notes

Competent Person Signature: _____ Date: _____

Reviewed By: _____ Date: _____

Appendix B: Harness Inspection Checklist

Field	Information
Inspector Name:	[]
Inspection Date:	[]
Harness Manufacturer:	[]
Harness Model/Serial #:	[]
Date of Manufacture:	[]
Assigned To:	[]

Inspection Checklist

Inspection Item	Pass	Fail	N/A	Comments
Webbing: No cuts, burns, fraying, or abrasion				
Webbing: No chemical damage or discoloration				
Webbing: No excessive stretching or distortion				
Stitching: No pulled, cut, or broken threads				
D-Rings: No cracks, distortion, or corrosion				
D-Rings: Properly positioned and move freely				
Buckles: Operate and engage properly				
Buckles: No cracks, distortion, or corrosion				
Grommets: No damage, distortion, or missing rivets				
Labels: Manufacturer, model, date, size legible				
Tongue/Pass-through buckles: Engage securely				
Quick-connect buckles: Lock and release properly				
Padding/Comfort features: Intact and functional				
Trauma straps: Present and functional				
Previous fall arrest event: NO (if YES, remove from service)				

Overall Condition: ☐ PASS — Return to Service ☐ FAIL — Remove from Service

If FAIL, describe deficiency: _____

Inspector Signature: _____ Date: _____

Next Scheduled Inspection Date: _____

Appendix C: Rescue Plan Template

Field	Information
Project Name:	[]
Project Location:	[]
Date Prepared:	[]
Prepared By:	[]
Emergency Phone #:	[]
Nearest Hospital:	[]
Hospital Address:	[]

Rescue Methods by Work Location

Work Location	Rescue Method (Self-Rescue / Assisted / Mechanical)	Equipment Required	Trained Rescue Personnel	Estimated Rescue Time

Rescue Equipment Inventory

Equipment Description	Quantity	Location Stored	Last Inspection Date	Condition

Rescue Procedures

1. Upon observation of a fall arrest event, immediately call for help and activate the rescue plan.
2. Call 911 as backup while initiating on-site rescue procedures.
3. Communicate with the fallen worker — assess consciousness and injuries.
4. Instruct the worker to use trauma relief straps and maintain leg movement if conscious.
5. Deploy rescue equipment and execute the designated rescue method.
6. Complete rescue within 6 minutes of the fall arrest.
7. Once rescued, position the worker in a seated/reclined position — do NOT lay flat.
8. Provide first aid and await EMS arrival.
9. Preserve the scene and all equipment for incident investigation.
10. Complete the incident report within 24 hours.

Rescue Drill Log

Drill Date	Location	Scenario	Rescue Time Achieved	Participants	Corrective Actions Needed

Plan Prepared By: _____ Date: _____

Approved By: _____ Date: _____

Appendix D: Training Sign-Off Sheet

Field	Information
Training Topic:	Fall Protection Program
Training Date:	[]
Training Location:	[]
Trainer Name:	[]
Trainer Qualifications:	[]
Training Duration:	[]

Topics Covered

- ☐ Fall hazard identification and avoidance
- ☐ Fall protection systems (guardrails, PFAS, nets, warning lines, CAZ)
- ☐ Personal fall arrest system use and limitations
- ☐ Harness fitting, adjustment, and donning
- ☐ Equipment inspection procedures (pre-use and formal)
- ☐ Anchorage point selection and evaluation
- ☐ Fall distance calculations
- ☐ Rescue procedures and suspension trauma prevention
- ☐ Incident and near-miss reporting
- ☐ Applicable OSHA standards

Employee Acknowledgment

By signing below, I acknowledge that I have received training in the above topics, understand the material presented, had the opportunity to ask questions, and agree to comply with the fall protection requirements of [COMPANY NAME].

#	Employee Name (Print)	Employee Signature	Date	Company/Trade

Trainer Signature: _____ Date: _____

FORBES SAFETY SOLUTIONS

Fire Prevention Plan

OSHA Compliance Program

Prepared for:

[COMPANY NAME]

Regulatory References:

29 CFR 1910.39 | 29 CFR 1926.150-155 | NFPA 10 | NFPA 51B

Date: [DATE] | Revision: [REV NUMBER]

Prepared by: [SAFETY MANAGER NAME / TITLE]

Table of Contents

1. Purpose and Scope

This Fire Prevention Plan (FPP) has been developed to comply with OSHA requirements under 29 CFR 1910.39 (General Industry) and 29 CFR 1926.150-155 (Construction). The purpose of this plan is to prevent fires from occurring at [COMPANY NAME] work sites and facilities, and to provide procedures for fire safety in the event of a fire emergency.

This plan applies to all employees, subcontractors, and visitors at [COMPANY NAME] facilities, offices, work sites, and storage areas. It is intended to be used in conjunction with the company's Emergency Action Plan.

1.1 Regulatory References

- 29 CFR 1910.39 – Fire Prevention Plans (General Industry)
- 29 CFR 1910.157 – Portable Fire Extinguishers
- 29 CFR 1926.150 – Fire Protection (Construction)
- 29 CFR 1926.151 – Fire Prevention
- 29 CFR 1926.152 – Flammable Liquids
- 29 CFR 1926.153 – Liquefied Petroleum Gas (LPG)
- 29 CFR 1926.154 – Temporary Heating Devices
- 29 CFR 1926.155 – Definitions Applicable to Fire Protection
- NFPA 10 – Standard for Portable Fire Extinguishers
- NFPA 51B – Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

2. Fire Hazard Identification

[COMPANY NAME] shall conduct a fire hazard assessment for each work site, facility, and storage area. The assessment shall identify potential fire hazards and the controls necessary to mitigate them.

2.1 Common Fire Hazards

Hazard Category	Examples	Control Measures
Flammable/Combustible Liquids	Gasoline, diesel, solvents, paints, adhesives	Approved storage cabinets, proper labeling, grounding/bonding, limited quantities
Compressed Gases	Acetylene, propane, oxygen	Upright storage, separation of fuel/oxidizer, valve protection caps, ventilated storage
Electrical Hazards	Overloaded circuits, damaged cords, temporary wiring	GFCI protection, regular inspections, proper amperage, no daisy-chaining
Hot Work Activities	Welding, cutting, brazing, grinding	Hot work permits, fire watch, 35-ft clearance, fire extinguisher at point of operation
Combustible Materials	Wood, paper, cardboard, rags, insulation	Proper housekeeping, designated storage, separation from ignition sources
Temporary Heating	Salamanders, propane heaters, portable heaters	Clearance from combustibles, ventilation, fuel storage separation, tip-over protection
Smoking	Cigarettes, lighters, matches	Designated smoking areas only, minimum 25 ft from flammables/combustibles

2.2 Fire Hazard Assessment Frequency

- Initial assessment before work begins at each new site or facility
- Updated whenever conditions change (new materials, new tasks, weather changes)
- Annual review of all standing facilities
- Documented using the Fire Hazard Assessment Form (Appendix A)

3. Roles and Responsibilities

3.1 Program Administrator

[SAFETY MANAGER NAME / TITLE] is responsible for:

- Developing, implementing, and maintaining this Fire Prevention Plan
- Conducting or overseeing fire hazard assessments
- Ensuring fire extinguishers are properly placed, inspected, and maintained
- Coordinating employee fire safety training
- Investigating fire incidents and near-misses
- Issuing and managing hot work permits

3.2 Supervisors

- Enforce fire prevention procedures at the work site
- Ensure housekeeping standards are maintained to prevent fire hazards
- Verify fire extinguishers are accessible and current inspections are documented
- Ensure employees are trained on emergency procedures and extinguisher use
- Assign fire watch personnel during and after hot work operations

3.3 Employees

- Follow all fire prevention procedures and housekeeping requirements
- Report fire hazards and unsafe conditions immediately
- Know the location of fire extinguishers and how to use them (if trained)
- Know the emergency evacuation routes and assembly areas
- Perform fire watch duties when assigned

4. Housekeeping for Fire Prevention

Proper housekeeping is one of the most effective methods of fire prevention. [COMPANY NAME] requires the following housekeeping practices:

1. Maintain work areas free of unnecessary accumulations of combustible materials (scrap wood, paper, oily rags, cardboard, packaging).
2. Dispose of oily or solvent-soaked rags in approved, self-closing metal containers. Empty containers daily or at the end of each shift.
3. Keep exits, stairways, aisles, and access to fire extinguishers clear and unobstructed at all times.
4. Store combustible materials at least 10 feet away from any building under construction (per 29 CFR 1926.151).
5. Remove combustible waste from enclosed areas at regular intervals during construction operations.
6. Clean up spills of flammable or combustible liquids immediately.
7. Ensure trash and debris dumpsters are located a safe distance from structures.

5. Hot Work Controls

Hot work (welding, cutting, brazing, soldering, grinding, and other spark-producing operations) is a leading cause of workplace fires. [COMPANY NAME] implements the following controls:

5.1 Hot Work Permit System

A Hot Work Permit is required before any hot work is performed outside of designated welding/cutting areas. The permit system ensures:

- The area has been inspected and combustibles removed or protected within a 35-foot radius
- A fire extinguisher (minimum 20-lb ABC) is immediately available at the point of operation
- A trained fire watch person is assigned
- Fire detection/suppression systems in the area are operational
- Flammable vapors, dusts, or gases have been tested for and eliminated

5.2 Fire Watch Requirements

A fire watch is required during all hot work operations and for a minimum of 30 minutes (60 minutes recommended) after hot work is completed. Fire watch personnel shall:

- Have fire-extinguishing equipment readily available and be trained in its use
- Be familiar with the facility/site and the procedures for sounding a fire alarm
- Watch for fires in all exposed areas and attempt to extinguish only fires clearly within the capability of the available equipment
- Have no other duties that would conflict with fire watch responsibilities
- Maintain a Fire Watch Log (Appendix B) for each hot work operation

NOTE: Where hot work is performed on walls, ceilings, or floors, a fire watch shall be maintained on the opposite side if combustible materials are present.

6. Flammable and Combustible Liquid Storage

6.1 General Requirements

- Store flammable and combustible liquids in approved, properly labeled containers only.
- Do not store more than 25 gallons of flammable liquids outside of an approved storage cabinet or storage room.
- Approved flammable storage cabinets shall hold no more than 60 gallons of Class I or II liquids, or 120 gallons of Class III liquids.
- Storage areas shall be well-ventilated and located away from ignition sources, exits, and stairways.
- Grounding and bonding shall be used when transferring flammable liquids between containers to prevent static discharge.

6.2 Quantity Limits in Work Areas

Container Type	Maximum Capacity	Maximum Quantity in Work Area
Safety cans (approved)	5 gallons	25 gallons total of flammable liquids
Original manufacturer containers	As received	One day's supply or 25 gallons (whichever is less)
Flammable storage cabinet	60 gallons Class I/II	Per approved cabinet rating

7. Fire Suppression Equipment

7.1 Portable Fire Extinguishers

[COMPANY NAME] shall provide and maintain portable fire extinguishers in accordance with 29 CFR 1910.157, 29 CFR 1926.150, and NFPA 10.

7.1.1 Extinguisher Placement – Travel Distance Requirements

Hazard Class	Extinguisher Type	Maximum Travel Distance
Class A (ordinary combustibles)	2-A rated minimum	75 feet (23 m)
Class B (flammable liquids)	10-B rated minimum	50 feet (15 m)
Class C (electrical equipment)	Rated for electrical use	Based on Class A or B hazard present
Class D (combustible metals)	Specific to metal type	75 feet (23 m)
Class K (cooking oils/fats)	Wet chemical type	30 feet (9 m)
Multi-purpose (ABC)	Per rating	50-75 feet depending on hazard

7.1.2 Construction Site Requirements

Per 29 CFR 1926.150, the following fire protection requirements apply to construction operations:

- A fire extinguisher rated not less than 2A shall be provided for each 3,000 square feet of building area.
- A fire extinguisher rated not less than 10B shall be provided within 50 feet of wherever more than 5 gallons of flammable liquids or 5 pounds of flammable gas are being used.
- Fire extinguishers shall be conspicuously located and readily accessible at all times.
- Fire extinguishers shall be inspected monthly and maintained annually per NFPA 10.

7.2 Inspection and Maintenance

Inspection Type	Frequency	Performed By	Requirements
Visual Inspection	Monthly	Designated employee	Verify location, access, pressure gauge, physical condition, pin/tamper seal
Annual Maintenance	Annually	Certified fire extinguisher technician	Full inspection per NFPA 10, tag and record
Hydrostatic Testing	Per NFPA 10 schedule (5-12 years)	Certified technician	Pressure test per extinguisher type
6-Year Internal Exam	Every 6 years (stored pressure)	Certified technician	Internal examination of stored-pressure extinguishers

8. Electrical Fire Prevention

Electrical hazards are a significant source of workplace fires. [COMPANY NAME] implements the following controls:

- All temporary wiring shall comply with OSHA requirements and the National Electrical Code (NEC).
- Extension cords shall be used only as temporary wiring and shall be of adequate gauge for the load.
- Do not daisy-chain extension cords, power strips, or surge protectors.
- Damaged or frayed electrical cords, plugs, and equipment shall be removed from service immediately.
- Ground Fault Circuit Interrupters (GFCIs) shall be used on all temporary power circuits.
- Electrical panels and disconnect switches shall have minimum 36-inch clearance at all times.
- All electrical work shall be performed by qualified personnel only.
- Space heaters, if permitted, shall be UL-listed, have tip-over protection, and maintain 3-foot clearance from combustibles.

9. Smoking Policy

[COMPANY NAME] restricts smoking (including e-cigarettes and vaping) to designated smoking areas only.

- Designated smoking areas shall be clearly marked and located a minimum of 25 feet from buildings, flammable/combustible storage, trash containers, and vegetation.
- Appropriate receptacles for disposal of smoking materials shall be provided at all designated areas.
- Smoking is strictly prohibited near flammable liquid storage areas, fueling operations, compressed gas cylinders, and areas posted with "No Smoking" signs.
- Smoking is prohibited inside all company buildings, vehicles, and enclosed structures.

10. Emergency Procedures

10.1 In the Event of a Fire

1. Activate the fire alarm or alert all personnel in the area by voice if no alarm system is available.
2. Call 911 (or the local emergency number) immediately.
3. If the fire is small and you are trained, attempt to extinguish it using the nearest appropriate fire extinguisher. Use the P.A.S.S. technique: Pull the pin, Aim at the base of the fire, Squeeze the handle, Sweep side to side.
4. If the fire cannot be controlled quickly, evacuate the area immediately using the nearest safe exit.
5. Close doors behind you as you evacuate to slow the spread of fire and smoke.
6. Proceed to the designated assembly area and report to the supervisor or site safety representative.
7. Do not re-enter the building or area until the fire department has declared it safe.

10.2 Assembly Areas

[COMPANY NAME] shall designate assembly areas at each work site and facility. Assembly areas shall be:

- Located a safe distance from the building/work area (minimum 100 feet recommended)
- Upwind of the fire location when possible
- Clear of emergency vehicle access routes
- Communicated to all employees during orientation and toolbox talks

10.3 Accountability

Supervisors shall account for all employees at the assembly area. A headcount shall be conducted and reported to the site safety representative and/or the fire department incident commander.

11. Training

[COMPANY NAME] shall provide fire prevention and fire safety training to all employees as follows:

11.1 Initial Training

All new employees shall receive fire prevention training during orientation, covering:

- This Fire Prevention Plan and how to access it
- Fire hazards associated with their specific job duties
- Proper handling and storage of flammable/combustible materials
- Location and proper use of fire extinguishers
- Emergency procedures and evacuation routes
- Reporting fire hazards and incidents

11.2 Annual Refresher Training

All employees shall receive annual refresher training on fire prevention topics. Additional training shall be provided when:

- An employee's job duties change and introduce new fire hazards
- New materials, equipment, or processes are introduced
- This plan is revised or updated

11.3 Specialized Training

- Hot Work Permit Holders: Training on hot work procedures, fire watch duties, and permit requirements
- Fire Watch Personnel: Training on fire watch responsibilities, extinguisher use, and alarm activation
- Fire Extinguisher Use: Hands-on training for employees expected to use portable fire extinguishers (per 29 CFR 1910.157(g))

12. Recordkeeping

[COMPANY NAME] shall maintain the following fire prevention records:

- Fire Hazard Assessment Forms (Appendix A)
- Hot Work Permits
- Fire Watch Logs (Appendix B)
- Fire extinguisher monthly inspection tags and annual maintenance records
- Employee fire prevention training records (date, topics, attendees, trainer)
- Fire incident investigation reports

Records shall be maintained for a minimum of three (3) years, or longer if required by applicable regulations.

Appendix A: Fire Hazard Assessment Form

[COMPANY NAME]

Fire Hazard Assessment Form

Site / Facility Name: _____

Address / Location: _____

Assessment Date: _____

Assessed By: _____

Job / Project Number: _____

Fire Hazard Identification

Identify all fire hazards present at this location:

- ☐ Flammable liquids (gasoline, diesel, solvents, paints)
- ☐ Combustible materials (wood, paper, cardboard, insulation, vegetation)
- ☐ Compressed gases (acetylene, propane, oxygen)
- ☐ Electrical hazards (temporary wiring, overloaded circuits, damaged cords)
- ☐ Hot work operations (welding, cutting, brazing, grinding)
- ☐ Temporary heating devices
- ☐ Cooking equipment
- ☐ Smoking areas near combustibles
- ☐ Other: _____

Fire Prevention Controls in Place

- ☐ Fire extinguishers provided and accessible (type/location): _____
- ☐ Flammable storage cabinet(s) in use
- ☐ Housekeeping procedures established
- ☐ Hot work permit system in effect
- ☐ No Smoking signs posted
- ☐ Designated smoking area established (location): _____
- ☐ Emergency evacuation routes identified
- ☐ Assembly area designated (location): _____
- ☐ Employees trained on fire prevention and emergency procedures

☐ Fire alarm / notification system available

Additional Controls Needed

Fire Extinguisher Inventory

Location	Type / Rating	Size	Last Inspection Date	Condition

Assessor Signature

Date

Site Supervisor Signature

Date

Appendix B: Fire Watch Log

[COMPANY NAME]

Fire Watch Log

Date: _____

Project / Site Name: _____

Location of Hot Work: _____

Hot Work Permit Number: _____

Hot Work Operator Name: _____

Fire Watch Person Name: _____

Pre-Hot Work Checklist

- ☐ Combustible materials moved or protected within 35-foot radius
- ☐ Floor / ground swept clean of combustible debris
- ☐ Flammable vapor / dust test conducted (if applicable) – Result: _____
- ☐ Fire extinguisher (minimum 20-lb ABC) at point of operation
- ☐ Fire alarm / notification method established
- ☐ Wall / floor / ceiling openings covered or protected
- ☐ Opposite side of wall / ceiling checked for combustibles (if applicable)
- ☐ Sprinkler / fire suppression system operational (if applicable)

Fire Watch Time Log

Time	Activity / Observation	Initials
	Hot work started	
	Hot work completed	
	Post-hot work monitoring started	

Time	Activity / Observation	Initials
	Fire watch completed (minimum 30 min after hot work)	

Post-Hot Work Inspection

- ☐ Area inspected – No evidence of fire, hot spots, or smoldering materials
- ☐ Area re-inspected 30 minutes after hot work completion
- ☐ Area re-inspected 60 minutes after hot work completion (recommended)

Comments / Observations:

Fire Watch Person Signature

Date

Hot Work Operator Signature

Date

Supervisor Signature

Date

HAZARD COMMUNICATION (HazCom) PROGRAM

Written Safety Program

Per 29 CFR 1910.1200 — Globally Harmonized System (GHS) Aligned

[COMPANY NAME]

[Company Address]

Effective Date: _____

Revision Date: _____

Prepared by Forbes Safety Solutions

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1.0 Purpose and Scope

This Hazard Communication (HazCom) Program has been established to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200, as aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The purpose of this program is to ensure that the hazards of all chemicals used, stored, or handled at [Company Name] worksites are evaluated, and that information concerning these hazards is transmitted to all affected employees.

This program applies to all employees who may be exposed to hazardous chemicals under normal working conditions or during foreseeable emergencies. This includes all work areas, job classifications, and operations where hazardous chemicals are present.

This written program is available to all employees and their designated representatives upon request. A copy is maintained at [location / office].

2.0 Responsibilities

2.1 Program Administrator

The HazCom Program Administrator is: [Name / Title]. This person is responsible for:

- Implementing and maintaining this written program
- Maintaining the chemical inventory and SDS library
- Ensuring proper labeling of all containers
- Coordinating employee training
- Communicating hazard information to contractors
- Reviewing and updating the program annually

2.2 Supervisors / Foremen

- Ensure employees receive HazCom training before working with hazardous chemicals
- Ensure proper labeling of all workplace containers
- Ensure Safety Data Sheets are accessible to all employees on every shift
- Enforce proper use of PPE when handling hazardous chemicals

2.3 Employees

- Attend required HazCom training
- Read and follow SDS information and label warnings
- Use required PPE when working with hazardous chemicals
- Report unlabeled containers, missing SDSs, or chemical spills to their supervisor immediately

3.0 Hazard Classification

[Company Name] relies on the hazard classification provided by chemical manufacturers and importers on their Safety Data Sheets and product labels. The company will not perform independent hazard classification.

Under the GHS-aligned HazCom standard, hazards are classified into two major groups:

Physical Hazards: Flammable gases, flammable liquids, flammable solids, oxidizers, compressed gases, explosives, self-reactive chemicals, pyrophoric materials, organic peroxides, corrosive to metals, and others.

Health Hazards: Acute toxicity, skin corrosion/irritation, serious eye damage/irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity (single and repeated exposure), and aspiration hazard.

When a new chemical is introduced to the workplace, the SDS must be obtained and reviewed before the chemical is used. The Program Administrator will update the chemical inventory and ensure proper labeling.

4.0 Safety Data Sheets (SDS)

[Company Name] will maintain a complete and current SDS for every hazardous chemical used at the worksite. SDSs will be readily accessible to all employees during each work shift.

4.1 SDS Management

- SDSs are maintained at: [Location — e.g., safety office, SDS binder in each work area, electronic system]
- New SDSs are obtained before any new chemical is brought to the worksite
- SDSs are reviewed and updated when new or revised versions become available
- If an SDS is not available for a chemical, the Program Administrator will contact the manufacturer/supplier using the SDS Request Letter (Appendix B)
- Electronic SDSs are acceptable provided employees can access them without barriers during each shift

4.2 The 16-Section SDS Format

Under the GHS, all SDSs must follow a standardized 16-section format:

1. **Section 1:** Identification — Product name, manufacturer, emergency phone
2. **Section 2:** Hazard(s) Identification — GHS classification, signal word, pictograms, hazard statements
3. **Section 3:** Composition / Information on Ingredients
4. **Section 4:** First-Aid Measures
5. **Section 5:** Fire-Fighting Measures
6. **Section 6:** Accidental Release Measures
7. **Section 7:** Handling and Storage
8. **Section 8:** Exposure Controls / Personal Protection
9. **Section 9:** Physical and Chemical Properties
10. **Section 10:** Stability and Reactivity
11. **Section 11:** Toxicological Information
12. **Section 12:** Ecological Information
13. **Section 13:** Disposal Considerations
14. **Section 14:** Transport Information
15. **Section 15:** Regulatory Information
16. **Section 16:** Other Information

5.0 Labeling Requirements

5.1 Manufacturer Labels

All containers of hazardous chemicals received at the worksite must have a GHS-compliant label that includes:

- Product identifier (chemical name)
- Signal word ("Danger" or "Warning")
- Hazard statement(s) describing the nature of the hazard
- Precautionary statement(s) describing recommended measures
- GHS pictogram(s) — red-bordered diamond symbols
- Manufacturer/supplier name, address, and phone number

5.2 Workplace (Secondary) Container Labels

When chemicals are transferred to secondary containers, the container must be labeled with at minimum:

- Product identifier (matching the SDS)
- Words, pictures, symbols, or a combination providing general information about the hazards

Exception: Portable containers for immediate use by the employee who performs the transfer do not require labeling, provided the chemical is under that employee's control during the entire shift.

5.3 Label Maintenance

Labels must not be defaced or removed. If a label becomes unreadable, the supervisor must ensure the container is relabeled immediately. Unlabeled containers must be removed from service until properly labeled.

6.0 Chemical Inventory

A master chemical inventory is maintained by the Program Administrator and updated whenever a new chemical is introduced or an existing chemical is removed from use. The inventory includes:

- Chemical / product name (matching the SDS)
- Manufacturer / supplier name
- Work area where the chemical is used or stored
- Hazard classification (physical and health)
- SDS on file (Yes / No)
- Date added to inventory

The Chemical Inventory Template is included in Appendix A.

7.0 Employee Training

All employees who may be exposed to hazardous chemicals must receive HazCom training. Training is provided:

- At the time of initial assignment to a work area with hazardous chemicals
- When a new chemical hazard is introduced to the work area
- Annually as a refresher

7.1 Training Content

Training must cover the following topics:

- An overview of the requirements of 29 CFR 1910.1200 and this written program
- Location and availability of the written HazCom Program and chemical inventory
- How to read and interpret GHS labels, including pictograms, signal words, hazard statements, and precautionary statements
- How to access, read, and use Safety Data Sheets
- Physical and health hazards of the chemicals in the work area
- Protective measures (PPE, engineering controls, work practices) to reduce exposure
- Emergency procedures for chemical spills, leaks, or exposures
- Procedures for non-routine tasks involving hazardous chemicals

The Training Sign-Off Sheet (Appendix C) must be completed for all training sessions.

8.0 Non-Routine Tasks

Before employees perform non-routine tasks that involve potential exposure to hazardous chemicals (e.g., cleaning tanks, entering confined spaces, emergency repairs), the supervisor must:

- Identify the hazardous chemicals that may be involved
- Review the applicable SDS(s) with the affected employees
- Ensure appropriate PPE and safety measures are in place
- Brief employees on the specific hazards and emergency procedures for the task
- Conduct atmospheric monitoring if required by the task or hazard

9.0 Contractor Notification

When contractors work at [Company Name] facilities or jobsites, the following information must be provided:

- The identity of hazardous chemicals to which they may be exposed while on site
- The location and availability of SDSs for those chemicals

- Precautionary measures the contractor's employees should take to protect themselves
- The location of this written HazCom Program and the chemical inventory

Contractors must also provide [Company Name] with SDSs for any hazardous chemicals they bring onto the worksite. Contractors are responsible for training their own employees on the hazards of their chemicals.

10.0 Multi-Employer Worksites

On multi-employer worksites (including construction projects), the host employer or general contractor will:

- Inform all employers of the location and availability of SDSs at the worksite
- Implement a system to communicate chemical hazards introduced by any employer
- Ensure that chemical inventory information is shared and accessible to all employers
- Coordinate labeling systems so all workers can understand the hazard information

Each employer on the multi-employer worksite remains responsible for training their own employees and maintaining their own HazCom program.

11.0 Recordkeeping

The following records must be maintained and made available upon request:

- This written Hazard Communication Program
- Chemical Inventory (updated as chemicals change)
- Safety Data Sheets for all hazardous chemicals (current and historical)
- Employee training records (including dates, topics, attendees, and trainer)
- SDS request letters sent to manufacturers/suppliers

Training records must be maintained for the duration of employment plus 3 years.

Appendix A: Chemical Inventory Template

Use this template to track all hazardous chemicals present at the worksite. Update whenever chemicals are added or removed.

Product Name	Manufacturer	Work Area / Location	Hazard Class	SDS on File?	Date Added

Appendix B: SDS Request Letter Template

[Date]

[Manufacturer/Supplier Name]

[Address]

[City, State, ZIP]

Re: Request for Safety Data Sheet(s)

Dear Sir or Madam:

Under the OSHA Hazard Communication Standard (29 CFR 1910.1200), employers are required to maintain Safety Data Sheets (SDSs) for all hazardous chemicals present in the workplace. We have been unable to locate the SDS for the following product(s) in our files:

[Product Name / Product #]

Please forward the current SDS for the above product(s) to:

[Company Name]

[Attention: Program Administrator Name]

[Address]

[City, State, ZIP]

[Email Address]

If you have any questions, please contact us at [Phone Number]. We appreciate your prompt attention to this matter.

Sincerely,

[Name, Title]

[Company Name]

Appendix C: Training Sign-Off Sheet

Hazard Communication (HazCom) Training

Training Date:	
Trainer Name:	
Location / Project:	
Topics Covered:	☐ Written HazCom Program ☐ Chemical Inventory ☐ SDS Access & Use ☐ GHS Labels ☐ PPE Requirements ☐ Spill Response ☐ Non-Routine Tasks

By signing below, I acknowledge that I have received training on the company's Hazard Communication Program, including how to read labels, access Safety Data Sheets, and protect myself from chemical hazards.

#	Print Name	Company / Employer	Signature	Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Appendix D: GHS Pictogram Reference Chart

The Globally Harmonized System (GHS) uses standardized pictograms on labels and SDSs to communicate specific hazards. Each pictogram is a red-bordered diamond shape with a black symbol on a white background. Below is a description of each pictogram and its meaning.

Pictogram Symbol	Pictogram Name	Hazard Description
 Flame	Flammable	Flammable gases, liquids, solids, aerosols. Self-reactive substances. Pyrophoric materials. Self-heating substances. Substances that emit flammable gases when in contact with water. Organic peroxides.
 Flame Over Circle	Oxidizer	Oxidizing gases, liquids, and solids. May cause or intensify fire. May cause explosion.
 Skull and Crossbones	Acute Toxicity (Severe)	Chemicals that are fatal, toxic, or highly toxic if swallowed, inhaled, or absorbed through the skin. Categories 1-3 acute toxicity.
 Exclamation Mark	Irritant / Harmful	Skin and eye irritation. Skin sensitization. Acute toxicity (Category 4 — harmful). Narcotic effects. Respiratory tract irritation. Hazardous to ozone layer.
 Health Hazard (Silhouette)	Serious Health Hazard	Carcinogenicity. Respiratory sensitization. Reproductive toxicity. Specific target organ toxicity (single and repeated exposure). Germ cell mutagenicity. Aspiration hazard.
 Corrosion	Corrosive	Skin corrosion / burns. Serious eye damage. Corrosive to metals.
 Gas Cylinder	Compressed Gas	Compressed gases. Liquefied gases. Refrigerated liquefied gases. Dissolved gases. May explode if heated.
 Exploding Bomb	Explosive	Explosives. Self-reactive substances. Organic peroxides. Unstable explosives. Divisions 1.1 through 1.6.
 Environment	Environmental Hazard	Acute and chronic aquatic toxicity. Hazardous to the aquatic environment. Not mandated by OSHA but may appear on labels/SDSs.

Signal Words: "DANGER" indicates more severe hazards. "WARNING" indicates less severe hazards. A product will display only one signal word — the most severe applicable.

Hazard Statements: Standardized phrases describing the nature and degree of hazard (e.g., "Highly flammable liquid and vapor," "Causes serious eye damage"). These appear on both labels and SDSs.

Precautionary Statements: Recommended measures to minimize or prevent adverse effects from exposure, storage, or handling (e.g., "Keep away from heat/sparks/open flames," "Wear protective gloves/eye protection").

HEAT ILLNESS PREVENTION PROGRAM

Protecting Workers from Heat-Related Hazards

Company:	[COMPANY NAME]
Effective Date:	[DATE]
Revision Number:	[REV #]
Prepared By:	[NAME / TITLE]
Approved By:	[NAME / TITLE]
Approval Date:	[DATE]

FORBES SAFETY SOLUTIONS

Professional Safety Program Template

Table of Contents

1. Purpose and Scope

[COMPANY NAME] is committed to protecting employees from heat-related illnesses and injuries. This Heat Illness Prevention Program establishes procedures and practices to minimize the risk of heat-related illness for all employees who perform work in hot environments, whether outdoors or in indoor settings lacking adequate climate control.

This program applies to all [COMPANY NAME] employees, subcontractors, and temporary workers who may be exposed to heat stress conditions during the course of their work activities.

The goal of this program is to ensure compliance with applicable regulations and to provide a safe and healthful work environment through the implementation of engineering controls, administrative controls, and work practices designed to prevent heat-related illness.

2. Regulatory References

- OSHA General Duty Clause, Section 5(a)(1) of the OSH Act — Requires employers to provide a workplace free from recognized hazards likely to cause death or serious physical harm
- OSHA's "Water. Rest. Shade." Campaign — National emphasis program for outdoor and indoor heat-related hazards
- NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments (2016)
- ACGIH Threshold Limit Values (TLVs) for Heat Stress and Heat Strain
- OSHA National Emphasis Program (NEP) on Outdoor and Indoor Heat-Related Hazards (CPL 03-00-024)

3. Definitions

Term	Definition
Heat Stroke	A life-threatening condition where the body's temperature regulation fails. Core temperature rises above 104°F. Symptoms: confusion, altered mental status, slurred speech, loss of consciousness, hot/dry skin or profuse sweating, seizures. MEDICAL EMERGENCY — call 911.
Heat Exhaustion	A serious condition caused by excessive loss of water and salt through sweating. Symptoms: headache, nausea, dizziness, weakness, irritability, thirst, heavy sweating, elevated body temperature, decreased urine output.
Heat Cramps	Painful muscle cramps and spasms caused by loss of body salts and fluid during sweating. Usually occur in the abdomen, arms, or legs.
Heat Rash	Skin irritation caused by excessive sweating in hot, humid environments. Appears

Term	Definition
	as red clusters of pimples or small blisters, typically on the neck, chest, groin, or elbow creases.
Heat Syncope	Fainting or dizziness that occurs when standing for prolonged periods or suddenly rising from a sitting/lying position in hot environments.
Acclimatization	The process of gradually increasing exposure to heat over 7-14 days to allow the body to adapt to working in hot conditions.
WBGT	Wet Bulb Globe Temperature — a composite temperature measurement that accounts for air temperature, humidity, radiant heat, and wind speed.
Heat Index	An index that combines air temperature and relative humidity to indicate perceived temperature and potential health risk.

4. Risk Factors for Heat-Related Illness

The following factors increase the risk of heat-related illness and must be considered when evaluating work conditions:

4.1 Environmental Factors

- Air temperature above 80°F (27°C)
- High relative humidity (above 50%)
- Direct sun exposure or radiant heat sources
- Limited or no air movement
- Sudden changes in temperature (heat waves)

4.2 Work-Related Factors

- Heavy physical exertion (moderate to heavy workload)
- Wearing heavy or non-breathable personal protective equipment (PPE)
- Working near heat-generating equipment or processes
- Extended work shifts or overtime
- Insufficient rest breaks

4.3 Personal Risk Factors

- Lack of acclimatization (new or returning workers)

- Previous heat-related illness
- Age (over 65), obesity, or poor physical fitness
- Dehydration or inadequate fluid intake
- Certain medications (diuretics, blood pressure medications, antihistamines, stimulants)
- Alcohol or caffeine consumption
- Pregnancy

5. Roles and Responsibilities

5.1 Management / Program Administrator

- Implement and maintain this Heat Illness Prevention Program
- Provide resources for water, shade structures, and cooling equipment
- Ensure all supervisors and employees receive heat illness prevention training
- Monitor weather conditions and issue heat advisories
- Investigate all heat-related incidents and near-misses

5.2 Supervisors

- Monitor employees for signs and symptoms of heat-related illness
- Ensure water, rest, and shade are available and accessible
- Implement work/rest schedules based on heat conditions
- Enforce the buddy system during high-heat conditions
- Ensure new employees follow the acclimatization schedule
- Complete and maintain the Daily Heat Stress Monitoring Log (Appendix A)
- Contact emergency services immediately for suspected heat stroke

5.3 Employees

- Drink water frequently — at least 1 cup (8 oz.) every 15–20 minutes
- Take rest breaks in shade or cool areas as directed
- Report signs and symptoms of heat illness immediately to supervisor
- Monitor co-workers (buddy system) for signs of heat illness
- Attend all required heat illness prevention training sessions
- Avoid alcohol and caffeinated beverages during work hours in heat

6. Heat Stress Monitoring

[COMPANY NAME] will monitor environmental heat conditions using one or more of the following methods:

- Wet Bulb Globe Temperature (WBGT) monitoring using a calibrated instrument
- Heat Index calculations using NOAA or OSHA Heat Index charts
- Weather service forecasts and real-time monitoring

Measurements shall be taken at the beginning of each shift and at least every two hours when the temperature exceeds 80°F. Readings shall be documented in the Daily Heat Stress Monitoring Log (Appendix A).

7. Work/Rest Schedules

The following work/rest schedules shall be implemented based on the Heat Index or WBGT measurement. Supervisors shall adjust schedules as conditions change throughout the shift.

Heat Index Range	Risk Level	Work/Rest Schedule	Required Actions
Under 91°F	Lower (Caution)	Normal work schedule	Provide water and shade; encourage hydration; basic heat safety awareness
91°F – 103°F	Moderate	50 min work / 10 min rest each hour	Mandatory water breaks every 15–20 min; shade available; buddy system initiated; monitor for symptoms
103°F – 115°F	High	40 min work / 20 min rest each hour	Mandatory shade rest breaks; physiological monitoring; limit heavy exertion; consider rescheduling to cooler hours
Over 115°F	Very High to Extreme	20 min work / 40 min rest each hour OR suspend work	Evaluate whether work can continue safely; reschedule non-essential tasks; continuous symptom monitoring; emergency resources on standby

8. Acclimatization Plan

New employees or employees returning to work after an absence of 14 days or more must be gradually acclimatized to hot working conditions. The acclimatization schedule is as follows:

8.1 New Workers (No Previous Heat Exposure)

Day	Allowable Workload in Heat
Day 1	20% of normal workload/duration
Day 2	40% of normal workload/duration
Day 3	60% of normal workload/duration
Day 4	80% of normal workload/duration
Day 5+	100% of normal workload/duration

8.2 Experienced Workers (Returning After Absence)

Day	Allowable Workload in Heat
Day 1	50% of normal workload/duration
Day 2	60% of normal workload/duration
Day 3	80% of normal workload/duration
Day 4+	100% of normal workload/duration

Supervisors shall closely monitor acclimatizing workers for signs and symptoms of heat-related illness throughout the acclimatization period.

9. Hydration Requirements

- Potable drinking water shall be provided at no cost and readily accessible to all employees at all times
- Water shall be maintained at a cool temperature (50°F–60°F) where practicable
- Employees shall drink at least 1 cup (8 oz.) of water every 15–20 minutes, even if not thirsty
- During an 8-hour shift in hot conditions, each worker should consume approximately 1 quart (32 oz.) of water per hour
- Electrolyte-replacement drinks may be provided as a supplement but shall not replace water
- Supervisors shall encourage and remind workers to drink water frequently
- Sufficient quantities must be available to allow each employee at least one quart per hour for the entire shift

10. Shade and Cooling Requirements

- When temperatures exceed 80°F, shade shall be available at all times and located as close to the work area as practicable
- Shade structures must accommodate the number of employees on break at any given time
- Shade may be provided by canopies, tents, tarps, buildings, trees, or other natural or artificial means
- Cooling measures may include misting fans, air-conditioned rest areas, cooling vests, and wet towels
- Indoor work areas lacking climate control shall be evaluated for additional ventilation, fans, or portable cooling units

11. Buddy System

When the Heat Index reaches 91°F or above, [COMPANY NAME] shall implement a mandatory buddy system:

- Each worker shall be assigned a buddy to monitor for signs and symptoms of heat illness
- Buddies shall maintain visual and verbal contact throughout the work period
- If a buddy observes signs of heat illness, they shall immediately notify the supervisor and begin first aid
- Workers shall never be left alone in high-heat conditions

12. Emergency Response Procedures

In the event of a suspected heat-related illness, the following procedures shall be followed:

12.1 Heat Stroke (MEDICAL EMERGENCY)

Remember: COOL FIRST, CALL 911 SECOND.

1. Move the worker to a shaded or cool area immediately
2. Call 911 (or local emergency number) — DO NOT delay emergency services
3. Begin aggressive cooling: remove excess clothing, apply cold water or ice packs to neck, armpits, and groin
4. If ice bath is available, immerse the worker up to the neck
5. Fan the worker while applying cold water
6. Do NOT give fluids if the worker is unconscious or has altered mental status

7. Stay with the worker until emergency medical services arrive
8. Notify [COMPANY NAME] management immediately

12.2 Heat Exhaustion

1. Move the worker to a shaded or cool rest area
2. Remove excess clothing and loosen remaining clothing
3. Apply cool, wet cloths or mist with water
4. Provide cool water to drink in small amounts if the worker is conscious and alert
5. Monitor the worker closely; if symptoms worsen or do not improve within 15 minutes, call 911
6. Do not allow the worker to return to work for the remainder of the shift

12.3 Heat Cramps

1. Have the worker rest in a cool area
2. Provide electrolyte-replacement drinks or water
3. Gently stretch and massage affected muscles
4. Worker may return to work once cramps subside and no other symptoms are present

13. Training Requirements

[COMPANY NAME] shall provide heat illness prevention training to all employees and supervisors prior to initial assignment and annually thereafter. Additional training shall be provided at the start of each warm season.

13.1 All Employees

- Types of heat-related illness, signs, symptoms, and risk factors
- Importance of acclimatization and the company's acclimatization procedures
- Hydration requirements — how much and how often to drink
- How to access water, shade, and rest areas
- Work/rest schedules and how they are determined
- Buddy system procedures
- Emergency response procedures — what to do and who to contact
- Personal risk factors (medications, fitness, prior heat illness)

13.2 Supervisors (Additional Training)

- How to monitor weather conditions and use WBGT/Heat Index tools
- How to implement and adjust work/rest schedules
- How to recognize heat illness in workers and take immediate action
- How to administer first aid for heat-related illness
- Documentation and recordkeeping responsibilities
- Procedures for handling employee reports of heat-related symptoms

14. Recordkeeping

[COMPANY NAME] shall maintain the following records related to this program:

- Daily Heat Stress Monitoring Logs (Appendix A) — retained for a minimum of 3 years
- Training records (date, topics, trainer, attendees) — retained for duration of employment plus 3 years
- Heat-related incident reports and investigation findings
- Acclimatization schedules for new or returning workers
- Program review and revision records

15. Program Review

This Heat Illness Prevention Program shall be reviewed and updated at least annually, or more frequently when:

- A heat-related incident or near-miss occurs
- Regulatory requirements change
- Work processes or conditions change significantly
- Deficiencies are identified through audits or inspections

Appendix A: Daily Heat Stress Monitoring Log

Instructions: Complete this log at the beginning of each shift and at least every 2 hours when temperatures exceed 80°F. Retain records for a minimum of 3 years.

Project/Site:	[]	Date:	[]
Supervisor:	[]	Shift:	[]

Time	Temperature (°F)	Humidity (%)	Heat Index / WBGT	Wind Speed	Work/Rest Schedule	Actions Taken / Notes

Incidents/Observations:	[]
Supervisor Signature:	[]
Date:	[]

Appendix B: Heat Illness Symptom Recognition Card

QUICK REFERENCE — Post in visible locations on the jobsite. Distribute to all workers.

HEAT STROKE — CALL 911 IMMEDIATELY

Symptoms: Confusion, altered mental status, slurred speech, unconsciousness, very high body temperature (>104°F), hot/dry skin OR profuse sweating, seizures

First Aid: COOL FIRST — Move to shade, remove clothing, apply cold water/ice to neck/armpits/groin, immerse in ice bath if available. THEN call 911. Fan while cooling. Do NOT give fluids if unconscious.

HEAT EXHAUSTION

Symptoms: Headache, nausea, dizziness, weakness, heavy sweating, cool/moist skin, elevated temperature, irritability, decreased urine output, thirst

First Aid: Move to shade/cool area. Remove excess clothing. Apply cool cloths/mist. Give cool water in small sips if conscious. Monitor closely — call 911 if no improvement in 15 min.

HEAT CRAMPS

Symptoms: Painful muscle cramps/spasms in abdomen, arms, or legs

First Aid: Rest in cool area. Drink electrolyte-replacement fluids or water. Gently stretch/massage muscles. Seek medical help if cramps persist >1 hour.

HEAT RASH

Symptoms: Red clusters of blisters/pimples on neck, chest, groin, or elbow creases

First Aid: Move to cooler environment. Keep affected area dry. Apply powder to increase comfort. Do not use ointments or creams.

HEAT SYNCOPE (FAINTING)

Symptoms: Fainting, dizziness, light-headedness when standing

First Aid: Sit or lie down in cool area. Drink water slowly. If no recovery, seek medical attention.

Emergency Contact: 911 | Company Emergency Contact: [PHONE NUMBER]

Supervisor: [NAME] | Site Location: [ADDRESS]

FORBES SAFETY SOLUTIONS

LOCKOUT/TAGOUT

Control of Hazardous Energy Program

29 CFR 1910.147

[COMPANY NAME]

[ADDRESS]

[CITY, STATE ZIP]

Effective Date: [DATE]

Revision: [REV #]

Approved By: [NAME/TITLE]

1. PURPOSE & SCOPE

This Lockout/Tagout (LOTO) Program establishes the minimum requirements for the control of hazardous energy during servicing and maintenance of machines and equipment at [COMPANY NAME]. This program is designed to prevent the unexpected energization, startup, or release of stored energy that could cause injury to employees.

This program applies to all [COMPANY NAME] employees, contractors, and subcontractors who perform servicing, maintenance, or repair work on machines and equipment where the unexpected energization or release of stored energy could cause injury. This program covers all forms of hazardous energy including, but not limited to: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, and other energy sources.

This program does not apply to:

- Minor tool changes and adjustments that are routine, repetitive, and integral to the use of the equipment, provided work is performed using alternative protective measures
- Work on cord-and-plug-connected electrical equipment where the hazard is controlled by unplugging the equipment and the plug is under the exclusive control of the employee performing the work
- Hot tap operations involving transmission and distribution systems for gas, steam, water, or petroleum products when performed under established procedures and continuity of service is essential

2. REGULATORY REFERENCES

- 29 CFR 1910.147 — The Control of Hazardous Energy (Lockout/Tagout)
- 29 CFR 1910.333 — Selection and Use of Work Practices (Electrical)
- 29 CFR 1910.269 — Electric Power Generation, Transmission, and Distribution
- ANSI/ASSE Z244.1 — Control of Hazardous Energy
- NFPA 70E — Standard for Electrical Safety in the Workplace

3. DEFINITIONS

Authorized Employee: A person who locks out or tags out machines or equipment in order to perform servicing or maintenance. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing servicing or maintenance on a machine or equipment that must be locked or tagged out.

Affected Employee: An employee whose job requires operating or using a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires working in an area in which such servicing or maintenance is being performed.

Other Employee: An employee who may be in the area where energy control procedures are being implemented but is neither an authorized nor affected employee.

Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to: manually operated electrical circuit breakers, disconnect switches, manually operated switches, slide gates, slip blinds, line valves, blocks, and similar devices used to block or isolate energy. Push buttons, selector switches, and other control circuit type devices are NOT energy isolating devices.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Lockout Device: A device that uses a positive means (such as a lock, either key or combination type) to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Tagout Device: A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Zero Energy State: The condition achieved when all hazardous energy sources have been isolated, locked/tagged out, and verified as de-energized.

4. ROLES & RESPONSIBILITIES

4.1 Management/Program Administrator

- Establish, implement, and maintain this LOTO program
- Ensure adequate resources are available for program implementation (locks, tags, hasps, lockout devices)
- Ensure periodic inspections are conducted at least annually
- Ensure all affected employees receive appropriate training
- Review and update this program as necessary, but at least annually
- Maintain records of training, inspections, and equipment-specific procedures

4.2 Supervisors

- Ensure employees under their supervision comply with this program

- Ensure equipment-specific LOTO procedures are developed for all applicable machines and equipment
- Coordinate lockout/tagout activities with affected departments and contractors
- Ensure employees are trained and authorized before performing LOTO
- Participate in periodic inspections and enforce corrective actions

4.3 Authorized Employees

- Apply lockout/tagout devices in accordance with this program and equipment-specific procedures
- Perform servicing and maintenance activities only after verifying zero energy state
- Remove only their own locks and tags upon completion of work
- Notify affected employees before applying and removing LOTO devices
- Participate in required training and periodic inspections

4.4 Affected Employees

- Do not attempt to restart or re-energize machines or equipment that are locked/tagged out
- Understand the purpose and function of LOTO procedures
- Report any violations of this program to their supervisor
- Participate in required training

5. ENERGY SOURCE IDENTIFICATION

[COMPANY NAME] shall conduct a survey of all machines and equipment to identify all sources of hazardous energy. The following energy sources shall be identified and documented for each piece of equipment:

Energy Type	Examples	Isolation Methods
Electrical	Power supply, batteries, capacitors, static charge	Disconnect switch, circuit breaker, removal of fuses
Mechanical	Flywheels, springs, gears, belts, pulleys	Blocking, braking, disconnecting
Hydraulic	Hydraulic lines, accumulators, rams	Valve closure, bleeding, blanking
Pneumatic	Air lines, compressed gas cylinders, reservoirs	Valve closure, bleeding, disconnecting
Chemical	Process lines, tanks, piping systems	Double block & bleed, blanking, draining
Thermal	Steam lines, furnaces, heated materials	Valve closure, cooling, insulating
Gravitational	Elevated components, counterweights,	Blocking, pinning, cribbing, lowering

Energy Type	Examples	Isolation Methods
	suspended loads	
Stored/Residual	Capacitors, springs, elevated machine members	Grounding, repositioning, bleeding, blocking

Equipment-specific energy control procedures shall be developed for each machine or piece of equipment and shall include:

- A description of the machine/equipment and its intended use
- The specific location of all energy isolating devices
- The type and magnitude of energy the machine/equipment uses
- The specific steps required to shut down, isolate, block, and secure the machine/equipment
- The specific steps required to verify isolation and de-energization
- The specific steps for returning the machine/equipment to normal operation

6. LOCKOUT/TAGOUT PROCEDURES

6.1 Preparation for Shutdown

1. The authorized employee shall identify the type and magnitude of energy that the machine or equipment utilizes.
2. The authorized employee shall understand the hazards of the energy to be controlled and the method(s) to control the energy.
3. The authorized employee shall review the equipment-specific LOTO procedure.
4. The authorized employee shall notify all affected employees that servicing is required and that the machine/equipment will be shut down and locked out.
5. The authorized employee shall gather all necessary lockout/tagout devices and hardware.

6.2 Machine/Equipment Shutdown

6. Shut down the machine or equipment using the normal stopping procedure.
7. Operate all shut-down controls to bring the machine or equipment to a complete stop.
8. Move all control switches and selectors to the "OFF" or "NEUTRAL" position.

6.3 Machine/Equipment Isolation

9. Locate all energy isolating devices for the machine/equipment as identified in the equipment-specific procedure.
10. Operate all energy isolating devices to isolate the machine/equipment from its energy source(s).
11. Ensure all stored or residual energy is relieved, disconnected, restrained, or otherwise rendered safe.

6.4 Application of Lockout/Tagout Devices

12. Each authorized employee shall affix their individually assigned lock to each energy isolating device.
13. Each authorized employee shall attach a completed tagout tag to each lock identifying: the employee's name, date, department, reason for lockout, and expected duration.
14. Locks shall be applied so that the energy isolating device is held in the "safe" or "off" position.
15. Where a tagout device is used without a lock (only when lockout is not possible), the tag shall be attached at the same location the lock would have been placed.

6.5 Verification of Isolation (Zero Energy State)

16. After applying LOTO devices, verify that all energy sources have been isolated by attempting to restart the machine/equipment using normal operating controls.
17. Return operating controls to the "OFF" or "NEUTRAL" position after verification.
18. Test all electrical circuits using an appropriate voltage testing device to verify de-energization.
19. Verify that all stored/residual energy has been relieved (check pressure gauges, try moving mechanical parts, check for flow, temperature, etc.).
20. The machine/equipment is now in a zero energy state and servicing may begin.

6.6 Restoring Machine/Equipment to Service

21. Inspect the work area to ensure all tools, parts, and non-essential items have been removed.
22. Ensure all guards and safety devices have been reinstalled and are functional.
23. Verify all employees are clear of the machine/equipment and positioned safely.
24. Notify all affected employees that locks and tags are being removed and the machine/equipment will be re-energized.
25. Each authorized employee shall remove ONLY their own lock(s) and tag(s).
26. Re-energize the machine/equipment following the equipment-specific procedure.
27. Verify proper operation of the machine/equipment and all safety devices.

7. GROUP LOCKOUT/TAGOUT PROCEDURES

When servicing or maintenance is performed by a crew, crafts, departments, or other group, a group lockout/tagout procedure shall provide a level of protection equivalent to that provided by personal lockout/tagout devices.

28. A designated authorized employee shall be assigned overall responsibility for the group lockout/tagout.
29. The designated authorized employee shall ascertain the exposure status of all members of the group.
30. The designated authorized employee shall apply a group lockout device (multi-lock hasp) to each energy isolating device.
31. Each authorized employee in the group shall affix their personal lock to the group lockout device.
32. The designated authorized employee shall verify isolation and communicate the zero energy state to the group.
33. When work is completed, each authorized employee shall remove their personal lock.
34. The designated authorized employee shall remove the group lockout device only after all personal locks have been removed and all group members are accounted for.

7.1 Shift/Personnel Changes

When servicing extends across shifts, the following procedures shall be followed:

- The off-going shift's authorized employee(s) shall communicate the status of lockout to the on-coming shift's authorized employee(s).
- On-coming authorized employees shall apply their locks BEFORE off-going employees remove their locks.
- A documented transfer of lockout responsibility shall be completed at each shift change.

8. LOCK REMOVAL BY OTHER THAN THE APPLYING EMPLOYEE

In the rare situation where an authorized employee is not available to remove their lock, the following procedure shall be followed:

35. Verify that the authorized employee who applied the lock is not at the facility.
36. Make all reasonable efforts to contact the authorized employee to inform them that their lock is being removed.
37. The removal must be authorized by [COMPANY NAME] management (minimum Supervisor level).
38. Document the circumstances and authorization for the removal.
39. Ensure the authorized employee is informed that their lock was removed before they resume work at the facility.

NOTE: This procedure should be used only as a last resort. Management shall investigate why the lock was not removed through normal procedures and take corrective action.

9. ENERGY ISOLATION DEVICE REQUIREMENTS

9.1 Lockout Devices

- Shall be standardized within [COMPANY NAME] by color, shape, or size
- Shall be durable enough to withstand the environment for the maximum period of expected exposure
- Shall be substantial enough to prevent removal without the use of excessive force or unusual techniques (bolt cutters, etc.)
- Each authorized employee shall be assigned their own uniquely keyed lock(s)
- No two locks shall be keyed alike; master keys are prohibited
- Locks shall be identified with the authorized employee's name

9.2 Tagout Devices

- Shall be standardized in print and format
- Shall be durable enough to withstand the environment for the maximum period of expected exposure
- Shall be attached with a non-reusable, self-locking nylon cable tie (minimum 50 lb. tensile strength)
- Shall clearly state: "DANGER — DO NOT OPERATE" or equivalent warning
- Shall include: employee name, date, department, reason, expected duration

- Tags shall never be bypassed, ignored, or removed by anyone other than the person who applied it

9.3 Additional Lockout Hardware

- Multi-lock hasps for group lockout situations
- Valve lockout devices for ball valves, gate valves, and butterfly valves
- Circuit breaker lockouts for various breaker types
- Plug lockout devices for electrical plugs
- Pneumatic/hydraulic lockout devices
- Lockout stations/boards for organized storage of lockout equipment

10. PERIODIC INSPECTIONS

[COMPANY NAME] shall conduct a periodic inspection of the energy control procedure at least annually to ensure the procedure and the requirements of this program are being followed.

10.1 Inspection Requirements

- The inspection shall be performed by an authorized employee other than the one(s) using the energy control procedure being inspected.
- The inspection shall include a review between the inspector and each authorized employee of the employee's responsibilities under the energy control procedure.
- Where tagout is used, the inspection shall include a review between the inspector and each authorized and affected employee of that employee's responsibilities under the energy control procedure.

10.2 Inspection Documentation

Each periodic inspection shall be documented and shall include:

- The machine or equipment on which the procedure was being utilized
- The date of the inspection
- The employees included in the inspection
- The name and signature of the person performing the inspection
- Any deficiencies identified and corrective actions taken

Inspection records shall be maintained by [COMPANY NAME] for a minimum of three (3) years.

11. TRAINING REQUIREMENTS

11.1 Authorized Employee Training

Each authorized employee shall receive training in the following:

- Recognition of applicable hazardous energy sources
- Type and magnitude of energy available in the workplace
- Methods and means necessary for energy isolation and control
- Purpose and use of the energy control procedure
- Equipment-specific LOTO procedures for equipment they are authorized to service
- Proper use of lockout/tagout devices and hardware
- Verification of zero energy state
- Group lockout/tagout procedures
- Procedures for lock removal by other than the applying employee

11.2 Affected Employee Training

Each affected employee shall receive training in the following:

- The purpose and use of energy control procedures
- Recognition of when the energy control procedure is being implemented
- The prohibition against attempting to restart or re-energize equipment that is locked/tagged out

11.3 Other Employee Training

All other employees whose work operations are or may be in an area where energy control procedures may be used shall be instructed about the prohibition against removing lockout/tagout devices and attempting to restart equipment that is locked/tagged out.

11.4 Retraining

Retraining shall be provided:

- When there is a change in job assignments
- When there is a change in machines, equipment, or processes that present a new hazard
- When there is a change in the energy control procedures
- When a periodic inspection reveals inadequacies in the employee's knowledge or use of the procedure
- At minimum intervals as determined by [COMPANY NAME] (recommended: annually)

11.5 Training Documentation

Training records shall include the employee's name, date of training, topics covered, trainer's name, and shall be maintained for the duration of employment plus three (3) years. All training shall be documented and records retained by [COMPANY NAME].

12. RECORDKEEPING

[COMPANY NAME] shall maintain the following records:

- This written LOTO program (current and previous versions)
- Equipment-specific energy control procedures for all applicable machines/equipment
- Energy source survey/inventory documentation
- Employee training records (initial and retraining)
- Annual periodic inspection records
- Lock removal authorization records
- Incident/near-miss investigation reports related to LOTO

All records shall be maintained for a minimum of three (3) years and shall be made available to employees and their authorized representatives upon request.

13. CONTRACTOR COORDINATION

When outside contractors perform work that requires lockout/tagout:

- [COMPANY NAME] shall inform the contractor of the energy control procedures used at the facility.
- The contractor shall inform [COMPANY NAME] of their lockout/tagout procedures.
- [COMPANY NAME] and the contractor shall coordinate their energy control activities to ensure full protection of all employees.
- Contractor employees shall use their own locks (distinctly different from [COMPANY NAME] locks) and shall be trained in [COMPANY NAME]'s LOTO program requirements.

14. PROGRAM REVIEW & REVISION HISTORY

This program shall be reviewed at least annually or whenever changes in operations, equipment, or regulatory requirements necessitate a revision.

Revision #	Date	Description of Change	Approved By

APPENDIX A: LOTO PROCEDURE FORM

Complete this form for each piece of equipment requiring lockout/tagout procedures.

Field	Information
Equipment Name:	
Equipment ID/Number:	
Equipment Location:	
Date Prepared:	
Prepared By:	
Approved By:	

Energy Source Identification

Energy Type	Source/Location	Magnitude	Isolation Device	Isolation Method
Electrical				
Mechanical				
Hydraulic				
Pneumatic				
Chemical				
Thermal				
Gravitational				
Other:				

Lockout/Tagout Sequence

Step #	Procedure Description	Isolation Device Location
1		
2		
3		
4		

Step #	Procedure Description	Isolation Device Location
5		
6		
7		
8		

Verification of Zero Energy State

Verification Method	Result (Pass/Fail)	Verified By	Date

Restoring Equipment to Service

Step #	Procedure Description
1	
2	
3	
4	
5	

APPENDIX B: ANNUAL PERIODIC INSPECTION LOG

Use this form to document the required annual periodic inspection of energy control procedures per 29 CFR 1910.147(c)(6).

Field	Information
Inspection Date:	
Inspector Name:	
Inspector Signature:	
Equipment/Procedure Inspected:	
Location:	

Employees Reviewed During Inspection

Employee Name	Role (Auth/Affected)	Review Completed (Y/N)	Signature

Inspection Findings

Item #	Finding/Deficiency	Corrective Action Required	Date Corrected
1			
2			
3			
4			
5			

Inspector Certification

I certify that the periodic inspection was conducted in accordance with 29 CFR 1910.147(c)(6) and that the energy control procedure(s) identified above have been reviewed with the employees listed.

Inspector Signature: _____ Date: _____

Management Review: _____ Date: _____

FORBES SAFETY SOLUTIONS

Personal Protective Equipment (PPE) Program

Comprehensive PPE Hazard Assessment, Selection & Training

Prepared for:

[COMPANY NAME]

Reference Standards:

29 CFR 1910.132-138 | 29 CFR 1926.95-106

Date: [DATE] | Revision: [REV NUMBER]

Table of Contents

1. Purpose

This Personal Protective Equipment (PPE) Program establishes the requirements for the selection, use, maintenance, and training associated with personal protective equipment at [COMPANY NAME]. The purpose is to protect employees from workplace hazards that cannot be eliminated through engineering or administrative controls, in compliance with OSHA standards 29 CFR 1910.132-138 and 29 CFR 1926.95-106.

PPE is the last line of defense in the hierarchy of controls and shall be used when hazards cannot be adequately controlled by other means.

2. Scope

This program applies to all employees, contractors, temporary workers, and visitors at [COMPANY NAME] facilities and job sites where workplace hazards require the use of personal protective equipment.

This program covers the following categories of PPE:

- Head protection (hard hats, bump caps)
- Eye and face protection (safety glasses, goggles, face shields)
- Hand protection (gloves by hazard type)
- Foot protection (safety-toed footwear, metatarsal guards)
- Hearing protection (earplugs, earmuffs)
- Respiratory protection (see separate Respiratory Protection Program)
- Body/skin protection (high-visibility vests, protective clothing)
- Fall protection (see separate Fall Protection Program)

3. Responsibilities

3.1 Management

- Provide funding for all required PPE at no cost to employees
- Ensure hazard assessments are conducted and certified
- Support enforcement of PPE requirements
- Review and update this program at least annually

3.2 Safety Manager / Competent Person

- Conduct and certify workplace hazard assessments
- Select appropriate PPE based on identified hazards
- Coordinate PPE training for all affected employees
- Maintain records of hazard assessments, training, and PPE issuance
- Evaluate new PPE products and technologies
- Conduct periodic audits of PPE use and condition

3.3 Supervisors

- Enforce PPE requirements within their work areas
- Monitor employees for proper PPE use, fit, and condition
- Ensure new employees receive PPE training before beginning work
- Report PPE deficiencies and request replacement equipment

3.4 Employees

- Wear required PPE at all times when exposed to hazards
- Inspect PPE before each use and report defects
- Maintain and store PPE properly according to training
- Attend all required PPE training sessions
- Notify supervisor of any changes in hazard conditions

4. Hazard Assessment

4.1 Hazard Assessment Process

The Safety Manager shall conduct a hazard assessment of each work area and job task to identify sources of hazards that require PPE. The assessment shall follow the requirements of 29 CFR 1910.132(d) and include:

1. Walk-through survey of each work area
2. Identification of hazard sources (impact, penetration, compression, chemical, heat, harmful dust, light/radiation, biohazards, electrical, fall, noise)
3. Organization of findings by job classification and work area

4. Selection of appropriate PPE for each identified hazard
5. Written certification of the hazard assessment

4.2 Job-by-Job Hazard Assessment

Each job task shall be individually assessed. The following table provides a framework for documenting hazards by job task:

Job Task / Area	Hazard Type	Body Part at Risk	PPE Required
Welding Operations	Optical radiation, sparks, fumes	Eyes, face, hands, body	Welding helmet, safety glasses, leather gloves, FR clothing
Grinding / Cutting	Flying particles, noise	Eyes, face, ears, hands	Safety glasses w/ side shields, face shield, hearing protection, gloves
Chemical Handling	Splash, vapor, skin absorption	Eyes, face, hands, body	Chemical splash goggles, face shield, chemical-resistant gloves, apron
Overhead Work	Falling objects, impact	Head, feet	Hard hat (Type I or II), safety-toed footwear
Electrical Work	Shock, arc flash, burn	Head, eyes, hands, body	Dielectric hard hat, arc-rated face shield, insulated gloves, arc-rated clothing
Concrete / Masonry	Dust, abrasion, impact	Eyes, lungs, hands, knees	Safety glasses, dust mask/respirator, leather gloves, knee pads
Elevated Work (>6 ft)	Falls	Full body	Full body harness, lanyard, anchor (see Fall Protection Program)
[Add Job Tasks]	[Identify Hazards]	[Body Parts]	[Select PPE]

4.3 Certification of Hazard Assessment

Per 29 CFR 1910.132(d)(2), the hazard assessment must be certified in writing. The certification shall include:

- Identification of the workplace evaluated
- Name of the person performing the assessment
- Date(s) of the assessment

- Document identification as a certification of hazard assessment

See Appendix A for the PPE Hazard Assessment Certification Form.

5. PPE Selection

5.1 PPE Selection Table by Hazard Type

The following table provides guidance for selecting appropriate PPE based on the type of hazard identified during the assessment:

Hazard Category	Hazard Examples	PPE Type	Applicable Standard
Impact	Flying objects, falling tools	Hard hat, safety glasses w/ side shields, safety-toed shoes	ANSI Z89.1, ANSI Z87.1, ASTM F2413
Penetration	Sharp objects, nails	Puncture-resistant soles, cut-resistant gloves, safety glasses	ASTM F2413, ANSI/ISEA 105
Compression (rollover)	Heavy equipment, rolling objects	Safety-toed footwear (metatarsal guard)	ASTM F2413
Chemical exposure	Splashes, vapors, mists	Chemical splash goggles, face shield, chemical-resistant gloves, apron	ANSI Z87.1, manufacturer specs
Heat / Burns	Hot surfaces, sparks, flames	Leather gloves, FR clothing, welding helmet, face shield	NFPA 2112, ASTM F2302
Harmful dust	Silica, wood dust, metals	Dust mask or respirator, safety goggles	NIOSH 42 CFR Part 84
Optical radiation	Welding arc, lasers, UV	Welding helmet (proper shade), laser safety glasses	ANSI Z87.1, ANSI Z136
Noise (>85 dBA)	Machinery, power tools	Earplugs (NRR 25+), earmuffs (NRR 25+)	ANSI S3.19 / S12.6
Electrical	Shock, arc flash	Insulated gloves (class rated), dielectric footwear, arc-rated PPE	ASTM D120, NFPA 70E
Fall hazards	Elevated work >6 ft	Full body harness, SRL, lanyard, anchor	ANSI Z359.1

6. PPE Requirements by Body Part

6.1 Head Protection

Hard hats are required in all areas where there is a danger of head injury from falling objects, impact, or electrical contact. Per 29 CFR 1910.135 and 1926.100:

- Type I hard hats protect the top of the head from impact
- Type II hard hats protect the top and sides from impact
- Class E (Electrical) rated to 20,000 volts
- Class G (General) rated to 2,200 volts
- Class C (Conductive) provides no electrical protection

Hard hats shall be replaced when cracked, dented, or after any significant impact. Suspension systems shall be replaced per manufacturer guidelines. Hard hats shall not be painted, drilled, or modified.

6.2 Eye and Face Protection

Eye and face protection is required per 29 CFR 1910.133 and 1926.102 wherever there is a reasonable probability of injury from flying particles, molten metal, liquid chemicals, acids, caustic liquids, chemical gases/vapors, or light radiation.

- Safety glasses with side shields: minimum requirement for general hazard areas
- Safety goggles: chemical splash, dust, fine particles
- Face shields: used OVER safety glasses/goggles for additional protection
- Welding helmets: minimum shade per OSHA/ANSI welding shade guide

All eye/face protection shall meet ANSI Z87.1 and be marked with the manufacturer's mark and Z87+ for high-impact rating.

6.3 Hand Protection

Per 29 CFR 1910.138, appropriate hand protection shall be selected based on the specific hazards identified:

Hazard	Glove Type	Key Considerations
Cuts / Abrasion	Cut-resistant (ANSI/ISEA A2–A9 rating)	Match cut level to hazard severity
Chemical exposure	Chemical-resistant (nitrile, neoprene, butyl, PVA)	Check permeation data for specific chemicals

Heat / Flame	Leather, Kevlar, aluminized	Temperature rating must exceed exposure
Electrical	Insulated gloves (Class 00–4)	Must be tested per ASTM D120 every 6 months
Cold weather	Insulated, waterproof	Maintain dexterity for task performance
Welding	Leather welding gloves	Minimum gauntlet-style for arc welding

6.4 Foot Protection

Safety-toed footwear meeting ASTM F2413 is required in all areas where there is a danger of foot injuries from falling objects, compression, puncture, or electrical hazards. Requirements include:

- Impact-resistant toe cap (I/75 or I/50 rating)
- Compression-resistant toe (C/75 or C/50 rating)
- Puncture-resistant sole plate when required
- Metatarsal guards for heavy material handling
- Electrical hazard (EH) rated footwear in electrical work areas

6.5 Hearing Protection

Hearing protection is required for all employees exposed to noise levels at or above 85 dBA as an 8-hour TWA per 29 CFR 1910.95 and the company Hearing Conservation Program. Options include:

- Foam earplugs (NRR 25–33): disposable or reusable
- Pre-molded earplugs (NRR 22–27): reusable, custom-fit available
- Earmuffs (NRR 22–31): over-the-head or cap-mounted
- Dual protection (plugs + muffs): required when exposure exceeds 100 dBA

6.6 Respiratory Protection

Respiratory protection is addressed in the separate [COMPANY NAME] Respiratory Protection Program per 29 CFR 1910.134. When respiratory hazards are identified during the PPE hazard assessment, refer to the Respiratory Protection Program for proper selection, fit testing, medical evaluation, and training requirements.

7. Proper Fit and Use

All PPE must properly fit each affected employee. Where manufacturer sizing is available, employees shall be fitted according to manufacturer guidelines. Key requirements:

- PPE shall not create additional hazards (e.g., loose clothing near machinery)
- PPE must be compatible when multiple types are worn simultaneously (e.g., hard hat + earmuffs + safety glasses)
- Prescription eyewear wearers shall use safety glasses with prescription inserts, over-the-glasses (OTG) safety glasses, or prescription safety glasses meeting ANSI Z87.1
- Employees with medical conditions affecting PPE use shall be evaluated by occupational health

8. Inspection and Maintenance

Employees shall inspect PPE before each use. PPE that is damaged, defective, or has exceeded its service life shall be removed from service immediately.

8.1 Inspection Criteria

- Hard hats: Check shell for cracks, dents, penetration, UV degradation (chalky appearance); check suspension for fraying, cracking, or loss of elasticity
- Safety glasses/goggles: Check for scratched lenses, broken frames, missing side shields, damaged seals
- Gloves: Check for tears, punctures, chemical degradation, loss of flexibility
- Safety footwear: Check for exposed toe caps, sole separation, worn tread, damaged eyelets
- Fall protection harnesses: Follow manufacturer inspection criteria (webbing, buckles, D-rings, labels)
- Hearing protection: Check for hardening, deformation, cracking, broken headbands

8.2 Maintenance and Storage

- Clean PPE according to manufacturer instructions
- Store PPE in a clean, dry location away from sunlight and contaminants
- Do not modify or alter PPE in any way
- Replace PPE at manufacturer-recommended intervals or when defects are found
- Maintain an adequate inventory of replacement PPE

9. Employee-Owned PPE

Per 29 CFR 1910.132(h), where employees provide their own PPE, the employer is responsible to ensure that it is adequate, properly maintained, and sanitary.

- Employee-owned PPE must meet the same standards as employer-provided PPE
- The employer shall verify the adequacy of employee-owned PPE
- The employer is not required to reimburse employees for non-specialty safety-toed footwear, prescription safety glasses, or logging boots required by 29 CFR 1910.266(d)(1)(v)
- All other required PPE shall be provided by [COMPANY NAME] at no cost to employees

10. Training

Per 29 CFR 1910.132(f), each employee required to use PPE shall be trained to know at a minimum:

6. When PPE is necessary
7. What PPE is required for their specific job tasks
8. How to properly put on, take off, adjust, and wear PPE
9. The limitations of the PPE
10. The proper care, maintenance, useful life, and disposal of the PPE

10.1 Training Frequency

- Initial training: before job assignment requiring PPE
- Retraining required when:
 - Changes in the workplace render previous training inadequate
 - Changes in the types of PPE render previous training inadequate
 - Employee demonstrates lack of understanding or skill in proper PPE use

10.2 Training Verification

Each employee who has been trained shall demonstrate understanding of the training elements. Training shall be documented and include the employee's name, date, trainer's name, and topics covered.

11. Program Evaluation

[COMPANY NAME] shall evaluate the effectiveness of this program at least annually, or whenever conditions change that may affect PPE needs. Evaluation shall include:

- Review of workplace hazard assessments for accuracy
- Assessment of PPE selection adequacy

- Review of injury/illness records related to PPE
- Employee feedback on PPE comfort, fit, and effectiveness
- Audit of PPE use, condition, and compliance
- Review of new PPE technologies and products

12. Recordkeeping

The following records shall be maintained:

- Written hazard assessment certifications
- PPE issue records (type, date, employee)
- Training records (date, attendees, topics, trainer)
- Inspection and maintenance logs (as applicable)
- Program evaluation records

Records shall be retained for the duration of employment plus three (3) years.

Appendix A: PPE Hazard Assessment Certification Form

CERTIFICATION OF HAZARD ASSESSMENT FOR PPE

Per 29 CFR 1910.132(d)(2)

Company: _____

Work Area / Job Site: _____

Assessment Date: _____

Assessed By: _____

Title: _____

Hazards Identified:

Job Task / Area	Hazard Source	Hazard Type	Body Part(s)	PPE Required

Certification Statement:

I certify that a hazard assessment has been performed for the workplace identified above, that the assessment identified the hazards requiring personal protective equipment, and that the PPE specified above has been selected to protect affected employees from those hazards.

Assessor Name (Print): _____

Assessor Signature: _____

Date: _____

Reviewed By (Management): _____

Date: _____

Appendix B: PPE Issue Record

PERSONAL PROTECTIVE EQUIPMENT ISSUE RECORD

Employee Name: _____

Employee ID / Number: _____

Department / Crew: _____

Job Title: _____

Date	PPE Item Issued	Size	Qty	Condition	Reason (New/Replace)	Issued By	Employee Initials

Employee Acknowledgment:

I have received the PPE listed above and have been trained on its proper use, care, and maintenance. I understand that I am responsible for wearing the PPE as required and for reporting any defects or damage.

Employee Signature: _____

Date: _____

CONFINED SPACE ENTRY

29 CFR 1910.146 & 1926 Subpart AA

Presenter: _____

Date: _____

WHY THIS MATTERS

- From 2011 to 2018, 1,030 workers died in confined spaces — an average of 129 deaths per year (BLS Census of Fatal Occupational Injuries).
- More than 60% of confined space fatalities are would-be rescuers. The worker who goes in to save a buddy without proper equipment becomes the second victim.
- Atmospheric hazards are invisible killers: hydrogen sulfide (H₂S) deadens your sense of smell at high concentrations, carbon monoxide (CO) is odorless, and oxygen-deficient air gives no warning before you collapse.
- Permit-required confined spaces account for the majority of fatalities. The permit exists to force you through a checklist that keeps you alive.
- Construction now has its own confined space standard (29 CFR 1926 Subpart AA) — if you're in construction, you must follow it, not just the general industry rule.

Source: [BLS Confined Space Fatalities Fact Sheet](#)

ATMOSPHERIC TESTING & PERMIT ELEMENTS

- Test the atmosphere BEFORE entry, in this order: (1) Oxygen — must be 19.5% to 23.5%, (2) Flammability (LEL) — must be below 10% of the lower explosive limit, (3) Toxics — H2S below 10 ppm, CO below 25 ppm.
- Test at multiple levels — top, middle, and bottom of the space. Gases stratify: H2S is heavier than air (sinks), methane is lighter (rises), CO mixes evenly.
- Continuous atmospheric monitoring during the entire entry, not just at the start. Conditions change — welding, coating, or disturbing sludge can release deadly gases instantly.
- Entry permit must include: space identification, purpose of entry, date/time, authorized entrants, attendant name, atmospheric readings, rescue procedures, communication method, and entry supervisor signature.
- Permit-required vs. non-permit: A permit-required space has a recognized hazard (atmospheric, engulfment, configuration, or other). You can reclassify to non-permit ONLY by eliminating all hazards and documenting the basis.

ATTENDANT DUTIES & RESCUE PLANNING

- The attendant stays OUTSIDE the space for the entire entry. No exceptions. Their job is to monitor entrants, maintain communication, track who is inside, and summon rescue if anything goes wrong.
- The attendant must NEVER enter the space to attempt rescue. This is how 60% of confined space deaths happen. Your job is to call for help, not become the next victim.
- Communication must be continuous. If you lose contact with an entrant for any reason, initiate emergency procedures immediately — do not wait to see if they respond.
- Rescue planning: Non-entry rescue (retrieval systems with tripods and winches) is preferred. Entry rescue requires a trained rescue team with SCBA on standby. "Call 911" is not a rescue plan — municipal responders may not arrive equipped for confined space rescue.
- Every entrant must wear a chest or full-body harness attached to a retrieval line unless the retrieval line creates a greater hazard. The retrieval system must be in place and functional before anyone enters.

DISCUSSION QUESTIONS

Take 5 minutes to discuss with your crew:

1. Can you identify every confined space on this site? Which ones are permit-required and which are not?
2. If our gas monitor alarmed right now, what's the immediate procedure? Who do you contact first?
3. Who is the trained attendant for today's entry, and what are the three things they must never do?
4. If you saw a co-worker collapse in a confined space, what would you do — and what would you NOT do?

ATTENDANCE SIGN-OFF

Date: _____ Topic: Confined Space Entry Presenter: _____

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FALL PROTECTION

29 CFR 1926.501-503

Presenter: _____

Date: _____

FORBES SAFETY SOLUTIONS

TOOLBOX TALK

WHY THIS MATTERS

- Falls are the #1 killer in construction. In 2024, falls to a lower level caused 370 fatalities among construction and extraction workers — over a third of all construction deaths (BLS CFOI 2024).
- Fall Protection has been OSHA's most cited violation for 15 consecutive years, with over 7,000 citations issued in FY 2024 alone.
- The average fall fatality happens from just 6 to 10 feet. You don't need to be on a high-rise to die.
- Most fall deaths are 100% preventable. The equipment exists. The standards are clear. The gap is compliance.
- A single fall fatality can result in OSHA penalties exceeding \$150,000, criminal referrals, and project shutdowns.

Source: [OSHA Fall Prevention Campaign](#)

FORBES SAFETY SOLUTIONS

100% TIE-OFF & ANCHORAGE POINTS

- 100% tie-off means you are connected at ALL times when at 6 feet or above — no exceptions for "just a second" or "I'm almost done."
- Anchorage points must support 5,000 lbs per worker or be designed by a qualified person as part of a complete PFAS with a safety factor of 2.
- Never tie off to conduit, vents, antenna mounts, or anything you haven't verified. If you wouldn't hang your truck from it, don't hang yourself from it.
- When moving between anchorage points, use a dual-lanyard system so one hook is always connected before the other releases.
- Guardrails are the first line of defense — they protect without any action from the worker. Use them wherever feasible before defaulting to personal fall arrest.

HARNESS INSPECTION & RESCUE PLANNING

- Inspect harnesses before every use with the ABC method: A = Anchors/D-rings (centered between shoulder blades), B = Buckles/Belts (no fraying, all buckles lock), C = Connections/Straps (no cuts, burns, chemical damage).
- Any harness involved in a fall arrest event must be immediately removed from service and destroyed — no exceptions, even if it "looks fine."
- Rescue planning is not optional. OSHA requires a rescue plan BEFORE anyone goes to height. "Call 911" is not a rescue plan — suspension trauma can kill in under 30 minutes.
- Every crew working at height must have a rescue method available: self-rescue training, rescue team on standby, or mechanical retrieval equipment.
- Never modify, paint, or attach unauthorized items to fall protection equipment. If the manufacturer didn't put it there, it doesn't belong.

DISCUSSION QUESTIONS

Take 5 minutes to discuss with your crew:

1. Where on this jobsite are we most exposed to fall hazards today? Are all those areas controlled?
2. When was the last time you actually inspected your harness — and what would you look for?
3. If someone on your crew went into suspension right now, what's our plan to get them down in under 6 minutes?
4. Have you ever seen someone skip their tie-off "just for a second"? What would you say to them?

ATTENDANCE SIGN-OFF

Date: _____ Topic: Fall Protection Presenter: _____

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HEAT ILLNESS PREVENTION

OSHA Heat NEP & State Standards (CA, TX, AZ, NM)

Presenter: _____

Date: _____

WHY THIS MATTERS

- Heat killed at least 211 workers between 2017 and 2022, and those numbers significantly undercount the true toll — many heat deaths are recorded as heart attacks or falls (EPI/BLS data).
- An estimated 28,000 workplace injuries per year are directly linked to working on hot days, affecting virtually every industry including indoor work (GW/Harvard 2025 study).
- Injury risk starts climbing at a heat index of 85°F and rises steeply above 90°F. By the time it "feels hot," you're already in the danger zone.
- New and returning workers are at the highest risk. Over 50% of heat-related deaths occur in a worker's first few days on the job.
- States like California, Arizona, Texas, and New Mexico have specific heat regulations. Know your state's trigger temperatures and required rest breaks.

HEAT STROKE vs. HEAT EXHAUSTION

- HEAT EXHAUSTION: Heavy sweating, cold/clammy skin, weak pulse, nausea, dizziness, headache. The body is still trying to cool down. Move to shade, cool water, loosen clothing.
- HEAT STROKE: Body temp above 103°F, hot/red/DRY skin (sweating has stopped), rapid strong pulse, confusion, slurred speech, loss of consciousness. THIS IS A MEDICAL EMERGENCY — call 911 immediately.
- The critical difference: heat exhaustion is the warning, heat stroke is the failure. If you miss the warning, you're fighting for someone's life.
- Water-Rest-Shade is the rule. Drink water every 15-20 minutes even if you don't feel thirsty. By the time you're thirsty, you're already behind on hydration.
- Acclimatization protocol: New workers or those returning from 7+ days off must ramp up over 14 days — start at 20% workload on day 1 and increase by no more than 20% per day.

FIELD PROCEDURES & EMERGENCY RESPONSE

- Buddy system is mandatory in high-heat conditions. Never let someone work alone — confused workers don't recognize their own symptoms.
- Pre-shift planning: Check the heat index forecast. Above 80°F, increase water and shade. Above 90°F, implement mandatory rest cycles. Above 105°F, consider rescheduling work.
- Provide cool (not ice cold) drinking water at the rate of 1 quart per hour per worker, positioned within easy walking distance. No water = no work.
- Shade or air-conditioned rest areas must be available when temps exceed trigger levels. Workers showing ANY symptoms must be relieved immediately — do not wait for them to ask.
- Emergency action: If someone shows heat stroke signs (confusion, no sweating, hot skin), call 911 immediately, move them to shade, apply cold water/ice to neck, armpits, and groin. Do not give fluids if unconscious.

DISCUSSION QUESTIONS

Take 5 minutes to discuss with your crew:

1. How much water have you actually drunk today? Could you point to where the nearest water and shade station is right now?
2. Do we have any new workers on the crew this week? Are they on an acclimatization schedule?
3. What's the difference between heat exhaustion and heat stroke — and what do you do for each?
4. Who is your buddy today? Would you know if they were starting to show symptoms?

ATTENDANCE SIGN-OFF

Date: _____ Topic: Heat Illness Prevention Presenter: _____

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LOCKOUT/TAGOUT (LOTO)

29 CFR 1910.147

Presenter: _____

Date: _____

WHY THIS MATTERS

- Failure to control hazardous energy kills an estimated 48 workers per year and causes 17,690 lost-workday injuries (NSC 2023 data).
- OSHA estimates that proper compliance with the LOTO standard would prevent 120 fatalities and 50,000 injuries every year.
- LOTO violations are consistently in OSHA's Top 10 most cited standards. "I thought the power was off" has been the last thought of too many workers.
- Hazardous energy doesn't just mean electrical. Hydraulic lines hold pressure, springs store mechanical energy, pipes carry steam, and chemical reactions continue after shutdown.
- Every incident investigation involving uncontrolled energy comes back to the same root cause: someone skipped a step because they were in a hurry.

Source: [OSHA LOTO Fact Sheet](#)

ENERGY TYPES & ISOLATION PROCEDURES

- Six energy types to control: ELECTRICAL (disconnect and verify zero energy), MECHANICAL (block/secure moving parts), HYDRAULIC (bleed lines and block), PNEUMATIC (bleed air pressure), THERMAL (allow cool-down or insulate), CHEMICAL (drain, purge, or neutralize).
- Every piece of equipment must have a written, machine-specific LOTO procedure. Generic procedures get people killed — each machine has unique energy sources and isolation points.
- The isolation sequence: (1) Notify all affected employees, (2) Shut down equipment using normal stopping procedure, (3) Isolate ALL energy sources, (4) Apply YOUR lock and tag, (5) Verify zero energy state.
- Verification is the most skipped and most critical step. After lockout, attempt to start the equipment. Test circuits with a meter. Bleed trapped pressure. Verify. Every. Time.
- Tags are NOT locks. A tag is a warning device only — it does not physically prevent operation. Every worker in the danger zone must apply their own lock.

GROUP LOTO & CRITICAL RULES

- Group LOTO: When multiple crews work on the same equipment, a primary authorized employee coordinates lockout. Each worker still applies their own lock to a group lockbox.
- Shift change protocol: The outgoing shift cannot remove their locks until the incoming shift has applied theirs. There must be zero gap in protection.
- NEVER remove another person's lock. The only person who removes a lock is the person who put it on. If they left site, follow the employer's specific lock-removal procedure with supervisor authorization and documented verification.
- Try-out procedure after maintenance: Ensure all workers are clear, all tools removed, guards replaced, then remove locks in reverse order. The primary authorized employee removes the last lock.
- Annual inspections of LOTO procedures are required. An authorized employee who does NOT normally use the procedure must review it. Document the review with names, dates, and equipment covered.

DISCUSSION QUESTIONS

Take 5 minutes to discuss with your crew:

1. Can you name all the energy sources on the equipment you're working with today? Are you sure you've got them all?
2. When was the last time you actually tried to start a machine after locking it out to verify zero energy?
3. Have you ever been pressured to skip LOTO because the job would "only take a minute"? What happened?
4. If you found a lock on equipment with no tag or an unreadable tag, what would you do?

ATTENDANCE SIGN-OFF

Date: _____ Topic: Lockout/Tagout (LOTO) Presenter: _____

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TRENCHING & EXCAVATION SAFETY

29 CFR 1926.650-652

Presenter: _____

Date: _____

WHY THIS MATTERS

- Trench collapses killed 39 workers in 2022 — the worst year in a decade. Numbers dropped to 15 in 2023 and 12 in 2024 after OSHA's zero-tolerance enforcement push.
- One cubic yard of soil weighs as much as a car — roughly 3,000 lbs. A partial collapse can pin you in seconds and crush your chest so you can't breathe.
- 85% of all trenching fatalities from 2011-2021 occurred in the construction industry (CPWR/BLS data).
- OSHA has a zero-tolerance policy for unprotected trenches: immediate inspections, willful citations, and criminal prosecution referrals.
- The average rescue time for a buried worker is 6+ minutes. The survival window for full burial is about 4 minutes. You have to get it right before anyone goes in.

COMPETENT PERSON & SOIL CLASSIFICATION

- A Competent Person must be on site at all times when workers are in the trench. This person has the authority to shut down work immediately — no foreman override.
- The Competent Person classifies soil before any worker enters: Type A (most stable, e.g. clay), Type B (medium, e.g. crusite gravel), Type C (least stable, e.g. wet sand). When in doubt, assume Type C.
- Soil classification determines your protective system: Type A can use 3/4:1 slopes, Type B needs 1:1, Type C needs 1.5:1 — or use shoring/shielding.
- Previously disturbed soil is NEVER Type A, regardless of what it looks like. If a trench was backfilled and re-dug, default to Type B at best.
- Daily inspections are required before each shift, after rain, and after any event that could change conditions. Document everything.

PROTECTIVE SYSTEMS & ACCESS/EGRESS

- Three protective system options: SLOPING (cutting walls back at safe angles), SHORING (hydraulic or timber supports), or SHIELDING (trench boxes). Choose based on soil type, depth, and site conditions.
- Any trench 5 feet or deeper requires a protective system unless the Competent Person determines the excavation is in stable rock. No exceptions.
- Trenches 4 feet or deeper require a ladder, ramp, or stairway within 25 feet of every worker. You should never have to walk more than 25 feet to get out.
- Never stack spoil piles, equipment, or materials within 2 feet of the trench edge. That weight can trigger a collapse.
- Water accumulation is a collapse trigger. Pump standing water before entry and monitor continuously. Rain overnight? Re-inspect before anyone goes in.

DISCUSSION QUESTIONS

Take 5 minutes to discuss with your crew:

1. Who is the Competent Person on this site today? Does every crew member know who that is?
2. What soil type are we working in right now — and how was that classification made?
3. How far is the nearest exit point from where workers are in the trench? Is it within 25 feet?
4. If a wall started to crack or bulge right now, what's your immediate response?

ATTENDANCE SIGN-OFF

Date: _____ Topic: Trenching & Excavation Safety Presenter: _____

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