

Job Safety Analysis / PPE Guideline

Work Environment: Construction Sites

Definition: Property where mobile heavy equipment and machinery are used to build, maintain, or repair facilities and infrastructure. Characterized by a rapid change in the types and locations of hazards.

Examples: Pipeline repair; Concrete or Asphalt work; Excavation sites; Sites with scaffolding; Facilities in partial state of completion; Laydown areas where material or equipment is stored

Hazards: Large mobile equipment; Trench cave-ins; Exposure to underground/overhead utilities; Noise; Flying particles; Raw waste water; Flooding; Dust; Slips/Trips; Uneven terrain; Nearby traffic; Extreme weather; Abrasions, cuts/punctures, splinters and blisters from tools and construction materials; Limited lighting; Brush, tree limbs; Animals, insects; Incorrect lifting or tool use

Use Always Use as required PPE:	CONDITIONS OF USE:
X Safety glasses	Use tinted glasses outdoors during daytime Use clear glasses at night, when indoors, or low-light conditions
X Goggles, Indirectly Vented	Dusty environment, or splash hazards from corrosives or raw water
X Face Shield	When using tools that create flying particles, or using corrosives. Must wear safety glasses or goggles underneath face shield.
X Safety-toed work boots	Boots must cover ankles
X Safety-toed rubber boots/waders	Wet areas; at least one foot taller than depth of water
X Hard hat	Use with chin strap in windy conditions
X Reflective vest	Wear on outside of all garments; use type issued by SAWS
X Leather work gloves/mechanic gloves	Wear when using tools and jackhammers, or handling pipe or construction material, for better gripping & to avoid abrasions, cuts, punctures, blisters, and splinters
X Nitrile or Neoprene rubber gloves	To protect hands from untreated water, oils, or greases
X Ear plugs or muffs	Use when exposed to hazardous noise (> 85 dB; or if you must shout to be heard at a distance of 3 feet)
X Dust mask	Wear to reduce inhaled dust during jack-hammering, drilling, or cutting concrete and asphalt
X Water resistant coveralls	When entering water deeper than 1 foot
X Rain gear	Use during rain/snow events; Use to protect from water spray

Other Hazard Controls:

- Set up Work Zone Traffic Control for work along active roadways
- Call 811 (DIG TESS) to locate utilities before any excavation is attempted
- Use shoring and benching techniques as determined by a competent person trained in excavation
- Use fencing/barriers where applicable to mark open trenches and to keep non-construction workers away from the hazards
- Maintain hydration in hot weather; When exposed to sun, set up shade if possible, use neck shades, and apply sunblock every 2-3 hours
- Check the weather report; Seek shelter during extreme weather such as lightning or tornados
- Maintain training in First aid and CPR; maintain access to well-stocked first aid kit

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Work Environment: Industrial Facilities

Definition: Property with fixed equipment, machinery, and structures, intended to process materials or create a product. Characterized by many types of hazards, but minimal change in where the hazards are located. Includes parking areas for large industrial trucks and mobile machinery.

Examples: Pump Station; Treatment Plant; Heating and Cooling Plant; Machine Shop; Laboratory; Fleet Maintenance

NOTE: Where excavation takes place, or large mobile cranes or other heavy equipment is used, use Construction Sites Table

Hazards: Abrasions, cuts/punctures, and blisters from tools and materials; Large quantities of chemicals; Rotating machinery; Slips/Trips; Flying particles; Extreme weather; Raw waste water; Water, oils, or gases under pressure; Noise; Animals, insects; Nearby traffic

Use Always	Use as required	PPE:	CONDITIONS OF USE:
X		Safety glasses	Use tinted glasses outdoors during daytime Use clear glasses at night, when indoors, or low-light conditions
	X	Goggles, Indirectly Vented	Dusty environment, or splash hazards from corrosives or raw water
	X	Face Shield	When using tools that create flying particles, or using corrosives. Must wear safety glasses or goggles underneath face shield.
X		Safety-toed work boots	Boots must cover ankles
	X	Safety-toed rubber boots/waders	Wet areas; at least one foot taller than depth of water
	X	Leather work gloves/mechanic gloves	Wear when using tools or handling material, for better gripping, and to avoid abrasions, cuts, punctures, blisters, and splinters
	X	Nitrile or Neoprene rubber gloves	To protect hands from raw water, oils, or greases
	X	Ear plugs or muffs	Use when exposed to hazardous noise (> 85 dB; or if you must shout to be heard at a distance of 3 feet)
	X	Hard hat	Within swing radius of crane, with persons working above, or any overhead hazard; Use with chin strap in windy conditions
	X	Reflective vest or arm band	When on foot along roads or areas with frequent truck traffic
	X	Rubber Apron, Tyvek Suit, or Lab Coat	Use if splashing of sludge, acid/base, oily fluids is a possibility

Other Hazard Controls:

- Maintain hydration in hot weather; When exposed to sun, set up shade if possible, use neck shades, and apply sunblock every 2-3 hours
- Check the weather report; Seek shelter during extreme weather such as lightning or tornados
- Use rain gear or water resistant coveralls during storms or when required to enter water deeper than 1 foot
- Work in pairs when possible; carry a communication device and check in periodically if working alone
- Maintain training in First aid and CPR; maintain access to well-stocked first aid kit
- Consult SAWS Safety SOPs for exposures to the following activities: Confined Space Entry; Electrical System Repair; Hazardous Chemical Usage; Welding and Torch Cutting; Climbing or other Fall Hazards without handrails; Spill Response/Emergency Response

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Work Environment: Residential Areas

Definition: Houses, apartments, and small businesses intended to support neighborhoods

Examples: Meter reading or replacement; Leak tracing; Revenue Protection investigations

Hazards: Slips/Trips; Dogs and wild animals; Lifting and dropping meter covers; Nearby traffic; Insects, Spiders, Snakes; Wet weather; Surprised/Angry customers; Abrasions and blisters from tools; Brush and low tree limbs; Hot weather; UV radiation from sun

Use Always Use as required <i>PPE:</i>	<i>CONDITIONS OF USE:</i>
X Safety-toed work boots	Athletic-style safety-toed shoe is acceptable
X Safety glasses	Carry with you at all times; Mandatory use in alleyways and other locations with bushes and tree limbs at eye level Recommended to wear always, for UV protection of eyes Use clear glasses at night, or in low-light conditions
X Reflective vest or arm band	When on foot along roads with no sidewalk, or at night
X Leather work gloves/mechanic gloves	To prevent abrasions, blisters, and splinters when using simple tools
<i>Other Hazard Controls:</i>	
<ul style="list-style-type: none"> - Maintain hydration in hot weather; When directly exposed to sun, apply sunblock every 2-3 hours, and use neck shade or wet bandana - Take occasional breaks to remain alert for hazards - Check the weather report; Seek shelter during extreme weather such as lightning or tornados; Have rain gear available if needed - Know the rules for encountering dogs; do not yell at them or run because this may provoke them - Be deliberate, recognizable as a SAWS employee, and professional in all dealings with the public - Work in pairs when possible; carry a communication device and check in periodically if working alone - Maintain training in First aid and CPR; maintain access to well-stocked first aid kit 	

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Work Environment: Open Land

Definition: Farmland, brushy or wooded areas, or other undeveloped land

Examples: Resource Protection and Water Resources surveys; Security checks; Checking remote pump sites

NOTE: When drilling or excavation takes place, or cranes/mobile equipment are used, use Construction Sites Table

Hazards: Abrasions and blisters from tools and materials; Uneven terrain; Extreme/Hot weather; Driving; Wild animals; Insects, Spiders, Snakes; Flowing water; Darkness; Limited quantities of chemicals; Angry land owners; Use of all-terrain vehicles; Noise

Use Always Use as required <i>PPE:</i>	<i>CONDITIONS OF USE:</i>
X Safety glasses	For UV-protection of eyes, and exposure to bushes and tree limbs Use tinted glasses outdoors during daytime Use clear glasses at night, or low-light conditions
X Goggles, Indirectly Vented	Dusty environment, especially while driving all-terrain vehicle
X Face Shield	When using tools that create flying particles, such as a weedeater. Must wear safety glasses or goggles underneath face shield.
X Safety-toed work boots	Boots must cover ankles
X Snake guards	In spring and fall, when snakes are in season
X Safety-toed rubber boots/waders	In case of flowing water, or all-terrain vehicle gets stuck in mud
X Leather work gloves/mechanic gloves	Wear when using tools, handling material, or clearing brush, to avoid abrasions, blisters, splinters, and insect bites
X Nitrile or Neoprene rubber gloves	To protect hands from analysis kit chemicals, oils, or greases
X Ear plugs or muffs	Use when exposed to hazardous noise (> 85 dB; or if you must shout to be heard at a distance of 3 feet)
X Hard hat or helmet with chin strap	Use with all-terrain vehicle
X Rain gear	Use during rain storms

Other Hazard Controls:

- Maintain hydration in hot weather; When exposed to sun, set up shade if possible, use neck shades, and apply sunblock every 2-3 hours
- Broad-brimmed hat and wet bandana recommended in hot weather
- Take occasional breaks to remain alert for hazards
- Work in pairs when possible; carry a communication device and check in periodically if working alone
- Maintain training in First aid and CPR; Bring well-stocked first aid kit, flashlight, blanket, flat-tire repair kit
- Know the rules for encountering snakes, livestock, and wild animals
- Use the internet to know where the nearest hospital is and check weather report for possibility of severe weather
- Be deliberate, recognizable as a SAWS employee, and professional in all dealings with the public
- Operators of all-terrain vehicles must receive certification training from SAWS

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Work Environment: Open Water

Definition: Basin, tank, lake, river, or flowing water greater than 3 feet deep into which a worker enters intentionally, or into which a worker can fall from adjacent land, equipment, or boat

Examples: Treatment Plant weir cleaning; Maintenance of clarifiers when inside of handrails; Work on Mitchell Lake or other body of water

NOTE: Usually, SAWS employees will enter open water areas from a Construction Area, Industrial Facility, or Open Land; Employees must follow the rules of those areas before entering Open Water areas, and after exiting.

Hazards: Drowning; Extreme/Hot weather

Use Always Use as required <i>PPE:</i>	<i>CONDITIONS OF USE:</i>
X Safety glasses	For UV-protection of eyes; Use tinted glasses during daytime Use clear glasses at night, or low-light conditions
X Safety-toed work boots or safety-toed rubber boots/waders	Use rubber boots if intentionally entering water. Boots must be at least one foot taller than the water level.
X Personal Flotation device	Type II or V; consider automatic inflatable type V for comfort
X Leather work gloves/mechanic gloves	Wear when using tools, to avoid abrasions, blisters, splinters
X Water-resistant coveralls	If intentionally entering the water

Other Hazard Controls:

- Maintain hydration in hot weather; When directly exposed to sun, use sunblock every 2-3 hours, and use neck shade or wet bandana
- Take occasional breaks to remain alert for hazards
- Do not work in Open Water areas during severe weather
- Never work alone in Open Water areas; carry a communication device & check in periodically with someone outside the Open Water area
- When possible, at least one employee with a communication device should be outside the Open Water area observing all other employees
- Maintain training in First aid and CPR; maintain access to a well-stocked first aid kit
- At least 2 persons in crew will have Water Rescue training provided by SAWS

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Work Environment: Non-Industrial Facilities

Definition: Office areas of buildings, Parking areas for employees and SAWS light trucks, Marked crosswalks connecting office & parking.

NOTE: For maintenance work requiring more than simple hand tools, use Industrial Facilities Table

Hazards: Slips/Trips; Eye strain and Repetitive motions during computer use; Light lifting; Light chemical usage; Parking lot traffic

Use Always Use as required PPE:	CONDITIONS OF USE:
X Safety glasses	Custodians, and others doing light maintenance work
X Safety-toed work boots	Custodians, and others doing light maintenance work
X Nitrile or Neoprene rubber gloves	Custodians, while cleaning and collecting trash
X Leather work gloves/mechanic gloves	Wear when using tools, to avoid abrasions, blisters, splinters
Other Hazard Controls:	
<ul style="list-style-type: none"> - At least 1 in 10 trained in Fire Extinguishers, and First aid/CPR; maintain first aid kits on each floor and in each major area of facility - Set up computer work-station properly; take occasional breaks; learn and practice proper lifting techniques - Shut file and desk drawers when not in use; Keep hallways and aisles clear - Supervisors should do at least monthly checks of areas for hazards: electrical, blocked exits or extinguishers, housekeeping - Closed-toe shoes recommended 	