Heavy Equipment Hazards and Controls



Are you considering the following heavy-equipment-related hazards and safe work practices in your heavy equipment policies and programs? Whether you're creating a policy for the first time or reviewing and updating existing policies and procedures, use these recommendations as a guide for heavy equipment safety.

General Hazard Controls and Safe Work Practices

- All vehicles must have:
  - A service brake system, an emergency brake system, and a parking brake system
  - Working headlights, tail lights, and brake lights
  - An audible warning device (horn)
  - Intact windshield with working windshield wipers
- All operators must be trained on the equipment they will use.
- Check vehicles at the beginning of each shift to ensure parts, equipment, and accessories are in safe operating condition. Repair or replace any defective parts or equipment prior to use.
- Vehicles loaded from the top (e.g., dump trucks) must have cab shields or canopies to protect the operator while loading.
- Ensure vehicles used to transport workers have seats with operable seat belts and enough for the number of workers to be carried.
- Equipment should have roll-over protection and protection from falling debris hazards as needed.
- Prior to permitting construction equipment or vehicles onto an access roadway or grade, verify the roadway or grade is constructed and maintained to safely accommodate the equipment and vehicles involved.
- Do not modify the equipment's capacity or safety features without manufacturer's written approval.
- Maintain a safe distance from overhead power lines.

General PPE Requirements

1. Hard hat for overhead impact or electrical hazards.
2. Eye protection with side shields.
3. Gloves chosen for job hazards expected (e.g., heavy-duty leather work gloves for handling debris with sharp edges and/or chemical protective gloves appropriate for chemicals potentially contacted).
4. ANSI-approved protective footwear.

5. Respiratory protection as necessary.

Forklifts and Powered Industrial Trucks

1. Use rough-terrain trucks where conditions warrant their use.
2. Ensure that forklifts/PITs are not modified without the written approval of the manufacturer.
3. Ensure dockboards/bridgeplates can withstand expected loads and are properly secured before the equipment is slowly and carefully driven over it.
4. When lifting personnel only use platforms approved by the manufacturer.

Material Falling from Vehicles

1. Do not overload vehicles
2. Ensure loads are balanced and fully contained within the vehicle.
3. Cover and secure loads before moving vehicle.

Silica, Nuisance Dust, Dried Mud, Silt

1. Stay upwind of or away from dust-generating activities, and those involving crystalline silica-containing materials like concrete, brick, tile, drywall, mortar, sand, or stone.
2. Use water spray or mist to suppress dust generation, especially during operations that may create a lot of dust, such as cutting or sawing silica-containing materials, jack hammering, impact drilling, using heavy equipment, and demolishing structures.
3. Avoid using compressed air for cleaning surfaces.
4. Sample worker exposures to silica during dust-generating activities.

Additional Personal Protective Equipment

1. At a minimum, use respirators with N, R, or P95 filters for work with crystalline silica-containing materials (e.g., concrete, brick, tile, mortar).
2. The use of N, R, or P100 filters may provide additional protection. Higher levels of respiratory protection may be needed for some operations (e.g., cutting concrete, sandblasting, mixing concrete).
3. N, R, or P95 respirators may be used for nuisance dusts (e.g., dried mud, dirt, or silt) and mold (except mold remediation). Filters with a charcoal layer may be used for odors.

Noise

1. Use heavy equipment with enclosed, temperature-controlled cabs, when available
2. Place generators, compressors, and other noisy equipment at a distance or behind a barrier when possible

Fueling

1. Ensure ignition sources at least 25 feet away from fueling areas.
2. Prohibit smoking in fueling areas.
3. Ensure that vehicles are attended while being fueled.

Chemical Exposure

Have a plan if hazardous chemical containers are found or leaking materials are detected:

1. Do not use spark-producing devices (e.g., engines, tools, electronic, and communications equipment) in the immediate area.
2. Take self-protective measures (i.e., move to a safe distance upwind) and contact hazardous material response personnel for evaluation/removal before continuing work in the area.

Traffic Control

1. Develop and use a site plan that provides traffic flow details.
2. Use flaggers, traffic cones, and/or highway channeling devices.
3. Use flaggers, standard road signs (e.g., “work zone ahead”), or message boards to warn approaching vehicles of work area.
4. Give motorists plenty of warning of upcoming work zones; check for location specific requirements.
5. Ensure work zone is well lit, but control glare.