

International Hazard Datasheet on Occupation

Road Construction Worker

What is a Hazard Datasheet on Occupation?

This datasheet is one of the international Datasheets on Occupations. It is intended for those professionally concerned with health and safety at work: occupational physicians and nurses, safety engineers, hygienists, education and information specialists, inspectors, employers' representatives, workers' representatives, safety officers and other competent persons.

This datasheet lists, in a standard format, different hazards to which road construction worker may be exposed in the course of their normal work. This datasheet is a source of information rather than advice. With the knowledge of what causes injuries and diseases, is easier to design and implement suitable measures towards prevention.






Who is a road construction worker?

A road construction worker is someone who maintains highways, municipal and rural roads, airport runways, patching broken or eroded pavement, repairing guard rails, highway markers, and snow fences.

What is dangerous about this job?

- Struck by construction equipment and objects, contact with objects or equipment
- Transportation incidents, risk of being hit by heavy mechanical equipment/ vehicles working on a sites like run overs or back overs often by dump trucks
- Potential exposure to noxious dust while staying at the construction site
- Slips, trips, or falls
- Musculoskeletal system injuries due to overexertion, awkward postures
- Exposure to harmful substances or environments

Hazards related to this job

Accident Hazards 	Pedestrians and workers struck-by traffic, workers on foot near heavy equipment are at particular risk	1
	Fatalities when backed over by a truck or by other objects (tools, materials, parts of equipment, and trees)	2 3 4
	Fall hazards due to tripping over materials or debris or slips, trips, and falls while working on wet and slippery surfaces	4
	Accidental fall into a trench, excavation, which is deep and wide	5
Physical Hazards 	Workers can be exposed to extreme heat or work in hot environments and may be at risk of heat stress resulting in heat stroke, heat exhaustion, heat cramps, or heat rashes	2 6 7
	Exposure to UV radiation resulting in sunburns and skin cancer	2
	Workers are exposed to extreme cold or work in cold environments may be at risk of cold stress, hypothermia, frostbite, trench foot or chilblains	2 6 8
	Rough or sharp edges of tools might be present and could cause lacerations	2 4
	Exposure to noise and vibrations from engines and mechanical equipment, which has been linked to pain, low back pain, weakness, and numbness in the arms and hands. Noise exposure may also cause a temporary change in hearing or a temporary ringing in workers' ears (tinnitus)	2 10
	Electrical hazards due to contact with equipment's live electrical line	9
Chemical Hazards 	Exposure to hot tar or asphalt and getting onto skin	2 12
	Fumes created from heating asphalt which can be inhaled causing irritation of the nose, upper respiratory tract, skin, and eye resulting in headaches, fatigue, shortness of breath, wheezing, dizziness, and nausea	2 12
	Wet concrete can cause dermatitis, skin burns, allergic reactions	2 11
	Exposure to respirable dust from materials containing silica, engine exhaust gases, brick mortar, asphalt, sand, stone products, and rock aggregate or burning leading to eye irritation, acute asthma, allergic respiratory problems and chronic lung conditions	2 11 12
Biological Hazards 	Vector-borne infectious diseases, such as malaria, dengue fever, yellow fever, mosquito borne diseases including West Nile virus	2 13
	Exposure to poison ivy or oak or bites from animals like dogs or snakes	2 13
Ergonomic, Psychosocial and Organizational Factors 	Musculoskeletal disorders, like back pain, strain and sprains from awkward postures, heavy work, forceful exertions, static work postures, repetitive movements; lifting bulky and heavy loads, moving materials around the work site like steel, cement bags/bars, tools, manhole covers; mechanical tools causing vibrations resulting in painful arm conditions	14 15
	Stress and family problems due to shift-work; night work causing heightened dangers for workers; night shifts can create imbalance diet and may cause sleep disorders.	3 15

Preventive measures

1	When possible, set up the job site so equipment and materials flow in one single direction to minimize the need to back up; place cones or other warning signs/posts around equipment so workers and pedestrians are warned of hazards; keep workers out of lifting areas or from beneath loads; to avoid being struck by trees, restrict access during trimming
2	Use personal protective equipment (PPE) including fall and protection harnesses, goggles, respirators, and earplugs; anti-vibration gloves; knee, elbow, and shoulder pads
3	Enhanced traffic controls; clear driver guidance; workers must wear vests or other suitable garments marked with or made of reflective or high visibility material; ensure backing procedures are in place for mobile construction vehicles such as a spotter and drivers are in communication with workers on foot; motorists, bicyclists, and pedestrians should be guided in a clear and positive manner by use of temporary traffic control devices like signs, barricades, warning lights, traffic signals, or cones; ensure proper lighting within a work zone, controlling glare for workers and passing motorists; roadway construction workers, flaggers, mobile vehicle and equipment operators should be aware of blind spots around construction vehicles and they should receive specific training in the identification of these blind spots
4	Avoid muddy, wet, or icy surfaces; wear proper footwear; use proper equipment protection covers; maintain good housekeeping to prevent any additional tripping hazards by removing debris and excess materials in work area
5	Do not enter an unprotected trench; inspect the protected trench before entering include inspecting the excavation and adjacent areas and protective systems each day before the start of work, as needed throughout the shift and after every rain event
6	Emergency plans in place that specifies what to do if a worker has signs of heat or cold related illnesses and ensures that medical services are available if needed
7	Workers must have adequate, safe drinking water close to the work area and should drink small amounts frequently; even distribution of workload over the day with rest periods; training about hazards leading to heat stress and ways to prevent it
8	Provide warm liquids to workers and warm areas for use during break periods; schedule maintenance and repair jobs in colder areas for warmer months, if possible; wear water-resistant coats and boots; use relief workers or assign extra workers for long, demanding jobs
9	Post warning signs of any pipelines; have utility teams mark/flag areas and tag electrical power sources
10	Ensure workers' noise exposure does not exceed 85 decibels; use hearing protection devices like earplugs or muffs; training on the hazards from excessive noise exposures and preventative measures; monitoring workers hearing efficiency through audiometric testing
11	Workers should wash hands at the end of each work shift and prior to eating/drinking; any skin that comes in contact with potential skin irritants should be washed immediately
12	Training in good work practices for reducing exposure to asphalt fumes; respiratory protection by use of respirators
13	Avoid working outdoors when mosquitoes are most active and biting, most often at dawn and dusk; use insect repellents; do not burn poison ivy or oak plants; wear long sleeves and pants, boots and gloves; workers with a history of allergic reactions to insect bites or stings should consider carrying an epinephrine auto injector (EpiPen) and should wear a medical identification bracelet or necklace stating their allergy
14	Have workers take mini-breaks to rest and stretch out; training on how to use heavy equipment and safe lifting guidelines; work in pairs when lifting or lowering heavy tools/equipment in and out of trucks and use lifts when available; use carts when moving heavy equipment around the work site; clean and maintain all equipment regularly; padding on the shoulders can help protect the skin and distribute load; incorporate fatigue management into safety programs
15	Maintain a healthy diet and find time to exercise

Specialized Information

Synonyms	Highway maintenance worker; road maintenance worker
Definitions and/or description	Road construction worker (Standard Occupational Classification (SOC) System code 47-4051 Highway Maintenance Workers. Performs excavations in roads using mechanical or air pressure jackhammers to loosen road material. Operate vibratory tampers to compact material in layers. Transport of equipment to sites and carry out all other transport functions.
Related and specific occupations	Concreteer; construction worker; operator; collector; civil engineering construction.
Tasks	graveling ;operating; shoveling ;mixing; spreading concrete; operating; directing; loading and unloading; cleaning; maintaining, jackhammering ,drilling; excavating
Primary equipment used	Plow roller; rock drill; jack hammer; concrete breaker; asphalt cutter; rock; splitter; compactor; grinder; dozers; loader; shovel; excavator
Workplaces where the occupation is common	Construction areas; landscaping; tunnels, airports
References	<ul style="list-style-type: none"> Center, T. O. (2003). ERGONOMICS WORKING for Heavy and Highway Construction Laborers. Retrieved from www.OIOC.org: www.lhsfna.org_files_hh_ergo_manual_11-03 HIGHWAY WORK ZONE SAFETY. Retrieved from: http://www.cdc.gov/niosh/topics/highwayworkzones/ Occupational Employment Statistics. (2006, May). Retrieved from: http://www.bls.gov/oes/2006/may/oes474051.htm Pegula, S. (2010, November). Fatal occupational injuries at road construction sites, 2003–07. Monthly