

Road Construction and Maintenance Workers

Road construction and maintenance workers, like so many workers in other industries, are exposed to numerous hazards on the job. This fact sheet will draw attention to some of them, but it is only a guide.

Hazards

Physical Hazards

Noise

Road workers may be exposed to noise from many sources including heavy vehicles, passing traffic and pneumatic drills. Noise may

- be an annoyance,
- be distracting and result in diminished concentration,
- muffle verbal communication between workers, endangering safety, and
- result in hearing impairment which is irreversible.

Vibration

Long term exposure to vibration from equipment such as pneumatic drills, or transmitted from vehicles, especially when driving on uneven road surfaces, may result in health problems such as hand-arm vibration syndrome and back pain.

Electricity

Improperly insulated or ungrounded electrical equipment is dangerous, especially when wet. Heavy equipment such as overhead cranes may touch electrical cables and result in electrocution.

Safety Hazards

Moving parts on equipment and machinery may cause bruises, cuts or more serious injuries.

Vehicles and heavy equipment can become unstable on slopes or uneven road surfaces. This poses risks not only to the driver, but to other workers in the vicinity.

Vehicles may not have a good line of vision when reversing. If not warned, workers behind the vehicle may be seriously injured or even killed. Workers such as motor graders and mower, swather and snowplough operators are often require to work alone.

Dangerous situations can arise if they are injured or otherwise incapacitated.

Chemical Hazards

Asphalt used to pave or repair roads is applied when very hot. Hot asphalt is dangerous when it contacts the skin and can lead to severe burns. Asphalt fumes may cause fatigue, poor appetite, throat and eye irritation.

There is an association between long term exposure and certain forms of cancer.

Coal tar can sensitize the skin to sunlight thus making it more vulnerable to Ultra Violet Radiation. It is also a carcinogen.

Epoxy resins are used by mixing resin with a hardener. Composition varies depending on the commercial product used. Short term effects include skin irritation; there is a concern that long term exposure may cause cancer.

Gasoline and Diesel Exhaust gases contain large numbers of chemicals such as oxides of nitrogen, aldehydes, hydrocarbons, carbon monoxide and benzene. Some are skin and respiratory irritants, others are carcinogens. Carbon monoxide exposure may cause headaches and tiredness at low levels. At higher levels it can cause death by asphyxiation.

Climatic Hazards

Cold temperatures are uncomfortable. Being cold interferes with speed and accuracy. Exposure to extreme or prolonged cold may result in immersion foot, frostbite or hypothermia.

Ice on the road may cause vehicles to skid. It also reflects sunlight, increasing exposure to UV radiation.

Snow also causes glare. Blowing snow reduces visibility.

Heat excess can lead to rashes of the skin, heat cramps from salt depletion, exhaustion from salt/water loss and heat stroke.

UV radiation from sunlight can cause skin burns, damage the eyes and may lead to skin cancer.

Environmental Hazards

Insects such as bees, wasps, mosquitoes, ticks are mostly a nuisance. In addition, they can cause skin problems, allergic reactions and disease.

Vegetation such as moulds and spores can cause lung problems. Poison ivy and oak may result in allergic skin reactions. Dust and smoke in the environment cause respiratory irritation. Long term exposure to silica may result in permanent damage to lungs.

Passing traffic poses a risk of injury. Farmers' fields may blow pesticides or fertilizers into the air. Surrounding stack emission may contain hazardous chemicals.

Organization Hazards

Occupational factors such as long hours of work, noise and heat can lead to worker fatigue which may create dangerous situations, e.g., loss of concentration when reversing.

Reducing the Risk

It is always smarter to reduce or eliminate the hazard than to treat the problem after it has occurred. Many injuries and diseases are preventable. Risks may be reduced by control at the source such as changes to noisy vehicles and tools, at the interface with the worker by easily understood signs and proper guarding of moving parts or by providing personal protection to the worker.

Vehicles, Equipment, Machinery

- Ladders for access and egress should have non-skid rungs and there should be convenient handholds.
- Vehicles must allow for good visibility; visual and auditory alarms should be used when reversing.
- Moving parts should be guarded. There should be appropriate shields where there is danger of chemical splashes or flying road objects.
- Controls on equipment should be clearly marked and easily reached. Brightly painted hazardous parts will reduce the risk of contact.
- Contact with electrical equipment should be avoided especially when wet.
- There should be adequate training in the use of vehicles, equipment and machinery. Inspection and maintenance schedules must be strictly adhered to.

Noise. Where there is constant noise levels must be monitored to ensure they do not reach dangerous levels.

Exposure to noise can be minimized by using equipment designed to muffle sound, maintenance of equipment and by using sound absorbing material in vehicle cabs. If noise cannot be adequately reduced in this matter, hearing protection such as ear muffs or ear plugs must be used. Workers routinely exposed to noise should have proper training and have regular hearing tests.

Clothing must be appropriate for the time of year - winter/summer - and must offer protection from cold, rain and wind. Outer clothing should be reflective so it is easily seen. Work boots must be appropriate for the job with steel toes, steel sides, insulated soles as needed. Gloves must offer protection from the elements, contact irritation and injury. Goggles must protect from chemical splash, flying objects and glare. Most situations require the use of a hard hat.

Worksite

A worksite traffic control plan must be developed which is suited to the job and location. Work on busy highways should be scheduled for off-peak hours. All signals and devices must be delivered to the site in sufficient time for installation.

Traffic control methods must get passing motorist's attention, warn the driver, slow the driver, guide the driver around the worksite and return the driver to normal traffic.

Traffic control signals must be clearly visible, simple, allow time to understand and respond and be consistent. They include signs, lights, barricades, cones, drums, railings.

Working Alone

Where workers are required to work alone a proper plan must be in place. This should include identification of possible risks, means of minimizing the risks and means of seeking assistance should a mishap occur. A regularly scheduled communication system must be in place to alert control centres of possible mishaps.

If you need more information contact the

MFL Occupational Health Centre, Inc.
102-275 Broadway
Winnipeg, Manitoba, R3C 4M6
Phone: (204) 949-0811
Fax: (204) 956-0848
Toll Free: 1-888-843-1229 (Manitoba only)
Email: mflohc@mflohc.mb.ca
Website: www.mflohc.mb.ca