

Field Safety

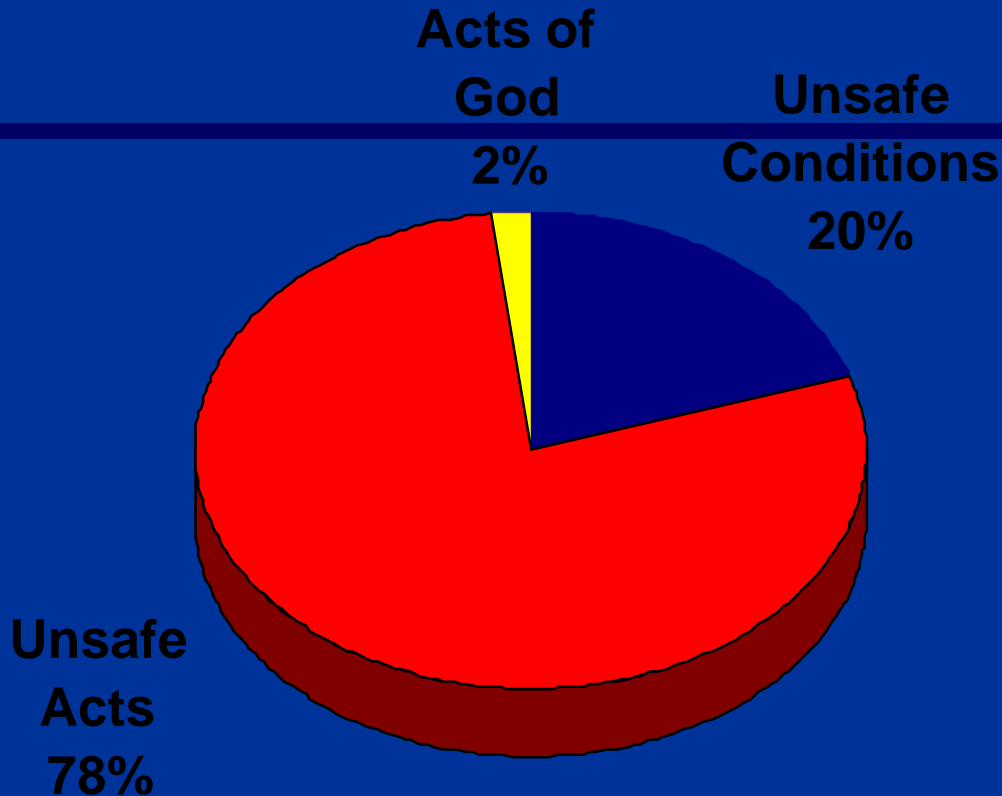


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UIC Inspector

Inspectors Face a Wide Variety of Environments and Situations

- Evaluating and protecting yourself from hazards is essential
- Over 60 percent of all work-related injuries occur during routine job assignments
- Many of these injuries could have been avoided or minimized if proper protective clothing or equipment had been used

What Causes Injuries?



■ UNSAFE CONDITIONS ■ UNSAFE ACTS
■ ACTS OF GOD

Plan, Avoid Complacency

- Plan ahead
- Driving is the most common source of workplace injury, so be careful
- Don't be so certain you know everything
- Ask if there are any risks to be aware of
- Don't become complacent

PPE

Personal protective equipment should not be used as a substitute for engineering, work practice, and/or administrative controls.

Personal protective equipment should be used in conjunction with these controls to provide for employee safety and health in the workplace.

Personal protective equipment includes all clothing and other work accessories designed to create a barrier against workplace hazards.

Selection of Personal Protective Clothing and Equipment

- Requires a detailed understanding of the hazards to be faced

- **Chemical**

- Inhalation
- Skin contact
- Ingestion

- **Mechanical**

- Falling objects
- Rotating parts

- **Physical**

- Noise
- Radiation

- **Thermal**

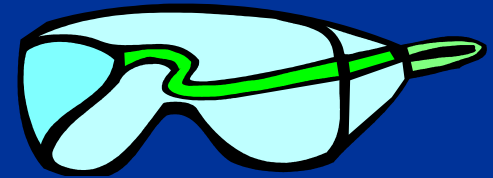
- Heat and cold

- **Electrical**

- Exposed live parts

Prepare Ahead of Time

- Use “worst case” scenario if hazards are not known
- Check available inventories
- Make sure the equipment fits properly



Using personal protective equipment requires hazard awareness and training on the part of the user.

Employees must be aware that the equipment does not eliminate the hazard. If the equipment fails, exposure will occur.

To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

Personal Protective Equipment

- Level D protection
 - Provides protection against “normal” workplace safety hazards
 - No contaminants are present *or*
 - Contaminants are present below levels where there is evidence of adverse health effects (e.g., below the TLV or PEL)
 - Work functions preclude splashes, immersion or potential for unexpected inhalations of any chemicals

Head Protection



- Hard hat
 - Must meet ANSI Z89.1-1969 and OSHA 29 CFR 1910.135 specifications
 - Provides protection from impact, flying particles and electrical shock
 - Required to be worn by all inspectors while within a control area, except in self-contained areas (e.g., truck cabs and field offices)
 - Hard hats are adjustable so that a liner can be worn during cold weather

TYPES OF HEAD PROTECTION

CLASS “A” HELMETS

For impact, penetration, and electrical protection from low-voltage conductors (tested to 2,200 volts).

CLASS “B” HELMETS

For impact, penetration, and electrical protection from high-voltage conductors (tested to 20,000 volts).

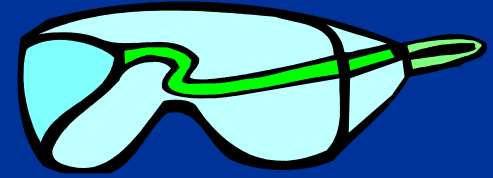
CLASS “C” HELMETS

For impact and penetration hazards only. Usually made of aluminum, which conducts electricity, and should not be worn around electrical hazards.



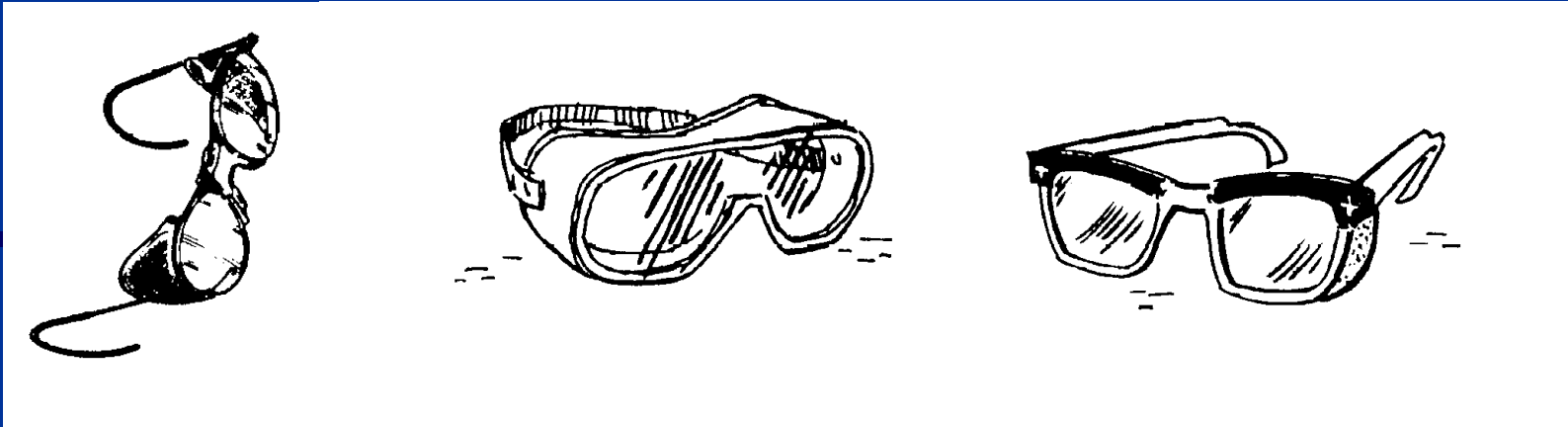
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Eye Protection



- Safety glasses
 - Must be worn at all times during field inspections **and** must meet the ANSI Eye Protection Standard Z87.1-1979
 - Precludes standard prescription glasses as a form of protection

EYE PROTECTION



Eye protection comes in different types. Goggles are designed for solid or liquid hazards that are airborne and in a quantity that there is a greater likelihood of contact with or near the eye. Safety eyeglasses with protective side shields are designed for eye protection when the hazard is more casual by nature and the hazard(s) is of low quantity and likelihood.

Foot Protection

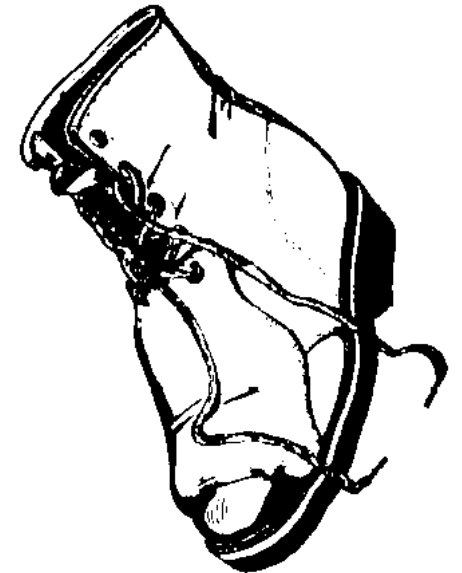


- Required for all field inspections
- Must meet the requirements and specifications of ANSI Z41.1-1967
- Should be selected with the type of hazard in mind (e.g., penetration, contamination by chemicals, ankle twists, slippery surfaces, cold, and static electricity)

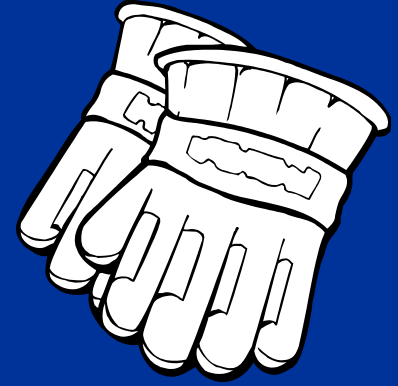
FOOT PROTECTION

Proper footwear can afford a level of protection for the feet and toes. Steel-toed boots or shoes protect toes against the crushing hazard of falling objects, such as involved with pipe moving or heavy material handling. Rubber boots protect the feet against chemical hazards. For chemical hazards, check with your MSDS'.

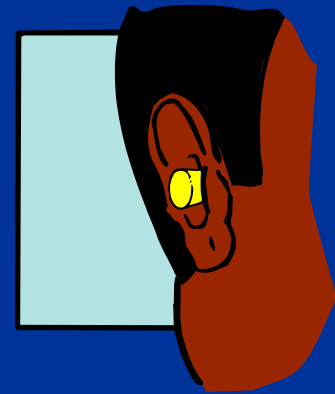
Footwear should also be selected based on protection from the walking/working surface. Construction sites with nails, or rough terrain including sharp rocks will require shoes or boots with sturdy, puncture-resistant soles.



General Protective Equipment



- When conditions warrant, gloves and hearing protectors **should be** worn
- Unreasonably loose, poorly fitted or torn clothing **should not** be worn
- Hazardous jewelry (e.g., finger rings and chain bracelets) **should not** be worn



General Safety Considerations

- Protective clothing can reduce an individual's hearing, vision and agility and can greatly increase the chance of injury
- Food, drinks, chewing gum or tobacco, cigarettes and medications that might increase hand to mouth transfer of toxic materials from gloves, unwashed hands or equipment should not be consumed
- Vehicles, with keys left inside, should be parked away from the control area

Transportation Safety

- Traffic accidents are the leading cause of death of U.S. workers
- Allow extra time for travel
- Plan your travel route ahead of time
- Get directions from owner/operator
- Know accident conditions (e.g., light, weather, road, traffic, vehicle, and driver)

Safety During Routine Inspections

- Wear protective equipment when entering any operating area
- Insist that any gauge calibration or sampling be performed by the operator
- Be aware of hazardous materials used in injection operations
- Refer to the permit for precautions and PPE that may be required
- Be aware of pressurized well components



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Heat and Cold Stress

- Prior to engaging in any field activity, an assessment should be made of weather conditions
- Be aware of physical abilities, limitations and medical conditions for yourself and others performing the inspection

Heat Stress

- **Heat cramps** are caused by profuse perspiration combined with inadequate fluid intake and electrolyte replacement
- **Heat exhaustion** signs are shallow breathing; pale, cool, moist skin; profuse sweating; dizziness; and lassitude
- **Heat stroke** signs are red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong rapid pulse; and coma

Good Work Practices

- Drink plenty of liquids before and during work activities
- Acclimate to site work conditions
- Use cooling devices to aid natural body ventilation
- Conduct field activities in the early morning or evening during hot weather

Cold Related Problems

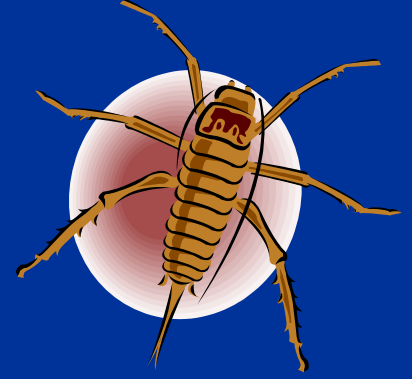
- **Frost nip or incipient frostbite** is characterized by the sudden blanching or whitening of skin
- **Superficial frostbite** occurs when the skin develops a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient
- **Deep frostbite** is characterized by the formation of cold, pale and solid tissues

Preventative Measures

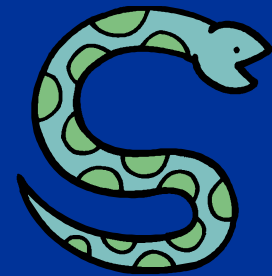
- Gloves
- Insulated clothing
- Warming shelters
- Rest periods
- Change of dry clothing



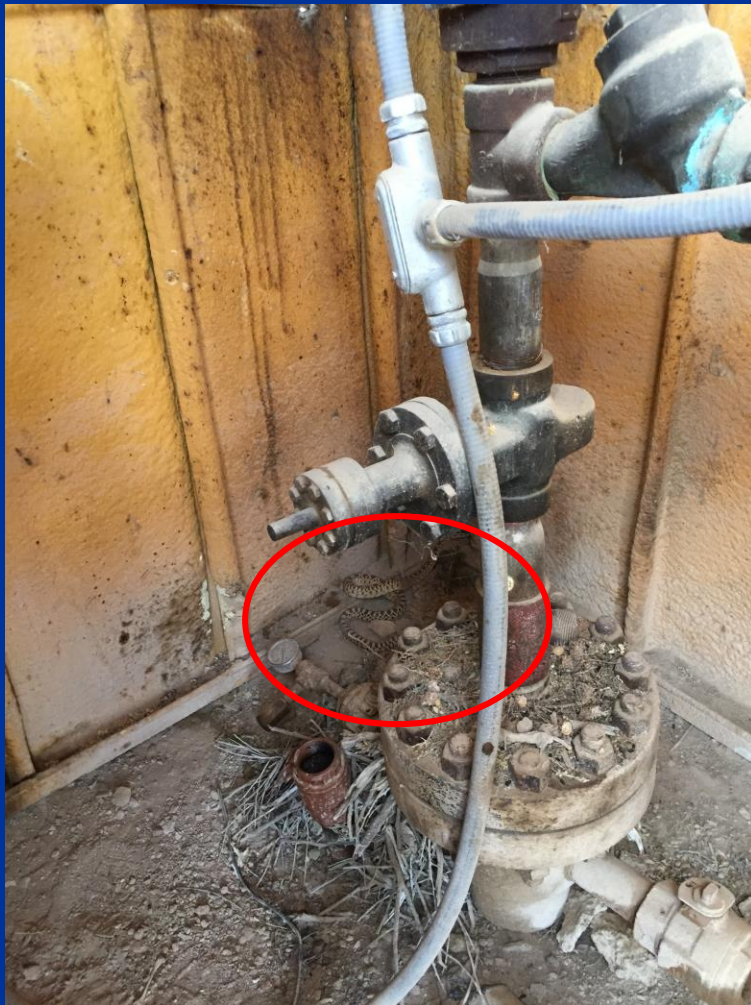
Biological Hazards



- The ability to identify and avoid biological hazards is a worker's best protection
- **Plants** such as poison ivy, poison oak, and poison sumac may cause a severe allergic response
- **Ticks** carry Rocky Mountain Spotted Fever and Lyme Disease
- Always be aware of the types of **spiders** and **poisonous snakes** that you may encounter



Biological Hazards



COMMON SOURCES OF H₂S

Naturally in nature

Oil Fields – Mines – Volcanoes – Geothermal Exploration

Through decay of organic matter

Fishing industry – Tanneries - Manure Processing

Municipal sewers - Brewery Industry – Landfills

Chemical Processes

By Product – Catalyst – Felt Making – Asphalt Roofing

H₂S or Toxic Gas Exposure

Hydrogen Sulfide – characterized by an odor of rotten eggs. A very small concentration can be fatal.

Hydrogen Sulfide is highly toxic, colorless, and heavier than air. It has the odor of rotten eggs, initially. But we develop insensitivity with more exposure.

It forms an explosive mixture with air. The LEL is 4.3% and the UEL is 45.5%.

When encountered, employees should take precautions and may need to wear approved respirator masks.

Any area where H₂S has been reported or encountered, or where there is insufficient oxygen, there should be NO entry until sufficient tests have been made to determine safety

Summary

- Plan your inspection and dress appropriately
- Make sure someone knows your travel plans and if possible work in pairs
- Be sure to have a cell phone in case of emergency
- Attend all safety meetings held at the worksite and pay attention

Summary

- Do not touch valves or other equipment
- Ask the operator! Be alert!
- Pay attention to the operator but remember that familiarity breeds complacency

What I Learned!

- If possible get assistance from other regulatory agencies
- Do not form an opinion prior to an inspection; keep an open mind!