

# How Does Working in Hot and High-Pressure Work Environments Severely Compromise Worker Safety?



## 2026 Joint Georgia Struck-By and Georgia Mental Health Alliances Stand Down: Score Goals at Work by Cooling Down Your Mind and Body!

### Focus on OSHA's Fatal Four

Working in hot and high-pressure environments, such as construction, mining, or manufacturing, severely compromises safety by inducing heat-related illnesses (heat stroke, exhaustion, cramps), increasing risk of burns from hot surfaces/steam, and causing physical/cognitive impairment.

#### Key Safety Impacts:

- **Severe Health Hazards:** Extreme heat causes rapid dehydration, dizziness, fatigue, and fatal heatstroke. Risk of heat rash, cramps, and deadly heat stroke or rhabdomyolysis.
- **Physical Hazards:** Heat leads to reduced reasoning ability, decreased fine motor dexterity, foggy safety glasses, foggy vision/vision impairment, and sweating, which causes poor grip/reduced grip strength (slipping/dropping tools), and increases incidents.
- **Mental/Cognitive Decline:** Slower reaction times, impaired judgment, and inability to understand directions. Heat stress reduces cognitive function, leading to poor decision-making, and inability to concentrate.
- **Increased Incident Risk:** Hot work (welding, cutting) increases risks of fire, explosions in confined spaces, and contact with hot metal. Direct contact with, or proximity to, hot machinery, surfaces, and steam can cause injuries.
- **Physical Strain:** High temperatures cause increased heart rates (up to 150 beats per minute) which makes the heart work harder to circulate blood to the skin for cooling. Leading to faster exhaustion, fatigue, reduced muscular coordination, and reduced capacity for physical work.
- **Cumulative Effects:** Lack of acclimatization for new workers and continued exposure without rest significantly boosts the risk of fatal incidents.
- **Contributing Factors:** High humidity, direct sun, heavy PPE, and lack of acclimatization.
- **Increased Error Rates:** Overheated workers are more likely to skip safety procedures, miss hazards, or make mistakes in high-stakes environments.
- **Behavioral Changes:** Severe heat stress can cause irritability, confusion, and sometimes, combative behavior.
- **Higher Injury Rates:** Studies show that when temperatures rise, the risk of injury increases, with a 10% to 15% higher likelihood of incidents.
- **Fatality Risk:** Over 90% of severe exertional injuries reported to OSHA can be heat-related, including numerous fatalities each year, particularly for workers not accustomed to the heat.
- **Risk Factors:** These issues are amplified by heavy physical labor, lack of rest, dehydration, and the use of heavy personal protective equipment (PPE).

OSHA's Fatal Four are the top causes of death in construction: Falls, Struck-By incidents, Electrocutions and Caught-In/Between hazards. They are responsible for over 60% of construction fatalities, often called the "Focus Four" due to their preventability through proper training and safety measures.

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## The Fatal Four Hazards Explained:

- **Falls:** Workers falling from heights (roofs, scaffolding, ladders) or through holes/openings.
- **Struck-By:** Being hit by falling, swinging, or moving objects like tools, materials, or equipment.
- **Electrocutions:** Contact with live electrical parts, exposed wiring, or overhead power lines.
- **Caught-In/Between:** Crushed between objects, falling into excavations (trench collapses), or caught in machinery/equipment.

Note: Roof surface temperatures can be 5 to 20 degrees Fahrenheit warmer than ground-level air, with dark, direct-sunlight roofs often reaching over 150 degrees Fahrenheit (65 Celsius), which can feel up to 40 degrees hotter than the ground.

## Why They Matter:

- **High Fatality Rate:** These four hazards account for the majority of construction worker deaths, making them critical for safety programs.
- **Focus for OSHA:** OSHA provides extensive training and resources, like the "Focus Four Training," to help eliminate these specific risks.

## References

### Occupational Safety and Health Administration (OSHA):

- [Heat Illness Prevention Campaign | Occupational Safety and Health Administration](#)
- [Construction Focus Four Training | Occupational Safety and Health Administration](#)