Safe Fuel Handling in Construction and Transportation

Fuel is essential to construction and transportation operations, powering heavy equipment, fleet vehicles, generators, and on-site machinery. But fuel is also one of the most common sources of serious workplace hazards, including fires, explosions, chemical exposure, environmental spills, and costly regulatory violations.

For OHS managers, safe fuel handling is both a frontline safety priority and a key part of compliance, training, and incident prevention- especially in Canadian workplaces where WHMIS, provincial OHS regulations, and environmental protection laws apply.

Whether fueling a loader on a jobsite or managing diesel storage for a trucking fleet, consistent safe practices reduce risks and protect workers, property, and the public.

Common Fuels That Require Safe Handling

Fuel hazards vary depending on the type of product being stored or transferred. Workplaces should treat all fuels as controlled hazardous materials.

Common fuels in construction and transportation include:

- **Gasoline** (highly flammable, fast-evaporating).
- **Diesel fuel** (lower flashpoint than gasoline but still combustible).
- **Propane** (compressed gas, explosion risk in enclosed spaces).
- **Natural gas** (flammable and difficult to detect without monitoring).
- **Kerosene** (used in heaters and some industrial equipment).
- **Jet fuel or aviation fuel** (in specialized transport environments).
- **Biofuels and blended fuels** (may still pose chemical and combustion risks).

Each requires proper labelling, storage, ventilation, and worker training.

How Fuel Handling Mistakes Commonly Happen

Incidents involving fuel often occur during routine tasks, not emergencies. Common errors include:

- Improper transfer practices (fueling without bonding/grounding).
- Using the wrong container or unapproved jerry cans.
- Spills during refuelling due to poor lighting or uneven ground.
- Smoking or ignition sources nearby.
- Fuel stored too close to heat, welding, or vehicle traffic.
- Lack of training for new or temporary workers.
- Misunderstanding WHMIS labels or SDS information.
- Failure to report small leaks, leading to larger hazards

over time.

Even minor lapses can result in fire, environmental contamination, or worker injury.

Safe Fuel Handling Checklist: Best Practices

OHS programs should include clear, enforceable fuel safety procedures. Use this checklist to strengthen controls across construction sites and transportation yards.

Fuel Storage and Labelling

- Store fuels only in approved, CSA-certified containers and tanks.
- Ensure all fuel containers are clearly labelled and WHMIS/OSHA-compliant.
- Keep storage areas locked, ventilated, and away from ignition sources.
- Post flammable hazard signage where required.

Refuelling and Transfer Safety

- Refuel only in designated areas with spill protection in place.
- Shut down engines and equipment before refuelling.
- Use bonding/grounding when transferring fuel to prevent static discharge.
- Never overfill tanks: leave room for expansion.

Fire Prevention Controls

- Maintain appropriate fire extinguishers near fueling areas.
- Prohibit smoking and open flames within safe distances.
- Control hot work (welding/cutting) near fuel storage

with permits.

Spill Prevention and Environmental Protection

- Keep spill kits accessible and ensure workers know how to use them.
- Train staff in immediate spill response and reporting procedures.
- Inspect hoses, pumps, and tanks regularly for leaks or damage.
- Follow jurisdictional environmental reporting requirements.

Worker Training and PPE

- Provide fuel handling training for all operators, drivers, and labourers.
- Ensure workers wear required PPE (gloves, eye protection, fire-resistant clothing where needed).
- Include safe fuel practices in onboarding for new hires and contractors.
- Reinforce procedures through toolbox talks and regular audits.

Transportation and Fleet Considerations

- Secure fuel containers during transport to prevent tipping or leakage.
- Never store fuel inside passenger compartments.
- Monitor bulk fuel tanks in fleet yards for tampering or corrosion.
- Maintain clear emergency shutdown procedures for fueling stations.