



## Combatting the Cold:

Construction must carry on year-round, through low temperatures, high winds, dampness, and cold water, which can cause workers cold-related stress and rapid loss of heat.

**Temporary heating devices** are important for allowing workers to work effectively and comfortably during these conditions. It's also important to understand how to prevent worker injury and property damage from burns, carbon monoxide poisoning, and oxygen deficient atmospheres, as well as potential fires or explosions caused by selecting and using temporary heating devices incorrectly.

## Portable Heating Devices:

### Direct-fired heaters

- Most common type used in the construction industry—typically uses propane and diesel but can also be fueled by natural gas and kerosene.
- Draws air from the area being heated directly across an open flame then returning the heated air back into the area.
- Not appropriate for use in tightly-sealed spaces or near flammable materials—depending on the fuel burned, condition of the heater, and the supply of air; combustion process produces carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO), other gasses, and suspended particles.

### Indirect-fired heaters

- Typically fueled by natural gas, propane, or diesel, and require electricity to burn the fuel in an enclosed combustion chamber.
- Outside air is heated by a flame and driven by a fan into the area being heated through air ducts. The circulated air does not come in contact with the flame.
- Can operate in tightly sealed spaces—does not release carbon dioxide into the space.

### Safety Tips

- Be sure heaters are in good condition and operating properly. If a heater is not working as it should, stop using it immediately, report the problem to a supervisor and ask for a replacement.
- Do not use heaters in an area where they can come in contact with combustible materials.
- Do not place a heater directly on a plywood floor. Instead, place it on a 4-foot by 4-foot square of fire-resistant drywall or cement-board.
- Protect all hoses from extreme heat and physical damage (including being pinched by a non-secured doorway or window) to ensure gas can easily flow to the heater.
- Keep propane tanks upright, on a firm and level surface that is at least six feet from the heater.
- Do not operate a heater in an unventilated area. Always open a few windows slightly to allow excess accumulation of fumes to escape.
- Never use heaters for cooking or warming/drying your clothing.