

Work Safe Bulletin

Temporary Heaters

The Cement Finishing Labour Relations Association represents the labour relations and safety interests of the cement finishing industry across Ontario.

The purpose of this document is to provide specific hazard information and promote discussion of safe work practices.

This bulletin does not contain a full analysis of the law, nor does it constitute a legal opinion. The CFLRA is not liable for any damages resulting from the use of this information.

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Background:

Temporary heat is used in cold temperatures to provide an adequate working environment for trades people and to protect materials from the effects of low temperatures as well.

In the past, constructors often used open-flame salamander type heaters to heat work areas. These heaters emit high volumes of carbon monoxide and carbon dioxide which can endanger workers and carbonate the new concrete surface.

Hazard:

Carbon monoxide poisoning is a significant hazard to all workers that can result in loss of consciousness and death ([See also WSB on CO](#)). Carbon dioxide emissions from these heaters can also react with the fresh cement surface to produce chalk (calcium carbonate) instead of a normal hardened concrete (calcium hydroxide).

Recommendations:

Each project has unique concrete characteristics that require careful consideration. It is strongly recommended that this issue be discussed at the preconstruction meeting with your safety representative. To reduce the possibility of an incident, it is recommended that the following be considered:

1. Ontario regulation 213 clause 49(5) prohibits the use of open flame heaters inside building spaces: *“A fuel-fired heating device that generates noxious products of combustion shall discharge the products of combustion outside the building or structure in which it is located. O. Reg. 213/91, s. 49 (5).”* Use indirect fired furnace-type heaters which circulate clean heat which is free of carbon monoxide and carbon dioxide.
2. *Concrete materials require protection such that they remain above a minimum temperature of 10°C to avoid an abnormal set that can lead to localized surface delaminations (see CSA A23.1-2009 Clause 7.2.4.9 & Table 20). Recent lab testing has shown that concrete materials abnormally retain concrete mix bleed water when exposed to cold temperatures.*

Further references:

- [Ontario Regulation for Construction Projects.](#)
- [Ontario Regulation 833 Control & Exposure to Biological or Chemical Agents.](#)
- [Ontario Ministry of Labour Occupational Exposure Limits](#)
- CSA A23.1-2009 (2014) Concrete Materials & Methods of Concrete Construction.