

Work Safe Bulletin

Carbon Monoxide (CO)

The Cement Finishing Labour Relations Association (CFLRA) is an employer organization promoting Concrete Floor trade safety in 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.

If you have any questions, please feel free to contact us at 289-837-1627 or by e-mail at safety@cflra.ca

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Background:

Carbon Monoxide (CO) is poisonous gas produced by fuel combustion which is tasteless & odorless.

Hazard:

Exposure to high concentrations of Carbon Monoxide (CO) can lead to headaches, fatigue, loss of consciousness, arrested breathing, heart failure and death.

Recommended Operational Procedure:

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

1. Ensure that the Occupational Exposure Limits established by Regulation 833 are not exceeded:
 - a) A Time Weighted Average (TWA) of less than 25 ppm for an 8 hour shift. This is reduced to 17 ppm average for a 10 hour shift.
 - b) A Short Term Exposure Limit (STEL) of 15 minutes, up to 4 times in an 8 hr shift, with 1 hour between exposures.
 - c) A Ceiling Limit of 125 ppm (work area evacuation).
2. Use Carbon Monoxide monitors to test the airborne concentrations. Ensure adequate fresh air and exhaust fume ventilation at all times.
3. Do not use open flame direct fired heaters inside buildings (Reg. 213 s. 49(5)).
4. Schedule over-lapping trade work to minimize CO accumulation.
5. Where possible, minimize the operation of gas powered equipment, including Concrete Trucks, inside the building.
6. Reduce fumes by turning off idling engines.
7. Ensure that all engines are tuned to minimize CO emissions.
8. Engine exhaust scrubbers reduce CO emissions by increasing the amount of Carbon Dioxide (CO₂) which must also be exhausted to reduce the chance of cement paste "carbonation".
9. Workers should watch for early signs of headache and fatigue.
10. Filtering engine exhaust fumes through water does not reduce the CO content of the exhaust.

References:

- [Ontario Regulation for Construction Projects.](#)
- [Ontario Regulation 833 Control & Exposure to Biological or Chemical Agents.](#)
- [Occupational Exposure Limits \(Ontario\)](#)
- [IHSA Guide to Carbon Monoxide.](#)
- Equipment manufacturers operation / instruction manual.