

Alert:

Hazards in Hardwood Floor Installation and Finishing Hazard Summary

Many solvent-based products are still widely used in the installation and finishing of hardwood floors. They are often highly flammable and/or combustible and pose a significant risk of fire and explosion. As well, when improperly handled they may cause acute or chronic health effects in workers.

The process of hardwood floor installation and finishing usually involves the use of three kinds of product:

1. An adhesive is used to apply wood flooring to concrete or other types of sub-floor.
2. A sanding sealer mixed with sawdust is applied to the sanded wood surface.
3. A varnish is applied as a top coat as soon as the sanding sealer has dried.

Improper handling of these products may present the following hazards:

- Fire or Explosion - The use of these products in enclosed and poorly ventilated areas may cause a significant build-up of vapours, to a point where sparks or open flames can ignite the vapours, causing a fire or explosion. The Ministry of Labour has investigated cases in which fires and explosions have resulted in fatalities.
- Inhalation of Vapours - These products contain organic solvents and other substances: epoxies, urea-formaldehyde, polyurethane, and nitrocellulose resins and additives. If the products are improperly handled, workers can be exposed to high levels of solvent or other vapours. Prolonged and repeated exposure to high levels of these vapours may produce both acute and chronic adverse health effects.
- Direct Skin Contact - Direct contact with these products can cause skin dermatitis and/or sensitization. Sufficient absorption through the skin could lead to adverse systemic health effects.

Locations and Sectors:

Construction or renovation of low rise and high rise residential and industrial, commercial and institutional buildings.

Required Measures and Procedures:

The manufacturer's instructions included in the Material Safety Data Sheets shall be strictly followed.

Adequate ventilation shall be provided to ensure a dilution rate of at least 25% of the Lower Explosion Limit (LEL) of the solvent vapour mixture in the air.

All open flames and sources of ignition that may be present in the area itself or within the heating and ventilation systems shall be eliminated.

All equipment present in the area shall be fire-resistant and explosion-proof.

Adequate respiratory protection shall be provided and used. Respirators shall be fitted to ensure an effective seal between the respirator and the worker's face.

A respirator program for the proper selection, use and maintenance of respirators shall be instituted. The program shall include written instruction for workers.

Protective gloves or cream barriers shall be provided to prevent direct skin contact with these products.

Workers shall be trained to follow good personal hygiene, in order to prevent skin dermatitis, sensitization and skin absorption.

Adequate product-specific training shall be provided to workers, as required under the WHMIS legislation [R.R.O. 1990, Reg. 860 as amended by O. Reg. 36/93].

Less toxic products should be used where these are available, to prevent both short-term and long-term adverse effects in workers.

Less flammable or non-flammable and non-combustible products should be used where these are available.

Safe Concrete Forming on Low-Rise Residential Construction Projects

Concrete forming on low-rise residential construction projects can be hazardous. The health and safety of workers must not be put at risk by the constant activity, the use of large equipment, and the handling of heavy material.

Some duties of workplace parties

Employers: Employer obligations under the Occupational Health and Safety Act (OHSA) include:

- ensuring workers are trained in fall hazards [O. Reg 213/91, s. 26.2 (1) (4)]
- appointing a competent person as supervisor [clause 25(2)(c)]
- taking every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)], and
- posting a copy of the occupational health and safety policy in the workplace, where workers will be most likely to see it [clause 25(2)(k)].

An employer with six or more workers must also:

- prepare an occupational health and safety policy, review that policy at least once a year, and set up a program to implement it [clause 25(2)(j)].

Supervisors: The OHSA sets out specific duties for workplace supervisors. A supervisor must:

- ensure workers work in compliance with the protective devices, measures and procedures required by the OHSA and regulations [section 27(1)(a)]
- take every precaution reasonable in the circumstances for the protection of workers [section 27(2)(c)].

Protecting workers

Employers and supervisors must ensure that all of the provisions of the OHSA and prescribed regulations are complied with by all workplace parties.

Health and safety considerations for low-rise concrete forming

- Have the specific work-related hazards been analyzed?
- Has specific training been provided to inspect hazards identified for low-rise concrete forming (e.g., fall protection, excavation safety, material handling, Workplace Hazardous Materials Information System (WHMIS), signalling/flagging)?
- Concrete pumping is encouraged; is there a level delivery area to allow trucks close enough to place concrete without additional chutes?

- Will any work be performed from ladders, scaffolds and work platforms? (Ensure correct size and use, and workers' competence.)
- Has entry to — and exit from — the work area been considered, and have ways been identified to keep this area free of obstructions? (Consider level ground, debris removal, proximity of forms to erection location.)
- Has proper equipment been provided for material handling to reduce the risk of overexertion or musculoskeletal disorders? (Consider forklifts, cranes, boom trucks, and other lifting devices.)
- Are workers trained in safe use of access equipment such as ladders, scaffolds, work platforms and powered elevating work platforms?
- Is hearing protection required?
- Have hazardous chemicals and other toxic substances been identified, and are there engineering controls and other safety measures in place to deal with them?

Inspector focus

When encountering concrete forming operations at low-rise residential construction projects, ministry inspectors will address the specific hazards identified in this fact sheet, making certain that employers, supervisors and workers comply with the Occupational Health and Safety Act and its regulations, especially the sections of the Construction Regulation (O. Reg. 213/91) that apply to these hazards.

More information about safety on construction projects

- Ministry of Labour, construction safety
- Infrastructure Health & Safety Association
- Workplace Safety & Insurance Board
- CSA standards (view only) referenced in occupational health and safety legislation