



Tread carefully

How to improve temporary stairs on residential construction sites

On residential construction sites, temporary stairs are often used before the permanent ones are built. If these stairs are improperly installed or poorly designed, they can be dangerous for workers, inspectors, and visitors to the site.

Temporary shouldn't mean dangerous

If temporary stairs are not installed properly, a worker may fall off or the stairs may collapse. The following are some common problems with temporary stairs:

- The stairway is not properly secured at the header and the base. This may cause the stairs to slip and slide when heavy weights are placed on them.
- The stairs are not in good condition. Cracked or missing steps, cleats or grooves may weaken the stairs and cause them to collapse under a heavy load.
- The bottom of the stairway is installed over a floor opening that may not be able to support a heavy load.
- The stairway is too long or short to attach to the floor correctly. For example, if an eight-foot stairway is connected to the floor nine feet above it, the stairway would have to be installed at an incorrect angle or a base would have to be added at the bottom.
- The stairway going down to the basement is installed without making allowance for pouring the concrete slab. If the stairs have to be raised or moved, it reduces their structural integrity and all connecting points.
- The stairway is installed at an improper location (e.g., it leads to a concrete wall instead of an entrance to the upper floor).
- A ramp used as a stairway does not meet the requirements for stairs in the Construction Projects regulation (213/91) under Ontario's *Occupational Health and Safety Act*. A ramp must not exceed a slope of 1:3 and does not have to support as heavy a load as stairs. (s. 73-74)
- Workers do not notice warning signs posted on temporary stairs that have not been installed properly.
- The stairs are too narrow. A buildup of ice and snow on the stairs may cause workers to slip and fall.

What the law says about making temporary stairs safe

- The best way to ensure that the temporary stairs on your project have been properly designed and installed is to follow the Construction Projects regulation (213/91). The section dealing with temporary stairs was clarified and amended in 2019. If a construction project has work areas above or below ground level, workers must be able to enter and leave those areas by stairs, a runway, a ramp, or a ladder. (s. 70(1))
- There must be adequate means of egress from the work areas for workers to be evacuated in an emergency. (s. 17 (1), s. 71)
- No work may be done in a structure unless stairs are installed according to the rules in Section 75. (s. 75(1))
- As the construction progresses, permanent or temporary stairs must be installed from the lowest level, including the basement, up to the top work level. However, if stairs would interfere with work on the top work level, the stairs may stop no more than two storeys or nine metres below the top level, whichever distance is shorter. (s. 75(2))
- The temporary stairs and landings must be designed, constructed, and maintained to support a live load of 4.8 kilonewtons per square metre without exceeding the allowable unit stresses for each material used. No temporary stair or landing may be loaded in excess of the load it is designed and constructed to bear. (s. 76(2))
- No work may be done in a building or structure with stairs unless the stairs meet the following requirements (s. 77 (1)):
 - A clear width of at least 500 millimetres
 - Treads and risers of uniform width, length, and height
 - Stringers with a maximum slope of 50 degrees from the horizontal
 - Landings that are less than 4.5 metres apart, measured vertically
 - A securely fastened and supported wooden handrail on the open sides of each flight
 - A guardrail on the open side of each landing

It is also important to know that a wooden handrail must measure 38 millimeters by 89 millimeters and must not have any loose knots, sharp edges, splinters, or shakes. (s.77(4))

Information for installers of temporary stairs

If you are responsible for installing temporary stairs on a site, here are some ways to make sure you have installed them correctly:

- Before installing the stairs, plan the layout and location to provide easy access between floors. Users should not have to change direction when entering or exiting the stairs. The vertical distance between the landings, the floor entrances, and the exits should always be the same.

- Inspect the stairs visually for any damage or defects before installing them.
- If you are installing a prefabricated stairway, follow the manufacturer's instructions and the Construction Projects regulation (213/91).
- If a prefabricated stairway has not been installed according to the manufacturer's specifications, erect some type of guardrail to physically prevent workers from using it. Warning signs on the stairway are not enough.
- Install a guardrail or handrail when it is required by Section 77 of the Construction Projects regulation (213/91).
- When a landing will be part of the temporary stairs, it should be installed before the stairs if possible.

Note: If handrails or guardrails are removed, they must be put back as soon as possible. As well, warning signs must be used, and fall protection may be required.



What you can do to protect yourself

Whether you're a worker, an inspector, or simply a visitor to a site, here are some things you can do to protect yourself before using temporary stairs:

- When you go onto a site where there are temporary stairs, make sure they are a safe way to enter or exit work areas that are located above or below ground level.
- Inspect the temporary stairs, headers, footers, and handrails to make sure they are in good condition.
- Check the temporary stairs to make sure they meet the requirements detailed in Section 77 of the Construction Projects regulation (see above).
- If you are not sure of the condition of the temporary stairs, or if you see a warning sign on the permanent stairs, do not use them. Check with the supervisor or employer or use another access way.
- Do not tamper with the stairway or make any changes to it.