

Construction Scaffolding



Fig 1

The major risks in the construction industry are related to falls from height involving persons, material or objects. Most of these risks are caused by a lack of good work practices. Work at height must be executed with suitable equipment in order to reduce the danger as much as possible. A type of equipment that is extensively used in construction, is scaffolding. This consists of a temporary structure that enables workers to gain access for work at height. There are several types of scaffolding, and their use depends on the location and the work requirements. This guide deals primarily with ground-mounted tower scaffolding.

Scaffolding is considered work equipment and is governed by two occupational health and safety regulations. These are the Work Equipment (Minimum Safety and Health Requirements) Regulations, S.L.424.35¹ and the Work Place (Minimum Health and Safety Requirements for Work at Construction Sites) Regulations, S.L. 424.36².

Scaffolding must be of a solid structure that offers protection for whoever is working on it. Depending on the complexity of the scaffolding chosen, an assembly, use and disassembling plan must be drawn up by a competent person. Scaffolding may be assembled, dismantled or significantly altered only under the supervision of a competent person and by workers who must have received appropriate and specific training. All the necessary precautions must be taken, such as enforcement, tying, signs and other measures in order to reduce the dangers while the work is being done. When the scaffolding is not yet ready for use, it must be properly marked with general warning signs in accordance with the Work Place (Provision of Health and, or Safety Signs) Regulations, S.L. 424.16³.

After the scaffolding is completed, it must be inspected and certified before it is put into service, subsequently, at periodic intervals and after any modification, exposure to bad weather or other circumstances affecting strength and stability, by competent persons

Scaffolding can be made of various materials including iron, wood as well as aluminium. Whatever the material with which the scaffolding is made, it must be strong enough for the type of work to be done, to avoid accidents. It must be ensured that the scaffolding is adequately maintained and kept in good condition.

¹ Available at: <https://legislation.mt/eli/sl/424.35/20160922/eng>

² Available at: <https://legislation.mt/eli/sl/424.36/20180326/eng>

³ Available at: <https://legislation.mt/eli/sl/424.16/20100722/eng>



Scaffolding must be tied and properly anchored so that it does not sway. If the fastenings have to be removed due to some alteration during the work process, this should be done piece by piece and not all at once. Scaffolding should never be erected during strong winds.

The employer must carry out a risk assessment of all work activities and take the necessary measures to safeguard the health and safety of the employees and other persons who may be affected by the work being carried out. This is a non-exhaustive list of points to consider:

- The work is carried out by workers well trained in the assembly, alteration and dismantling of scaffolding
- The work is done under the supervision of a competent person
- Scaffolding parts are inspected before assembly and defective parts are discarded
- Scaffolding feet are on a solid base
- Adequate protection and signs are installed for the safe passage of third parties and traffic
- Workers wear a safety harness and fall arrester linked to a secure anchorage and other personal protective equipment as necessary
- Scaffolding is built from the bottom up and dismantled in reverse
- Scaffolding is built from the internal to the external part and is dismantled in reverse
- Scaffolding is tied to a solid structure as it is being assembled and fastenings are removed gradually as it is being dismantled
- Ladders are installed for safe access at each level of the scaffolding
- Scaffolding pieces and other material must not be thrown from heights.

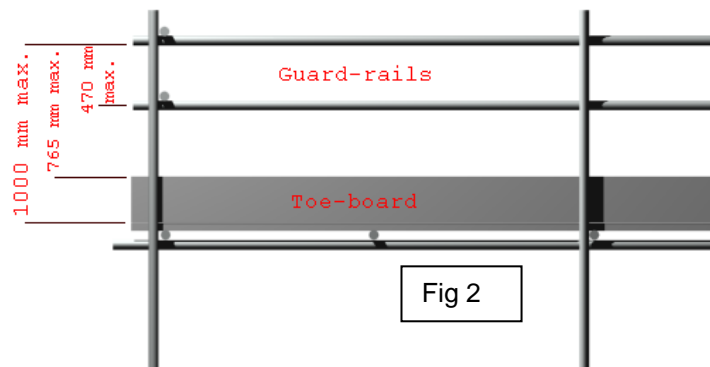
Gangways:

Each gangway, the scaffolding walkways, must be wide enough for the worker to pass comfortably through it during the execution of the work. This must not be angled more than 20° from the ground and must cover the entire opening.



Guard-Rails u Toe boards:

Guard rails and toe boards must be fitted on scaffolding to prevent a person, tool or other material from falling off it. The guard rails must be solid, where the highest one must be about 1000mm



from the flooring and the other one is in the middle between the toe board and the upper guard rail. Fig. 2 shows typical dimensions. If one has to remove the guard rails and toe boards to be able to pass material or tools, these should be put back in place as soon as possible. Do not load heavy objects on the scaffolding, more than the design limit. Make sure that the scaffolding planks are not painted so that any defects are visible.

Some causes of scaffolding accidents include:

- Scaffolding is not assembled properly and not by a competent person.
- Lack of maintenance.
- The ratio between the height and the width of the scaffolding is too large, e.g. very tall but narrow.
- Heavy objects placed at the on top, in a way that it compromises the stability of the scaffolding.
- A ladder is placed on top, on the platform, to reach further.
- Work causing strong vibrations is done on the scaffolding.
- Mobile scaffolding is moved with people on it.
- Scaffolding is not mounted on a good, solid base.
- Scaffolding not properly anchored or tied.
- When a person climbs from the outside instead of the inside

Scaffolding Height Limitations

See that the scaffolding is stable and that the ratio of the height to the base is according to the design of the competent person or the manufacturer's instructions. Due consideration should be given to the location of the scaffolding and exposure to bad weather. When a weight is placed on the scaffolding, it raises the centre of gravity and thus can cause the scaffolding to tip over. In this case, it is therefore recommended to consult a competent person.

The Scaffolding Structure

The tower must be vertical and the base must be on solid and level ground. It must be ensured that the ground can withstand the weight of the scaffolding and any other loads on it. The structure varies according to the type of work with the measurement between each section being of an adequate dimension to guarantee the stability of the scaffolding. The feet of mobile scaffolding must be on solid wheels, as well as having locks and brakes that must not be accidentally released. If the scaffolding is built on a sidewalk, it must be ensured that pedestrians passing under it have sufficient space and are well protected.

Netting, signs or other material should not be affixed to the scaffolding if these are not catered for in the design. These could be the cause of the collapse of the structure in the case of strong winds.

Safe use of Scaffolding

- Never move scaffolding with people or material on it.
- Always move the scaffolding by pushing or pulling from the base.
- Never use any means of transport to move scaffolding, such as a forklift or truck.
- Use wheel locks when using non-static scaffolding.
- Never climb onto scaffolding if the wheels are not locked and level with the ground.
- Do not load extra material on the scaffolding platform.
- Keep scaffolding away from power lines.
- Avoid working on scaffolding in very bad weather.



Fig 3

Safe Access

Access to scaffolding must be done from the ground, or from the roof, or other levels depending on the height of the scaffolding and the location of the work. If access is gained from the ground, it should preferably be done by means of ladders, however if it is going to be done from the roof or other levels, one must make sure that adequate guard rails are installed.

Construction Sites

When this type of equipment is used in construction sites, the specific requirements of the Work Place (Minimum Health and Safety Requirements for Work at Construction Sites) Regulations, S.L.424.36 (L.N. 88/2018) also apply. The project supervisor⁴ must ensure that the health and safety plan contain the plan for performing this work and that this is communicated and understood by all contractors concerned. The contractor/s must take into account instructions issued by the project supervisor.

The Client⁵ must take account of any report given in writing by the project supervisor and must also take all reasonable measures to ensure that duty holders abide by their obligations within the limits of their respective responsibilities for the adequate safeguard of occupational health and safety.

If you cannot work from the ground or from the building, it is better to work from a scaffolding than from a ladder (where you have to lean over) or from a suspended plank. Always use scaffolding for its designed purpose, and make sure it is anchored and secured to the building.

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The information provided in this Guidance does not, and is not intended to, constitute legal advice; the information is for general purposes only and to serve as a guidance for duty holders to ensure a safe system of work and a safe place of work. The information provided in this Guidance may also be cited as examples of good practice by the Occupational Health and Safety Authority during workplace inspections and in Law Courts. In addition, every effort has been made to ensure that the information in this document is correct and provided in good faith according to regulations and current best practice - it is also strongly recommended that one should consider all relevant regulations related to this subject.

⁴ The Project Supervisor is the natural or legal person appointed by the Client in terms of regulation 3 of the Work Place (Minimum Health and Safety Requirements for Work at Construction Sites), S.L.424.36 (*ibid.*). The project supervisor is responsible for the health and safety supervision of the project

⁵ The Client is the natural or legal person for whom a project is carried out, i.e. the owner of the site. (*ibid.*)



References

<https://www.hse.gov.uk/construction/safetytopics/scaffoldinginfo.htm#inspection>

https://ohsguide.ihsa.ca/en/topic/scaffolds_erection.html#:~:text=Every%20scaffolding%20must%20be%20erected,out%20in%20the%20design%20drawings.&text=The%20erection%20of%20a%20supported,supervision%20of%20a%20competent%20worker%20.

https://assets.ctfassets.net/ii3xdrqc6nfw/1CZxf5iNnmomM2iemMuiYQ/2eabe63d0f51881c7848d9ea8c9f4c49/Scaffolding_and_hoarding_-_Terms_and_conditions.pdf

https://easyhomebuilds.com/scaffolding-erection-dismantle/#Scaffolding_safety_in_Dismantle

Image Sources

Fig 1. <https://www.optimumsafetymanagement.com/wp-content/uploads/2018/06/scaffold-safety-construction-focus-1080x675.jpg>

Fig 2. <https://www.indiamart.com/proddetail/toe-board-5371343762.html>

Fig 3. https://www.sgb-aluma.my/products/scaffolding/modular_scaffold/cuplok_scaffold

Further Information

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