

## Accident prevention during work at heights

The construction industry is a field where the indicators for the frequency rate of occupational accidents is unfavourable on a long-term basis, namely due to the high number of serious accidents (severe and fatal) often resulting from falls from heights. The highest numbers of serious accidents occur in small and medium-size construction companies, however the information contained in this leaflet is intended for all business entities performing construction activities.

### Fundamental duties of the employer

- With respect to the potential hazard risks to their lives and health. The employer must secure occupational safety and health for third parties that are present at the place of work with the employer's knowledge as well.
- The employer must provide employees with sufficient training in occupational safety and health concerning work at heights and above free point, in particular where work at heights exceeding 1.5 m is concerned, when employees cannot work from fixed and safe working floors, when they work on mobile work platforms, on ladders at heights exceeding 5 m and in the use of personal protective equipment.
- The employer is obliged to identify risks, establish their causes and sources and adopt measures for their elimination.
- The employer must provide employees with personal protective equipment, which must protect employees against risks and which must not prevent them from performing their work.

### Work at height

- Work at height and above free point refers to the work and movement of an employee, during which an employee is in danger of falling from a height, a fall to a depth, in danger of falling-through or collapsing. When performing such activity, an employee must be secured against a fall. Protection of employees against a fall should be realized by means of collective or personal security, namely independent of height in all places of work and communications above water or other substances where harm to health is imminent and at heights exceeding 1.5 m in all places of work and communications.
- The term "collective security" refers to protective and catchment structures. The requirements for them are provided in the respective standards. In addition to standard requirements, it is necessary to comply with the instructions for the installation and the use of such structures, or with specifically designed technological procedures.
- When using collective security against a fall from a free edge, as well as against falling-through a structure, with an insufficient bearing strength, it is possible, on continuous surfaces, to only protect a defined place of work instead of the entire surface.
- "Personal security", i.e. personal protective equipment against a fall must be applied in cases when the nature of the work does not allow or complicates the use of a technical structure in a considerable manner.
- It is not only necessary to protect employees against a fall but also all material, tools and auxiliaries. They need to be put or stored at heights so that they are secured

against a fall, slipping or being blown down by wind for the entire period concerned, not only in the course of work but also after its completion.

- Areas, above which work is being performed, should be secured so that a threat to both employees and the interests of third parties is eliminated.

## Principles concerning work performed at gradually increasing heights

- When performing work, the height of which gradually increases, the level of the place of work above ground must be increased in a way that allows employees to work in a safe manner that does not endanger each other and enables them to work at a normal working height. Unstable objects must not be used for climbing or increasing the height of a place of work.
- Places of work must be safely accessible along communications. These include ladders, ramps, stairs, etc. Even provisional climbing must comply with all safety requirements.

## Fundamental requirements for implementation

- Protective railing
  - the height of a railing must be a minimum of 1.1 m (in case of scaffolding, a height of 1.0 m is acceptable), an integral part of the railing must be a safety stop on the floor, minimum 150 mm high,
  - a single-bar railing with a stop must be used if the height of the protected place of work is within the range of 1.5 m - 2.0 m above the surrounding environment,
  - a two-bar railing with a stop must be used when the height of the protected place of work above the surrounding environment exceeds 2 m; the middle bar may be substituted with suitable panelling.
- Scaffolding
  - for all scaffolding, technical documentation including instructions for installation and dismantling must be available,
  - during installation, operation and dismantling of scaffolding, safe transport, including movement of passers-by on the adjacent communications, must be secured,
  - it is only possible to erect scaffolding on surfaces with sufficient bearing strength, which dissipates load induced by the scaffolding and its future operation,
  - scaffolding must be rigid enough in the longitudinal, transversal as well as horizontal planes and its rigidity must be secured by diagonal bracing, frames, etc.,
  - scaffolding must be duly anchored, always in compliance with the documentation; inappropriate anchorage is the most frequent cause of accidents,
  - all levels of scaffolding, where the height exceeds 2 m, must be equipped with a two-bar railing with a safety stop,
  - floor components of scaffolding must be non-slip, secured against lifting and shifting,

- ladders must exceed the climbing level by at least 1.0 m,
  - when the distance between the scaffolding floor and the wall of a structure exceeds 250 mm, a railing must also be on the inner edge, where the width of free space does not exceed 0.40 m, only a single-bar railing without a safety stop is acceptable,
  - minimum under-crossing height of a scaffolding floor in the place of the cross bond is 1.75 m, otherwise 1.90 m. For the ground-level under-crossing structure, the clearance height from the floor must be at least 2.10 m,
  - scaffolding may only be used after its full completion and after completion of a written handover-acceptance procedure,
  - scaffolding must be inspected prior to commencement of work; professional inspections must take place on a monthly basis.
- Personal protective equipment against a fall
    - the party responsible for elaboration of the technological procedure, or an employee, who is in charge of the respective work at heights, is obliged to define an anchorage point for means of personal security. Such an anchorage point must enable safe security and anchorage for the entire period of the activity with regards to the danger concerned,
    - the means of personal security must be designated in a manner compliant with CE and the respective instructions, which contain all requirements for the use, adjustment, inspection, maintenance, storage, etc., must be attached to them,
    - prior to and after every use, an employee must perform a visual inspection of the personal protective equipment used by them,
    - professional inspections and functional tests of the operated personal protective equipment must be performed in compliance with the manufacturer's instructions.

Prepared for the Czech Focal Point for Occupational Safety and Health  
by the Occupational Safety Research Institute  
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