

M3-EN.12 USE OF LIFTING EQUIPMENT AND FORK LIFT TRUCKS

M3-EN.12.1 Basic industrial forklift truck operation guidelines (Part A')

M3-EN.12.2 Basic industrial forklift truck operation guidelines (Part B')

M3-EN.12.3 Basic industrial forklift truck operation guidelines (Part C')

M3-EN.12.4 Lifting equipment

Description of chapter

The specific chapter includes thorough presentation lifting equipment and of forklift truck basic operation guidelines as well as the most common deficiencies, which often lead to accidents at workplace.

The objective of this chapter is to familiarize all personnel involved in occupational health and safety at metal processing installations, with the safe use and operation of lifting equipment and forklift trucks.

M3-EN.12.1 Basic industrial fork lift truck operation guidelines (Part A')

- ONLY licensed and certified personnel are authorized to operate and drive forklift trucks.
- Use of an acoustic warning signal when moving backwards
- Use of a warning flashlight when in operation

Before using a fork lift truck or starting an operation, check:

- a) the condition and pressure of the tyre
- b) the condition of brakes
- c) the elevation mechanism
- d) the warning signals equipment (the horn, etc).

- Precautionary measures:
 - There should be a site plan showing the standard routes of fork lift trucks available at workplace.
 - Additional equipment has to be installed, where necessary.
 - Always use the most suitable forklift truck for the job.
 - The involved personnel should be adequately trained.
 - All obstacles should be marked or removed.
 - Furthermore, sensitive installations should be protected by means of bars or banisters.

A remarkable number of accidents may be avoided if forklift trucks are equipped with a sheltered driver's cabin (M3.12.01 and M3.12.02). A sheltered cabin offers the following advantages:

- Protects the driver from possible injuries

- Prevents the ejection of driver in case of overturning.
- Helps facing bad weather conditions.
- Prevents body strain originating from working in areas with great variations in temperature.

M3-EN.12.2 Basic industrial fork lift truck operation guidelines (Part B')

- If one or more forklift trucks move inside a personnel working area, a set of appropriate traffic safety rules should be defined and implemented.
- The presence of personnel inside the standard forklift truck route should be avoided. If this is not practicable, additional safety measures have to be taken.
- The presence or transport of personnel in of automobile equipment, should only take place at safe parts of the vehicle specially arranged for this purpose.
- In case multiple operations during maneuvering are necessary, the vehicle's speed should be accordingly adjusted.
- Operation of internal combustion engine equipment indoors should be allowed only where adequate room ventilation is provided.
- Devices which prevent equipment operation by non authorized personnel (controlled keys)
- Braking mechanism equipped with a back up system
- Fire fighting system
- Visibility improvement equipment (mirrors, lights etc)
- Headlights in order to work in dark areas.
- Labeling which states the basic operation properties and ratings.

M3-EN.12.3 Basic industrial fork lift truck operation guidelines (Part C')

- In case vehicles are not designed for elevating people, this should be clearly mentioned (M3.12.03). Personnel should be exclusively elevated by means of special vehicles having working platforms equipped with protective lattice or bars. All personnel working in height should obtain reliable communication means and secure their safe return to the ground level. When people are elevated, the vehicle operator must always be at the control panel. Vehicle maneuvering should not take place when moving on steep slopes.
- Forklift trucks should move forward when driving on an upward slope and backward when driving on a downward slope. The load should maintain a slight inclination towards the vehicle. Reversing is considered necessary when the load is particularly large obstructing visibility.
- The forklift truck is particularly unstable when moving on rough ground. Always ensure that the driving surface is smooth and solid.
- Loads should never be carried at a dangerous height or with forks raised (M3.12.04).

- The load should be steady, balanced, properly secured and leaning on both forks equally.
- Never drive a forklift truck in the vicinity of another vehicle.
- Personnel elevation machinery should:
 - Be installed in a way that minimizes the need to raise various loads towards elevated persons.
 - Prevent falling of various objects on elevated people (e.g. by means of a protective overhead lattice), as well as falling of people themselves, considering that the working platform space is limited.
 - Unless absolutely necessary, avoid standing or working underneath elevated pendulous loads.

M3-EN.12.4 Lifting equipment

Generally for lifting equipment (either automotive or steady) there is a number of directives proposed concerning its specifications and safe use and protection of personnel:

- Guaranteed resistance and stability under all possible conditions depending on the nature of the ground.
- Obvious indication (signaling) of nominal load.
- Signalling that refers to the basic operational properties of equipment. Especially when not designed to lift personnel there should be a clear signal.
- Care should be taken to reduce following risks:
 - Crashing of loads against employees (i.e. fall from lifting equipment or running into)
 - Deviation or fall of loads (properly balance and tying of the load)
 - Involuntary disengagement of the loads (worn out or inefficient junctions)
 - Falling of operator's cockpit, especially when in height
 - Falling of operator from cockpit especially when in height
 - Squeezing, crashing or trapping of the operator in the cockpit
- Operator's safety should be ensured in case of trapping (air supply, efficient suspension)
- Lifting parts should be chosen according to the loads, points of suspension and tying structure.
- Lifting parts should be stored in a way that ensures protection from wear out or damaging.

Above those specifications, following measures during use are proposed:

- Personnel lifting should only take place with proper equipment designed for this purpose or with proper protection measures

- During lifting of personnel, operator must always be in the control panel
- Avoid presence of employees under lifted loads
- Avoid carrying loads under not protected workplaces where employees are present
- If the operator cannot have eye contact during the whole route there must be another person guiding
- If equipment in case of damage or power supply disruption cannot hold the load (e.g. hydraulic lifting systems without locks), special protective measures should be taken.
- Loads should not remain without surveillance unless access to dangerous area is restricted and load has been safely locked.