

Guidance on the Lifting and Handling of Long Loads on the forks of forklift trucks

Introduction

The purpose of this document is to provide industry guidance for lifting and handling of long loads carried on the forks of forklift trucks. Whilst the primary use of fork lift trucks is to handle palletised loads, it is the intention of this document to provide guidance on the lifting and handling of long loads often associated with piling and foundation activities, which are not generally palletised.

It is not the intention of this document to provide guidance on the carriage of underslung loads. Further information on this topic is available from <http://www.cpa.uk.net/sfpgspublications/>

This document should be read in conjunction with all other legislation, HSE and good practice guidance currently published - <http://www.hse.gov.uk/>

Definitions for the purpose of this document are -

- Forklift truck - covers a range of tracked and wheeled plant items which are or can be fitted with forks or a fork attachment, including but not limited to Telescopic Handler, Rough Terrain Fork Lift, Side Loader, etc; as well as a Loading Shovel or excavator fitted with forks.
- Long loads – typically loads greater than 3 times the fork width with the forks set at the maximum spacing that the fork carriage allows.

It is recommended that for any long loads lifted in excess of 3 times the fork width serious consideration be given as to whether a forklift truck is suitable to carry out this work.

Whilst load handling attachments are available and are indeed often appropriate, these must be approved by the lifting equipment manufacturer as suitable for a particular forklift truck model and a suitable and sufficient risk assessment be carried out along with a documented lift plan/method statement. The use of such attachments may reduce the safe working load rating of the forklift truck.

General

Lifting operations by mechanical means are common-place on piling sites or within plant yard areas, and a variety of lifting equipment or lifting accessories can be utilised. . Cranes and piling rigs carry out the majority of lifting operations on site and are the preferred option when planning lifting operations of long loads. However, it is recognised that forklift trucks may also be used due to methods of working, limited access, restricted space within the site, limited storage areas, the presence of utilities and other hazards which determine that cranes or piling rigs cannot be used.

Planning

UK Legislation requires that all construction activities are appropriately planned by competent people and carried out to ensure the health, safety and welfare of employees and others who may be affected with due consideration for all foreseeable risks. This starts at the tender and planning stage. Scheme Designers are key in designing out risk and by proper selection of suitable design, materials and construction methods, risk can be eliminated or at least reduced. In the context of this document design and planning considerations should focus on issues that may affect selection, suitability and safe use of lifting equipment. Forklift operations generally require firm level ground. Consideration during the design and planning stage should focus on:

- Suitability of the site in relation to the preferred piling technique / typical lifting operations and the loads expected with respect to selection of potential lifting equipment.
- Site space constraints and logistics. This should also include a review of over head obstructions including working near over head electricity pylons / cables or working close to building overhangs.
- Lay down areas for plant equipment and storage of materials.
- Traffic management, suitability of access routes, piling platform and gradients.
- Safe routes for pedestrians especially when carrying wide loads.
- Safe routes for banksman to guide the forklift through worksites or workplaces especially during the lifting of large loads.
- Travel distances – unloading and lay down areas should be near to the place of use to avoid double handling and travel with loads.

Construction and working methods are often detailed by the Specialist Piling Contractor in response to the outcome of the considerations above. It is often preferable and beneficial for the Specialist piling contractor to be involved at the time that these issues are considered in order to eliminate / reduce any risk by the selection of the most appropriate piling technique and working methods.

Note – the construction site environment is constantly changing on a daily and often hourly basis. Regular and careful management and coordination of activities is key to maintaining a safe place of work.

Selection of lifting equipment

Lifting equipment must be selected by a suitably competent person to ensure that all lifting equipment, accessories, and systems of work comply with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). Due consideration should be given to –

- Nature of the work being undertaken.
- Characteristic of the load and the lifting operations required.
- Particular site constraints including ground conditions.
- The need for additional handling attachments such as fork width extensions and their effect on the safe working load of the forklift truck.
- How best to secure the load to prevent it moving or sliding during transport.
- The weight of any handling attachments must be included in any load calculations.
- The need to de-rate the SWL of equipment to provide an increased factor of safety when using ancillary equipment. Supervision arrangements.

When selecting the lifting equipment careful consideration should be given to the lifting of the following long loads:

- Circular long steel tubes, vibro cones, pokers etc. offer minimum surface contact with the forks and therefore serious consideration should be given to equipment selection before deciding that a forklift is the method of choice.
- Square section precast concrete piles and relatively flat sheet piles offer greater surface contact and therefore increased load stability but it must be remembered that steel to steel contact with the forks may be low friction with the load likely to slide.

Management of lifting operations on site

At the induction and mobilisation stage of a project the following points should be reviewed at the earliest opportunity prior to commencing work, particularly with reference to the forklift trucks but also other health and safety aspects of the work -

- The site is expected at the design / planning stage and the planned method of working is acceptable.
- Lifting equipment delivered is as per the lift plan / SSOW which is in place.
- The piling platform and vehicular access routes are firm level and suitable for the intended lifting activities.
- The weather conditions with particular reference to high winds must be considered especially when carrying loads with a large surface area.
- Delivery vehicles can access a suitable storage / unloading area on site. Ideally at the same level as the piling platform.
- Storage / unloading areas are close to the intended piling works area to reduce / prevent double handling or excessive travel.
- Suitable segregation of lifting operations from pedestrian routes or other work activities with appropriate barriers / signage provided to suit.

Training

It is important that operators, supervisors and managers involved with the use of forklift trucks receive adequate training relative to their role, in the safe use and operation/supervision of forklift trucks with particular emphasis on the lifting of long or irregular loads including the foreseeable risks and controls to be adopted. Training should be in line with the CPC scheme and should include but not be limited to -

- The key principles of the safe use and operation of the lifting equipment,
- Understanding the capabilities of the lifting equipment and load characteristics and the effect on the forklift truck stability in all operating modes,
- Likely hazards and risk controls associated with handling long loads,
- Personal position of any support staff, such that they will not be injured in the event of loss of load or machine overturn etc.

Operational controls / Site procedures

When lifting long loads it is recommended that the following are adhered to

- The load be carried as low as is practicable,
- The load is centred equidistant on the forks, or
- Centre of gravity is placed mid distance between the forks (but note that long loads with a large offset centre of gravity should not be carried on the forks,
- The load is carried close to the heel forks and with slight back tilt sufficient to stabilise the load.
- The forklift truck is operated within the site speed limits and driven in a manner that takes account of site conditions, terrain, proximity to personnel and obstacles and the stability of the load. The load should not be raised to allow it to pass over obstructions such as stored materials, vehicles, etc. If that is needed then the wrong lifting equipment and method has been selected.
- The forks of a forklift truck should not be used for pitching cages, casings or piles or to support one end of a long load while it is turned from horizontal to vertical or vice versa. Proprietary lifting attachments may be used but are usually not suitable for tandem lifts or where horizontal loading may occur during the lift.
- Workers should not walk alongside long loads on forks so as to steady the load. If this appears to be needed then the wrong plant has been selected for the job. Human nature means that a worker who is close to a load that moves and becomes unstable may react by going even closer and attempting to prevent this. Personnel should stay clear so that the operator can deal with the immediate problem by landing the load. A load that has shifted may collapse further. Recovery should follow an agreed logical process to ensure that injury does not occur.
- Banksman must be used to guide forklifts in poor visibility or when manoeuvring on sites with restricted access. Clear communication between the banksman and the forklift driver must be agreed beforehand.
- The load may need to be secured in bundles to prevent shifting. However a load that is several times longer than the fork width should not be clamped or secured to the forks as any dynamic forces (rocking or twisting) could be transmitted from the load into the fork carriage. This can make overturn of the machine more likely and may also cause hidden damage by inducing stress in the forks, the carriage and the boom or mast.

Handling attachments

When selecting object handling attachments consideration must be given to the effects that the attachment may have on the stability and capacity of the forklift truck. For example using width extensions may increase the load handling stability, however it may have an adverse effect on the lateral stability as the load may be outside the wheelbase of the forklift truck. Always consult and work to manufacturer's instructions ensuring any chosen attachment has been checked by a competent person to ensure it is compatible to the forklift truck to which it is fitted.



Ensure that all lifts comply with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). Good practice can only be achieved by thorough planning and adequate supervision.

When lifting any load that can affect the key principles of stability of the lifting equipment, ensure that every lift is adequately planned and supervised to comply with LOLER & BS 7121 (part 6)

Further Guidance

- L113 The Lifting Operations and Lifting Equipment Regulations 1998
- BS 7121 Safe Use of Cranes Part 6
- ACOP L117 Rider Operated Lift Trucks – Operator Training

References

- The Health and Safety at Work Act 1974
- The Construction Design and Management Regulations 2015

Disclaimer

Although every effort has been made to check the accuracy of the information and validity of the guidance given in this document, neither the FPS or its members accept any responsibility for misstatements contained herein or misunderstanding arising here from.