

## Rope evacuation from mechanical handling equipment

**As per HSE OC 283.31. Clause 5.3.7 of BS EN 1726-2:20001 specifies that "Trucks that are designed to elevate the operator position more than 3000 mm above ground level shall be provided with means, e.g. descender devices complying with BS EN 341:19932 Class C, rope ladder etc by which the operator can reach the ground safely in the event of the operator position becoming fixed in the elevated position."**

Some mechanical handling equipment (e.g. order pickers, 'operator up' forklift trucks, overhead travelling cranes) is provided with a rope evacuation system to assist evacuation in the event of the equipment being rendered immobile at height, where there is a need for immediate evacuation.

If the principle of a rope evacuation system is the use of a single descent line with the user attached via a harness, to a descent device (descender). Descenders offer a controlled descent to floor level when correctly used.

### Risk assessment

The dutyholder's risk assessment for the use of mechanical handling equipment where the operator works at a high level should recognise the possibility of the operator being stranded at high level. It should determine the need for means of escape and the most appropriate system of work for achieving a safe escape.

A suitable safe system of work may include a means of raising the alarm (a shout or whistle may be adequate), followed by a controlled lowering of the platform by rescuers at ground level.

A rope evacuation system is a "last resort" which should only be used in exceptional circumstances, examples can be seen as per HSE OC 283.31

The dutyholder's risk assessment should determine safer alternative means of evacuation. In determining the most appropriate system of work for achieving a safe escape, the physical characteristics and fitness of the operator should be considered.

Where the risk assessment determines that rope evacuation equipment is appropriate, it should also consider any limitations with rope evacuation systems. The suitability of any particular equipment, for specific circumstances, will depend upon advice from the manufacturers of the mechanical handling equipment and evacuation systems. Rope evacuation systems should only be used with mechanical handling equipment that has been designed or is suitable to accommodate such use. If a machine is modified, it will need to be carefully assessed to make sure that additional risks have not been added.

## Limitations of rope evacuation systems

If a rope evacuation system is the only option for emergency evacuation from mechanical handling equipment, there are several factors for consideration:

- a) Operators should be sufficiently competent to use them safely. Operators who are not sufficiently competent should not be allowed to use mechanical handling equipment where the use of rope evacuation may be required. Regular refresher training is necessary so that users can acquire and maintain the competence and confidence necessary to use the evacuation equipment safely.
- b) Training should be undertaken with a safety rope controlled by the trainer (except as described in Appendix 2 para 1 (d) (iv) ), even if staff have received regular training and are deemed competent. The independent safety rope should be used with an auto-locking belay device and attached to the trainee generally via a separate full body harness (but not necessarily where an BS EN 813:19974 sit harness is used). If the evacuation system itself utilises a full body harness then the safety rope should be attached to a separate fall arrest attachment point on the harness.
- c) The equipment should be maintained. Operators needing to use the equipment in an emergency may not have the skills to assess the condition of equipment. A rope evacuation system that has already been used for an evacuation should not be re-used unless it has been deemed suitable for re-use, by a competent person.

The inspection, maintenance and storage of rope evacuation systems is essential. For more detailed information refer to HSE INDG 367.

## Training

Employees new to the work should be trained before they may have to evacuate in an emergency (initial training). It is recommended that refresher training should be done at least every 12 months to produce an effective "conditioning" and maintain confidence. Initial and refresher training should be carried out by a competent person.

In addition, it is recommended that an assessment of the competence and confidence of operators should be carried out every 6 months. The assessment should include ground level practice of donning the equipment and questioning about the sequence of actions in an evacuation. The assessment can be carried out by the appointed person. The assessment should decide whether individuals require refresher training, ie those who have forgotten the important principles for the use of the equipment or express a lack of confidence if they would have to use it in an actual escape.

The employer's risk assessment can be used to determine an alternative frequency and arrangements for refresher training and assessment of competence and confidence. In practice, it may be more straightforward to carry out refresher training every 6 months using a competent person.

Candidates should be continually assessed throughout the training and complete a final assessment. It is recommended that the assessment is both oral and practical. Trainers may also wish to consider the use of written assessments. Unwilling or nervous candidates should not be forced to act beyond their own ability and inclination, and further instruction may be appropriate.

Training providers should be able to demonstrate they are competent and should only undertake instruction on evacuation equipment they are familiar with.

It is recommended that the evacuation equipment fitted to mechanical handling equipment is not used for training, unless it is inspected by a competent person before being returned to the mechanical handling equipment for use.

Most descenders are designed for single use followed by inspection and re-packing. The equipment used should replicate the equipment supplied with the machine but ideally should be designed specifically for training.