



## CPA Safety Guidance

Ref: CHIG 0401

# Safeguarding Requirements for Landing Gates of Goods-only Construction Hoists

## Introduction

1 This document provides guidance on compliance with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) Regulation 6(2) relating to the landing gates for temporarily installed electrically powered construction hoists (goods only) at sites where construction work is being carried out. The guidance represents a consensus of practical experience by members of the Construction Plant-hire Association's Construction Hoist Interest Group. Following this guidance is not compulsory and you are free to take other action to meet your legal obligations.

Note: There are significant requirements relating to base enclosure gates, hoistway protection and other issues for which guidance can be found in the *References and further information* section on page 7 of this guidance. This guidance does not cover diesel powered construction hoists.

## Definitions

2. *Full height landing gate* - The gate fully covers the gap between the top and bottom of the landing so that it is not possible to come into contact with moving parts of the hoist. Typically, the height is 2 metres. With a full height gate the horizontal distance between the outside of the landing gate and the nearest part of the platform is no more than 200 mm. For a complete definition see clause 5.5.3 of BS EN 12158-1:2000 - Builders hoists for goods - Hoists with accessible platforms (hereafter referred to as BS EN 12158-1).

Note: in addition to the landing gate, additional safeguarding may be required to the side(s) and/or the top of the landing gates to prevent contact with the moving platform. This forms part of the hoistway protection.

3. *Reduced height landing gate* - The gate is between 1100 mm and 1200 mm high and consists of at least a top rail, an intermediate rail at half height and a toe board. The horizontal safety distance between the landing side of the top of the gate and any travelling part of the hoist in normal operation is not less than 0.85 m or 0.5 m if the rated speed is not more than 0.7 m/s. For a complete definition see clause 5.5.3 of BS EN 12158-1.

4. *Electrical interlocking of landing gate* - Unless specified otherwise in the following Tables, it shall not be possible under normal operating conditions to start or keep in motion the platform unless all landing gates are closed and latched.

5. *Mechanical interlocking of landing gates* - It shall not be possible under normal operating conditions to open any landing gate unless the platform floor is within  $\pm 0.25$  m of that particular landing.

6. *Self-closing latch* - The landing gate is fastened in the closed position by means of a self-closing latching device which can be manually released without the aid of a separate tool; typically a mechanical latch operated by a spring and /or gravity. The locking elements should engage by at least 7 mm. Operation of the self-closing latch does not require the platform to be present or within 0.25m of the landing level concerned. To open the landing gate, two distinct actions are required: first unfasten the latch, and then open the landing gate.

7. *Old construction hoist (goods only) including swivel hoists* - A hoist first supplied prior to January 1995 and which has no CE marking.

8. *New construction hoist (goods only) including swivel hoists* - A hoist first supplied after January 1995 and which has CE marking.

## **Background**

9. LOLER Reg 6(2) states "Every employer shall ensure that there are suitable devices to prevent a person from falling down a shaft or hoist way".

10. The Approved Code of Practice (ACoP) to LOLER at paragraph 183 states "Suitable and substantial gates, or other equally effective means, should be provided at any access and/or egress points to any hoist way or shaft enclosure".

11. The ACoP to LOLER at paragraphs 184 states: "Any such gate, or other equally effective means, should be fitted with efficient interlocking or other devices, such that (a) the gate cannot be opened except when the lifting equipment is at the landing and (b) the lifting equipment cannot be moved away from the landing until the gate is closed. If it is not reasonably practicable to fit such devices, you should provide alternative arrangements to ensure that the gate is kept closed and fastened except when the lifting equipment is at rest at the landing. Any gate needs to be of suitable height to prevent people toppling over or reaching over it and be of adequate strength".

12. Guidance is required to address reasonably practicable minimum safeguards at landing gates used with construction hoists (goods only). Recommendations for reasonably practicable minimum safeguards at landing gates are given in this document.

13. The requirements of LOLER allows either full height landing gates or reduced height landing gates for temporary installed builders hoists at construction sites. LOLER imposes hoist way landing gate safeguarding requirements, subject to reasonable practicability. The harmonised European Standard (BS EN 12158-1:2000 - Builders Hoists for Goods — Part 1: Hoists with accessible platforms) specifies more arduous locking requirements for full height gates than reduced height gates.

## **Considerations**

14. Mechanical interlocking is preferred, but is not always a reasonably practicable proposition and it may be difficult to provide mechanical interlocking of a full height landing gate such that it can only be opened when the platform is within plus or minus 250 mm of that landing.

15. It is considered reasonably practicable to electrically interlock the landing gates fitted to all electrically controlled hoists to prevent the platform moving unless all of the gates are fully closed and latched.

16. Currently, it is considered that full height landing gates should be latched in the fully closed position by at least the means of a self-closing latch which can be manually released. To open the landing gate, two actions are required, first unfasten the latch and then open the landing gate. At present, it is considered that such a latch provides reasonably practicable

protection and is an improvement on what was required under the revoked Construction (Lifting Operations) Regulations 1961 which only required gates to be fitted and kept closed.

### **Minimum Safeguarding Requirements for Construction Hoist (Goods-only) Landing Gates**

17. The following minimum safeguarding requirements below are intended to apply to all construction hoist (goods-only) landing gates. They reflect a UK practice by some hoist owners to manufacture their own gates, so in addition to interlocking requirements, guidance should offer advice on basic issues such as strength and security.

- (a) Landing gates shall not open towards the hoist way. Typically, sliding gates are employed or gates that hinge inwards onto the landing.
- (b) Landing gates shall be strong, durable, and sufficiently stiff to prevent excessive deflection. Typically, a steel frame in-filled with steel mesh.
- (c) Landing gates shall be securely fastened and guided. The top and bottom of a sliding gate shall be effectively restrained so that it can withstand normal use and foreseeable unintended situations and so that it cannot be displaced into the hoist way.
- (d) Persons at the landing shall be able to see when the platform has arrived, e.g. full height gates shall be of mesh construction or be provided with a vision panel.
- (e) For full height gates, any gaps at the side(s) and top of the landing gate shall be in-filled to prevent access to the hoist way.
- (f) The landing threshold shall not protrude underneath the gate into the hoist way by an amount that allows room for a person(s) to stand there when the gate is closed. Where this is not practicable, the hoist way side of the gate should be provided with an effective device, and/or a safe system of operation to prevent movement of the platform if a person(s) is standing on that side of the gate.
- (g) Electrical interlocking devices shall not be capable of being over-ridden by simple means. Attention must be given to electrical voltages and interfaces with the existing control and safety circuits when adding or replacing electrical devices.
- (h) Mechanical locking devices and latches shall be strong enough and their locking elements should engage by at least 7 mm.
- (i) A sign shall be fastened to the gate with words to the effect: "GOODS ONLY HOIST - NO PASSENGERS - KEEP GATES CLOSED AND LATCHED - RATED LOAD XXXX KG".

18. Generally, landing gates must be of sound engineering construction and suitable for their intended use and foreseeable unintended situations. Reference for the construction of landing gates should be made to BS EN 12158-1:2000 clause 5.5 — Hoistway protection and landing access.

Clause 5.5.3 - deals with landing access.

Clause 5.5.4 - deals with materials for enclosure and guarding.

Clause 5.5.5 - deals with landing gate locking devices.

19. It should be noted that additions to or modifications of a hoist supplied with CE marking may require a review of the Declaration of Conformity.

20. The following Tables 1, 2 and 3 give examples of safeguarding for the different combinations of hoist and landing gates.

Note symbols used: ✓ - means that this safeguard is applicable;  
✗ - means that this safeguard is not applicable.

**TABLE 1 - NEW CONSTRUCTION HOISTS (GOODS-ONLY)  
(excluding Swivel Hoists - see Table 3)**

<b>Landing Gate type:</b>	<b>Full Height</b>
Electrical interlocking:	Platform shall not start or keep in motion until all gates are in a closed position.
Self-closing latch:	<b>x</b>
Mechanical interlocking:	✓
Additional features and/or comment:	<ul style="list-style-type: none"> <li>Landing gates to relevant clauses of 5.5 of BS EN 12158-1.</li> </ul>

**OR**

**(where not reasonably practicable to mechanically interlock)**

<b>Landing Gate type:</b>	<b>Full Height</b>
Electrical interlocking:	✓
Self-closing latch:	✓
Mechanical interlocking:	<b>x</b>
Additional features and/or comment:	<ul style="list-style-type: none"> <li>Landing gates to clause 5.5.3 and 5.5.4 of BS EN 12158-1.</li> </ul>

**OR**

<b>Landing Gate type:</b>	<b>Reduced height</b>
Electrical interlocking:	✓
Self-closing latch:	✓
Mechanical interlocking:	<b>x</b>
Additional features and/or comment:	<ul style="list-style-type: none"> <li>Landing gates to relevant clauses of 5.5 of BS EN 12158:1.</li> <li>Any travelling part of the hoist to be off-set a minimum of 500 mm away from landing side of top of gate (850 mm if rated speed of any travelling part of the hoist in normal operation is more than 0.7 m/s).</li> <li>Platform drawbridge gate with integral side protection to safely span the off-set between platform and landing, prior to opening the landing gate.</li> </ul> <p>Manufacturer's/supplier's instructions to be followed for set-up of gates.</p>

**TABLE 2 - OLD CONSTRUCTION HOISTS (GOODS-ONLY)  
(excluding Swivel Hoists - see Table 3)**

<b>Landing Gate type:</b>	<b>Full Height</b>
Electrical interlocking:	Platform shall not start or keep in motion until all gates are in a closed position.
Self-closing latch:	<b>x</b>
Mechanical interlocking:	<b>✓</b>
Additional features and/or comment:	<ul style="list-style-type: none"> <li>Landing gates to be of sound engineering construction, suitable for intended use and foreseeable unintended situations. See paragraphs 17 &amp; 18 above.</li> </ul>

**OR**

**(where not reasonably practicable to mechanically interlock)**

<b>Landing Gate type:</b>	<b>Full Height</b>
Electrical interlocking:	Platform shall not start or keep in motion until all gates are in a closed position.
Self-closing latch:	<b>✓</b>
Mechanical interlocking:	<b>x</b>
Additional features and/or comment:	<ul style="list-style-type: none"> <li>Landing gates to be of sound engineering construction, suitable for intended use and foreseeable unintended situations. See paragraphs 17 &amp; 18 above.</li> </ul>

**TABLE 3 - SWIVEL TYPE CONSTRUCTION HOISTS (GOODS-ONLY)**

<b>Landing Gate type:</b>	<b>Full height two-part stable door</b>
Electrical interlocking:	✓ (top part of gate only)
Self-closing latch:	✓ (top and bottom part of gate)
Mechanical interlocking:	see 'Additional features' below
Additional features and/or comment:	<ul style="list-style-type: none"> <li>• Lower part of gate cannot be opened until the top part of gate is open; top part of gate cannot be closed until bottom part of gate is closed and latched.</li> <li>• Lower part of gate all not be unlatched and opened until the threshold gap has been safely bridged.</li> <li>• Platform cannot be set in motion until the lower gate is closed and latched, and the top gate is closed and latched.</li> <li>• For new construction hoists, landing gates to clause 5.5.3 and 5.5.4 of BS EN 12158-1.</li> </ul> <p>For old construction hoists, landing gates to be of sound engineering construction, suitable for intended use and foreseeable unintended situations. See paragraphs 17 &amp; 18 above.</p>

**OR**

<b>Landing Gate type:</b>	<b>Reduced height</b>
Electrical interlocking:	✓
Self-closing latch:	✓
Mechanical interlocking:	✗
Additional features and/or comment:	<ul style="list-style-type: none"> <li>• For hoists that do not have a platform travel position switch, (e.g. some wire rope hoists), reduced height gates should <u>not</u> be used because of the risk of person(s) coming into contact with moving part(s) of hoist. Also, a safe system of working shall be followed to prevent platform from starting when the platform is not in the normal travel position.</li> <li>• It shall not be possible to start or keep in motion the platform unless the platform is in its correct position to travel, (e.g. travel position switch).</li> <li>• Landing gates to relevant clauses of 5.5 of BS EN 12158:1.</li> <li>• Any travelling part of the hoist to be offset a minimum of 500 mm away from the landing side of top of gate (850 mm if rated speed of any travelling part of the hoist in normal operation is more than 0.7 m/s).</li> </ul>

**OR**

<b>Landing Gate type:</b>	<b>Full height gate with additional fixed waist height rail</b>
Electrical interlocking:	Platform shall not start or keep in motion until all gates are in a closed position.
Self-closing latch:	✗
Mechanical interlocking:	✓
Additional features and/or comment:	<ul style="list-style-type: none"> <li>• For new construction hoists, landing gates to relevant clauses of 5.5 of BS EN 12158-1.</li> <li>• For old construction hoists, landing gates to be of sound engineering construction, suitable for intended use and foreseeable unintended situations. See paragraphs 17 &amp; 18 above.</li> </ul>

**OR**

**(where not reasonably practicable to mechanically interlock)**

<b>Landing Gate type:</b>	<b>Full height gate with additional fixed waist height rail</b>
Electrical interlocking:	✓
Self-closing latch:	✓
Mechanical interlocking:	✗
Additional features and/or comment:	<ul style="list-style-type: none"> <li>• For new construction hoists, landing gates to clause 5.5.3 and 5.5.4 of BS EN 12158-1.</li> <li>• For old construction hoists, landing gates to be of sound engineering construction, suitable for intended use and foreseeable unintended situations. See paragraphs 17 &amp; 18 above.</li> </ul>

## References and Further Information

- 1) HSC Safe use of lifting equipment - Approved Code of Practice and Guidance - L113 - Lifting Operations and Lifting Equipment Regulations 1998 SI 1998 No 2307 HMSO 1998 ISBN 0 7176 1628 2
- 2) HSC Safe use of work equipment - Approved Code of Practice and Guidance - L22 - Provision and Use of Work Equipment Regulations 1998 SI 1998 No 2306 HMSO 1998 ISBN 0 7176 1626 6
- 3) Supply of Machinery (Safety) Regulations 1992 as amended by Supply of Machinery (Safety)(Amendment) Regulations 1994; SI 1992 No 3073 as amended by SI 1994 No 2063
- 4) Construction (Design and Management) Regulations; SI 1994 No 3140 HMSO 1995 ISBN 0 11 043845 0
- 5) The Health and Safety (Miscellaneous Amendments) Regulations 2002; SI 2002 No 2174
- 6) HSC Managing health and safety in construction; Construction (Design and Management) Regulations 1994 Approved Code of Practice and guidance HSG224, HSE Books 2001 ISBN 0 7176 2139 1
- 7) Electrical Safety on Construction Sites, HS(G) 141 (formerly GS24), ISBN 0-7176-1000-4.
- 8) HSC A guide to managing health and safety in construction HSE Books 1995; ISBN 0 7176 0755 0
- 9) Health and Safety in Construction — HS(G)150; HSE Books 1996 ISBN 0 7176 1143 4
- 10) Supplying new machinery; HSE Books INDG270
- 11) British Standard - Builders hoists for goods — Part 1: Hoists with accessible platforms BS EN 12158-1:2000
- 12) BSI — Published Document — Safe use of machinery, PD5304: 2000
- 13) BS7212:1989 Code of Practice for safe use of construction hoists (under revision 2004)
- 14) CPA Best Practice Guide — Construction Hoists — Inspection, Thorough Examination and Maintenance - CHIG 0301

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