

BRITISH STANDARD

Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 –

Part 2: Hydraulic lifts

ICS 91.140.90



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ISBN 978 0 580 71652 2

The following BSI references relate to the work on this standard:

Committee reference MHE/4

Draft for comment 06/30147220 DC; 10/30228282 DC

Publication history

First published August 2007

Amendments issued since publication

Amd. no.	Date	Text affected
A1	March 2011	References, Table 7, Table 8 (see foreword)

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Foreword

Publishing information

This part of BS 8486 is published by BSI and came into effect on 31 August 2007. It was prepared by Technical Committee MHE/4, *Lifts, hoists and escalators*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

BS 8486-2:2007+A1:2011 supersedes BS 8486-2:2007, which is withdrawn.

BS 8486-2:2007 superseded BS 5655-10.2.1:1995 and PAS 32-2:1999 with regard to the testing of new lifts installations. BS 5655-10.2.1:1995 and PAS 32-2:1999 were declared obsolescent but remain available for the testing of existing lift installations.

Relationship with other publications

BS 8486 is published in two parts:

- Part 1: *Electric lifts*;
- Part 2: *Hydraulic lifts*.

This part of BS 8486 is intended to be read in conjunction with [A1](#) BS EN 81-2:1998+A3:2009 [A1](#), BS EN 81-28:2003, BS EN 81-70:2003, BS EN 81-71:2005, BS EN 81-72:2003 and BS EN 81-73:2005.

Information about this document

BS 8486-2:2007 superseded both BS 5655-10.2.1 and PAS 32-2 with regard to the testing of new lift installations. The principal changes from the two preceding standards were the additional tests required to demonstrate conformity to BS EN 81-2:1998 and its amendment to include machine-room-less lifts, and the inclusion of tests to demonstrate conformity to BS EN 81-28, BS EN 81-70, BS EN 81-71, BS EN 81-72 and BS EN 81-73.

The Lifts Directive 95/16/EC [1] requires the installer of a lift to take responsibility for its design, manufacture, installation and placing upon the market.

For conformity assessment the Lifts Directive requires that before placing upon the market and putting into service a lift shall have undergone certain procedures including inspection and test.

The inspection and test procedures may be undertaken by the installer provided that:

- a) the installer can demonstrate the necessary expertise by having an appropriate quality assurance system; and either
- b) the lift conforms to a harmonized standard; or
- c) the lift has an EC Design Examination Certificate from a Notified Body.

The level of quality assurance can vary in accordance with which conformity assessment route applies, details of which are given in BS EN ISO 9000.

In order to prove the competence of the persons carrying out the testing of the lift it is necessary that they operate in accordance with a quality assurance system, monitored by a Notified Body, under the requirements of the Lifts Regulations 1997 [2]. It might be necessary to make available certification of the quality assurance system in order to prove compliance.

NOTE Notified Bodies testing lift installations are expected to use the test report produced by the NBL Forum.

This part of BS 8486 specifies a means of determining compliance with BS EN 81-2. It does not cover every clause in BS EN 81-2 as many requirements are covered by the installer's quality control procedures.

This part of BS 8486 covers the tests in BS EN 81-2:1998, Annex D, as well as tests that do not fall within the installer's quality control system; for example, the depth of the pit to ensure conformity to arrangement drawings.

The start and finish of text introduced or altered by Amendment No. 1:2011 is indicated in the text by tags A1 A1. Minor editorial changes are not tagged. The principal changes introduced by Amendment A1 are to include verification of uncontrolled movement protection.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Attention is particularly drawn to the recommendations for safe working practices provided in BS 7255.

BSI permits the reproduction of the tables in this part of BS 8486. This reproduction is only permitted where it is necessary for the user to record findings on the tables during each application of the standard.

The following documents are required for the examination and tests to be carried out:

- general arrangement drawing;
- electrical schematic drawing;
- copies of test certificates;
- Notified Body approvals (if applicable).

This document is not applicable to existing lifts, although it may be used as guidance when examining and testing lifts that have been modified or repaired in accordance with BS 5655-12. It may also be applied to existing lifts that are upgraded in accordance with BS EN 81-80, where for example, components fitted that were not available at the time of installation require examination and test, such as ascending car overspeed protection or PESSRAL related safety systems.

Tests of existing installations should be made against the test procedures applying at the time of installation. These include:

- BS 2655-7:1970 for lifts installed in accordance with the BS 2655 series;
- BS 5655-10:1986 from 30 June 1986 for lifts installed in accordance with the BS 5655 series;
- BS 5655-10.2.1:1995 from 15 July 1995 for lifts installed in accordance with the BS 5655/BS EN 81 series;
- PAS 32-2:1999 from 15 June 1999 for lifts installed under the Lifts Directive [1] in accordance with the BS EN 81 series.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

It is recognized that certain tests/checks can be carried out more effectively before installation, and that others should only be made on site. Answer boxes in this part of BS 8486 that contain a shaded square imply that the test should be carried out on site.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Attention is particularly drawn to the following legislation:

- Lifts Regulations 1997 [2];
- Disability Discrimination Act 1995 [3];
- Electricity at Work Regulations 1989 [4];
- Electromagnetic Compatibility Regulations 1992 [5];
- Electric Equipment (Safety) Regulations 1994 [6];
- Lifting Operations and Lifting Equipment Regulations 1998 [7];
- **A1** Supply of Machinery (Safety) Regulations 1992 and subsequent amendments [8] **A1**;
- Health and Safety at Work etc. Act 1974 [9];
- Provision and Use of Work Equipment Regulations 1998 [10].

1 Scope

This part of BS 8486 specifies one means of determining compliance with the provisions for examination, testing and recording results for new hydraulic lifts specified in BS EN 81-2:1998, before being put into service.

This part of BS 8486 does not cover the following types of lift or lift equipment:

- a) electric lifts conforming to BS EN 81-1;

NOTE 1 Electric lifts are covered in BS 8486-1.

- b) Programmable Electronic Systems in Safety Related Applications for Lifts (PESSRAL).

NOTE 2 Due to the varied nature of such equipment the manufacturers of these systems should provide full details of the means by which it can be tested. Since on site testing might not be practical or possible, this may be verification of design as certified by the party responsible for quality assurance under the Lifts Regulations 1997 [1].

This part of BS 8486 also specifies a means of determining compliance with the provisions for examination and testing of hydraulic lifts specified in:

- 1) BS EN 81-28:2003;
- 2) BS EN 81-70:2003;
- 3) BS EN 81-71:2005;
- 4) BS EN 81-72:2003;
- 5) BS EN 81-73:2005.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[A1] BS EN 81-2:1998+A3:2009, *Safety rules for the construction and installation of lifts and service lifts – Part 2: Hydraulic lifts*¹⁾ **[A1]**

BS EN 81-28:2003, *Safety rules for the construction and installation of lifts and service lifts – Part 28: Remote alarms on passenger and goods passenger lifts*

BS EN 81-70:2003 incorporating Corrigendum No. 1 and Corrigendum No. 2, *Safety rules for the construction and installation of lifts – Particular applications for passenger and goods passenger lifts – Part 70: Accessibility to lifts for persons including persons with disability*

BS EN 81-71:2005, *Safety rules for the construction and installation of lifts – Particular applications to passenger lifts and goods passenger lifts – Part 71: Vandal resistant lifts*

BS EN 81-72:2003, *Safety rules for the construction and installation of lifts – Particular applications for passenger and goods passenger lifts – Part 72: Firefighters lifts*

¹⁾ All references in the text to BS EN 81-2:1998 should be taken as referring to BS EN 81-2:1998+A3:2009. **[A1]**

BS EN 81-73:2005, *Safety rules for the construction and installation of lifts – Particular applications for passenger and goods passenger lifts – Part 73: Behaviour of lifts in the event of fire*

BS EN 12385-5:2003, *Steel wire ropes – Safety – Stranded ropes for lifts*

BS EN 60529:1992, *Specification for degrees of protection provided by enclosures (IP code)*

BS ISO 4190-1, *Lift (US: Elevator) installation – Part 1: Class I, II, III and VI lifts*

ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs in workplaces and public areas*

3 Terms and definitions

For the purposes of this part of BS 8486, the terms and definitions given in BS EN 81-2, BS EN 81-28, BS EN 81-70, BS EN 81-71, BS EN 81-72 and BS EN 81-73 apply.

4 Examination and test of lifts and components

When the examination and tests specified in BS EN 81-2 are carried out, the results shall be recorded using the questionnaires given in Table 1 to Table 12 of this part of BS 8486. For machinery spaces, the results shall be recorded using the questionnaire given in Table 2A, together with the questionnaire given in Table 2B, Table 2C, Table 2D or Table 2E as appropriate for the location of the machinery space.

When the examination and tests specified in BS EN 81-28, BS EN 81-70, BS EN 81-71, BS EN 81-72 and BS EN 81-73 are carried out, the results shall be recorded using the questionnaires given in Annexes A, B, C, D and E respectively of this part of BS 8486.

All questions on the questionnaires shall be answered.

NOTE 1 Only after the completion of the questionnaires should Table 12 be signed and dated.

Satisfactory completion of the relevant questionnaires in this part of BS 8486 shall be deemed to demonstrate compliance with BS EN 81-2, BS EN 81-28, BS EN 81-70, BS EN 81-71, BS EN 81-72 and BS EN 81-73.

NOTE 2 It is essential to ensure that the safety requirements of BS EN 81-2 are all met and the associated risks addressed. This part of BS 8486 does not contain its own risk assessment but utilizes the risk assessment in BS EN 81-2.

NOTE 3 Answer boxes in the questionnaires that contain a shaded square indicate that the test should be carried out on site. Those sections that are not required to be carried out on site may be completed at any time during the design, manufacture or installation of the lift.

NOTE 4 The word “Specified” in a questionnaire indicates information to be provided by the lift designer.

Table 1 Result of examination and test for hydraulic lifts – Basic characteristics

Location		Installer	
Layout drawing reference no.		Lift serial number	
Electrical wiring diagram no.		Model / type name (if applicable)	
Additional compliances			
BS EN 81-28 Annex A	N/A	☐	Yes ☐
BS EN 81-71 Annex C	N/A	☐	Yes ☐
BS EN 81-73 Annex E	N/A	☐	Yes ☐
Number of levels served:		Power supply:	
Total		Voltage	
Front		Phases	
Rear		Frequency (hz)	
Side		Wire 3, 4 or 5	
		Fuse rating	
Rated load (kg)		Rated speed (m/s)	
No. of persons		Travel (m)	
Location of machine room:			
Above well		Below well	
At side of well		Other	
Is the above in accordance with the information on the layout drawing/wiring diagram or the other information sheets?			Yes ☐

Table 2A Result of examination and test for hydraulic lifts – Machinery spaces – General

<i>Tick all those applicable:</i>			
Machinery in machine room	☐	See Table 2B	
Machinery inside the well		See Table 2C	
Working areas in the car or on the car roof	☐		
Working areas in the pit	☐		
Working areas on a platform	☐		
Working areas outside the well	☐		
Machinery outside the well	☐	See Table 2D	
Pulley spaces	☐	See Table 2E	
2A.1 Main switch			
a) Has the machinery space been provided with a correctly rated (fuse size) mains switch? (See BS EN 81-2:1998, 13.4.1.)	Specified	☐ A	Yes ☐
b) Is the main switch control mechanism easily identifiable and accessible? (See BS EN 81-2:1998, 13.4.2.)			Yes ☐
c) Is the main switch lockable in the OFF position? (See BS EN 81-2:1998, 13.4.2.)			Yes ☐
2A.2 Access			
Is there safe access to the machinery spaces as defined in BS EN 81-2:1998, 6.2 ?			Yes ☐
2A.3 Safety signs			
Are notices and signs in place in accordance with BS EN 81-2:1998, 15.4 and 15.15 ?			Yes ☐

Table 2A **Result of examination and test for hydraulic lifts – Machinery spaces – General** (*continued*)

2A.4 Power unit type			
Is the correct power unit supplied?	Specified		Yes ☐
2A.5 Controller type			
Is the correct controller type supplied?	Specified		Yes ☐
2A.6 Oil cooler			
Is the correct oil cooler supplied?	Specified		Yes ☐
2A.7 Devices for emergency and test operation			
a) Where the machinery working space is in the well, has a suitably protected device been provided outside the well, for emergency and test operation as specified in BS EN 81-2:1998, 6.6.1 ?			Yes ☐
b) Does the panel contain an emergency operation device, intercom and the ability to view the moving lift as specified in BS EN 81-2:1998, 6.6.2 ?			Yes ☐
c) Has permanently installed lighting been provided to give 50 lux at the device as specified in BS EN 81-2:1998, 6.6.3 ?			Yes ☐
d) Are clear working spaces available in front of the device in accordance with BS EN 81-2:1998, 6.3.3.1 ?			Yes ☐
e) Does the emergency operation system(s) function correctly as specified in BS EN 81-2:1998, 12.5 ?			Yes ☐
f) Are the instructions specified in BS EN 81-2:1998, 15.4.3 displayed?			Yes ☐
2A.8 Communication			
Is there a communication device in place and working as specified in BS EN 81-2:1998, 14.2.3.4 ?	N/A	☐	Yes ☐

Table 2B Result of examination and test for hydraulic lifts – Machinery spaces – Machinery in a machine room

		N/A	☐
a) Is the machine room constructed to withstand the loads and forces to which it will be subjected, and does it have a non-slip floor? (See BS EN 81-2:1998, 6.3.2.)		Yes	☐
<i>NOTE Only where visual examination suggests non-compliance should further investigation be undertaken.</i>			
b) Confirm that there is no equipment installed in the machine room which is not associated with the safe operation of the lift. (See BS EN 81-2:1998, 6.3.1.1.)		Yes	☐
c) Are the dimensions for safe working as specified in BS EN 81-2:1998, 6.3.3?		Yes	☐
d) Are all doors and trap doors associated with the machine room in accordance with BS EN 81-2:1998, 6.3.4?		Yes	☐
e) Is the machine room door or trap door fitted with a suitable lock conforming to BS EN 81-2:1998, 6.3.4.3?		Yes	☐
f) Have all openings into the well from the machine room been suitably guarded as specified in BS EN 81-2:1998, 6.3.5?		Yes	☐
g) Is the machine room ventilated as called for in BS EN 81-2:1998, 6.3.6?		Yes	☐
<i>NOTE Only where visual examination suggests non-compliance should further investigation be undertaken.</i>			
h) Has lighting and a socket outlet been provided in accordance with BS EN 81-2:1998, 6.3.7 and 13.6?	lux	Yes	☐
i) Have lifting points installed in the machine room been marked with their safe working load? (See BS EN 81-2:1998, 6.3.8 and 15.4.5.)	N/A ☐	Yes	☐

Table 2C **Result of examination and test for hydraulic lifts – Machinery spaces – Machinery inside the well**

2C.1 Working areas inside the well		N/A	☐
a)	Are the working areas inside the well constructed to withstand the loads and forces to which they will be subjected? (See BS EN 81-2:1998, 6.4.1.)	Yes	☐
<i>NOTE Only where visual examination suggests non-compliance should further investigation be undertaken.</i>			
b)	Are the dimensions for safe working as specified in BS EN 81-2:1998, 6.4.2 ?	Yes	☐
2C.2 Working areas in the car or on the car roof		N/A	☐
a)	Where there is a risk of uncontrolled movement whilst maintenance/inspection is being carried out from inside the car or on its roof, is a mechanical device available to prevent such movement? [See BS EN 81-2:1998, 6.4.3.1a).]	N/A	☐
b)	Is movement of the car prevented by an electrical safety device if the mechanical device in a) is active? [See BS EN 81-2:1998, 6.4.3.1b).]	N/A	☐
c)	When the mechanical device is used, are sufficient clearances available to leave the car safely? [See BS EN 81-2:1998, 6.4.3.1c).]	N/A	☐
d)	If emergency doors and/or traps, including their electrical safety contacts, are located in the walls of the car, do they conform to BS EN 81-2:1998, 6.4.3.3 ?	N/A	☐
e)	Where maintenance is carried out from inside the car, through the door/trap, with the car able to move, is an inspection control device provided conforming to BS EN 81-2:1998, 6.4.3.4 ?	N/A	☐

Table 2C Result of examination and test for hydraulic lifts – Machinery spaces – Machinery inside the well (*continued*)

2C.3 Working areas in the pit	N/A	☐
a) Where machinery is installed in the pit and there is a risk of uncontrolled movement whilst maintenance/inspection is being carried out with the car able to move, is a mechanical device available to create working space 2 m in height? [See BS EN 81-2:1998, 6.4.4.1a), b) and c).]	N/A	☐ Yes ☐
b) Where it is necessary to move the car from the pit, is an inspection control device provided? [See BS EN 81-2:1998, 6.4.4.1d).]	N/A	☐ Yes ☐
c) Is movement of the car prevented by an electrical safety device if the mechanical device in a) is active? [See BS EN 81-2:1998, 6.4.4.1f) and g).]	N/A	☐ Yes ☐
d) Is return of the car to normal operation only possible from an electrical reset device placed outside of the well in accordance with BS EN 81-2:1998, 6.4.4.1h)?	N/A	☐ Yes ☐
e) When the mechanical device is used, are sufficient clearances available to leave the pit safely? [See BS EN 81-2:1998, 6.4.4.2 .]	N/A	☐ Yes ☐
2C.4 Working areas on a platform	N/A	☐
a) Is the working platform permanently installed and retractable if it is in the travel path of the car or counterweight? (See BS EN 81-2:1998, 6.4.5.1 .)	N/A	☐ Yes ☐
b) Where the platform is in the travel path but movement of the car is unnecessary for maintenance and inspection, is an interlocked mechanical device available to prevent movement of the car? [See BS EN 81-2:1998, 6.4.5.2a).]	N/A	☐ Yes ☐
c) Where the platform is in the travel path and movement of the car is necessary for maintenance and inspection, is an interlocked mechanical device available to stop the car or counterweight from travelling closer than 2 m towards the platform? [See BS EN 81-2:1998, 6.4.5.2b).]	N/A	☐ Yes ☐
d) Has the device in c) been provided with buffers and electrical safety contacts and confirmed to operate in accordance with BS EN 81-2:1998, 6.4.5.5 ?	N/A	☐ Yes ☐

Table 2C **Result of examination and test for hydraulic lifts – Machinery spaces – Machinery inside the well** (*continued*)

2C.4 Working areas on a platform (<i>continued</i>)			
e)	Confirm that the dimensions of the platform are in accordance with BS EN 81-2:1998, 6.4.5.3 .		Yes ☐
f)	If the platform is retractable, is it fitted with an electrical safety device in accordance with BS EN 81-2:1998, 6.4.5.4a ?	N/A ☐	Yes ☐
g)	If retractable, is the platform able to be placed into position from the pit or from a position outside the well? [See BS EN 81-2:1998, 6.4.5.4b .]	N/A ☐	Yes ☐
h)	Where access to the platform is not through a landing door, is the access through the inspection door prevented when the platform is not in place, or has a means to prevent falls through the open door been provided? (See BS EN 81-2:1998, 6.4.5.4 .)	N/A ☐	Yes ☐
i)	Where it is necessary to move the car from the platform, is an inspection control device provided conforming to BS EN 81-2:1998, 6.4.5.6 ?	N/A ☐	Yes ☐
2C.5 Working areas outside the well			
			N/A ☐
a)	Where working spaces inside the well are accessed from outside the well, are the dimensions, construction and operation of inspection doors/traps, including their electrical safety contacts, in accordance with BS EN 81-2:1998, 6.4.7.1 ?	N/A ☐	Yes ☐
b)	Where machinery is accessed inside the well from spaces outside the well, are the dimensions, construction and operation of inspection doors/traps, including their electrical safety contacts, in accordance with BS EN 81-2:1998, 6.4.7.2 ?	N/A ☐	Yes ☐
c)	Are the machinery spaces ventilated as specified in BS EN 81-2:1998, 6.4.8 ?	N/A ☐	Yes ☐
d)	Has lighting and at least one socket outlet been provided in accordance with BS EN 81-2:1998, 6.4.9 and 13.6 ?		Yes ☐
e)	Have lifting points installed in the machinery spaces been marked with their safe working load? (See BS EN 81-2:1998, 6.4.10 and 15.4.5 .)	N/A ☐	Yes ☐

Table 2D Result of examination and test for hydraulic lifts – Machinery spaces – Machinery outside the well

		N/A	☐
a) Have the machinery spaces outside the well been constructed to take the forces and loads to which they are intended to be subjected? (See BS EN 81-2:1998, 6.5.1.)	N/A	☐	Yes ☐
<i>NOTE Only where visual examination suggests non-compliance should further investigation be undertaken</i>			
b) Is the machinery located in a dedicated cabinet, not containing services which do not belong to the lift? (See BS EN 81-2:1998, 6.5.2.1.)	N/A	☐	Yes ☐
c) Are the control cabinet walls, floor, roof and doors imperforate, except for ventilation openings? (See BS EN 81-2:1998, 6.5.2.2.)	N/A	☐	Yes ☐
d) Are the doors of the control cabinet of sufficient size to allow work to be carried out safely, opening outwards, and provided with a key-operated lock capable of being closed without the key? (See BS EN 81-2:1998, 6.5.2.3.)	N/A	☐	Yes ☐
e) Is the working area in front of the cabinet the correct size? (See BS EN 81-2:1998, 6.4.2.)	N/A	☐	Yes ☐
f) Is the control panel suitably ventilated to protect against dust, harmful fumes and humidity? (See BS EN 81-2:1998, 6.5.4.)	N/A	☐	Yes ☐
g) Is the cabinet provided with at least one electrical socket outlet and lighting to 200 lux controlled by a switch inside the cabinet? (See BS EN 81-2:1998, 6.5.5 and 13.6.2.)	N/A	☐	Yes ☐

Table 2E Result of examination and test for hydraulic lifts – Machinery spaces – Pulley spaces

2E.1 Pulley rooms	N/A	☐
a) Is the pulley room constructed to withstand the loads and forces to which it will be subjected, and does it have a non-slip floor? (See BS EN 81-2:1998, 6.7.1.1 .) <i>NOTE Only where visual examination suggests non-compliance should further investigation be undertaken</i>	Yes	☐
b) Are the dimensions of the pulley room in accordance with BS EN 81-2:1998, 6.7.1.2 ?	Yes	☐
c) Are all doors and trap doors associated with the pulley room in accordance with BS EN 81-2:1998, 6.7.1.3 ?	Yes	☐
d) Are all other openings between the pulley room and the well suitably protected? (See BS EN 81-2:1998, 6.7.1.4 .)	Yes	☐
e) Is the pulley room provided with a stopping device in accordance with BS EN 81-2:1998, 6.7.1.5 ?	Yes	☐
f) Where there is a risk of frost, condensation or where electrical equipment is fitted, is suitable heating and ventilation provided? (See BS EN 81-2:1998, 6.7.1.6 .)	N/A ☐ Yes ☐	
g) Have lighting and socket outlets been provided in the pulley room in accordance with BS EN 81-2:1998, 6.7.1.7 ?	Yes	☐
2E.2 Pulleys in the well	N/A	☐
a) If pulleys are located in the well [with the exception of b)], are they outside the projection of the car roof and easily accessible for maintenance? (See BS EN 81-2:1998, 6.7.2 .)	N/A ☐ Yes ☐	
b) Are single or double wrapped pulleys installed above the car, diverting towards the counterweight, able to be reached in safety from the car roof or work platform? (See BS EN 81-2:1998, 6.7.2 .)	N/A ☐ Yes ☐	

Table 3 Result of examination and test for hydraulic lifts – Well

3.1 Clearance and run-bys

*NOTE In a) and h), $h = 0.035 v^2$ for indirect acting lifts. For direct acting lifts, $h = 0$.
[See BS EN 81-2:1998, 5.7.1.1f).]*

- a) With the ram in its ultimate position, confirm, with reference to Figure 1, that the following conditions are met.

			Distance
1) The rail lengths can accommodate a further travel of at least $(0.1 + h)$ m. [See BS EN 81-2:1998, 5.7.1.1a).]	Specified		Actual
2) The dimension of the standing area on the car roof to the first striking point above is at least $(1.0 + h)$ m. [See BS EN 81-2:1998, 5.7.1.1b).]	Specified		Actual
3) The free vertical distance between the lowest part of the ceiling of the well and the highest item of equipment on the car roof [excluding iv)] is at least $(0.3 + h)$ m. [See BS EN 81-2:1998, 5.7.1.1c)1).]	Specified		Actual
4) The free vertical distance between the lowest part of the ceiling of the well and the highest part of guide shoes/rollers, rope attachments, header or parts of vertically sliding doors is at least $(0.1 + h)$ m. [See BS EN 81-2:1998, 5.7.1.1c)2).]	Specified		Actual

- b) Is there sufficient space above the car to accommodate, resting on one face, a rectangular block $0.5 \text{ m} \times 0.6 \text{ m} \times 0.8 \text{ m}$?
[See BS EN 81-2:1998, 5.7.1.1d).]

Yes

- c) For indirect acting lifts, is there at least 0.1 m above the ram to the first striking point?
[See BS EN 81-2:1998, 5.7.1.1e).]

N/A

Yes

Distance

- d) With the car resting on its fully compressed buffers, is the further guided travel of the balancing weight at least $(0.1 + 0.035 v_d^2)$ m.
[See BS EN 81-2:1998, 5.7.1.2.)]

Actual m

Yes

Table 3 Result of examination and test for hydraulic lifts – Well (*continued*)**3.1 Clearance and run-bys (*continued*)**

e) With the car resting on its fully compressed buffers, confirm, with reference to Figure 2, that the following conditions are met.

- 1) There is sufficient space below the car to accommodate, resting on one face, a rectangular block 0.5 m × 0.6 m × 1.0 m. [See BS EN 81-2:1998, **5.7.2.3a**.]

Yes

☐**Distance**

- 2) There is a free vertical space between the bottom of the pit and the lowest part of the car [excluding the area in 3)] of at least 0.5 m. [See BS EN 81-2:1998, **5.7.2.3b**.]

Actual

Yes

☐

- 3) There is a free vertical distance of not less than 0.1 m within a horizontal distance of 0.15 m between i) the apron or parts of the vertical sliding door and adjacent walls, and ii) the lowest parts of the car and the guide rails. [See BS EN 81-2:1998, **5.7.2.3b**.]

Actual

Yes

☐

- 4) Except for the items in f3) above, there is a free vertical distance between the highest parts in the pit and the lowest part of the car of at least 0.3 m. [See BS EN 81-2:1998, **5.7.2.3c**.]

Actual

Yes

☐

- f) If the jack is inverted, is the distance between the ram head and the first striking point in the pit at least 0.5 m (0.1 m with a screen)? [See BS EN 81-2:1998, **5.7.2.3d**.]

N/A

☐

Actual

Yes

☐

- g) If there is a telescopic jack with a guiding yoke, is there 0.5 m between the lowest yoke and the pit floor with the jack fully collapsed? [See BS EN 81-2:1998, **5.7.2.3e**.]

N/A

☐

Actual

Yes

☐

- h) With the jack fully extended, is there at least (0.1 + *h*) m further guided travel for the balancing weight? [See BS EN 81-2:1998, **5.7.2.4**.]

N/A

☐

Actual

Yes

☐

Table 3 **Result of examination and test for hydraulic lifts – Well** *(continued)*

Figure 1 **Headroom clearances**

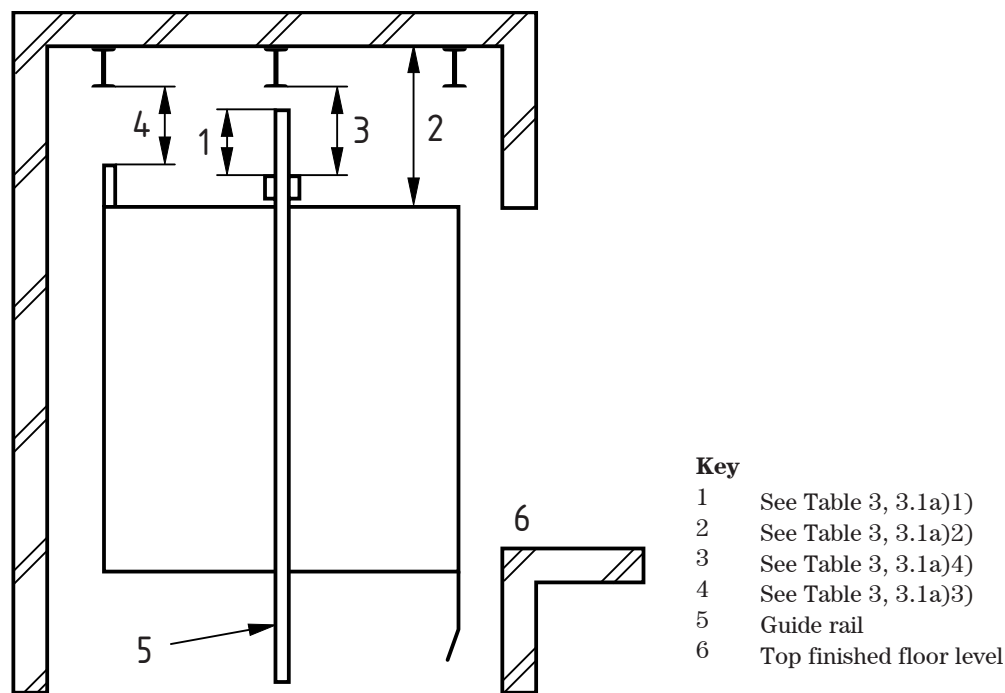


Figure 2 **Pit clearances**

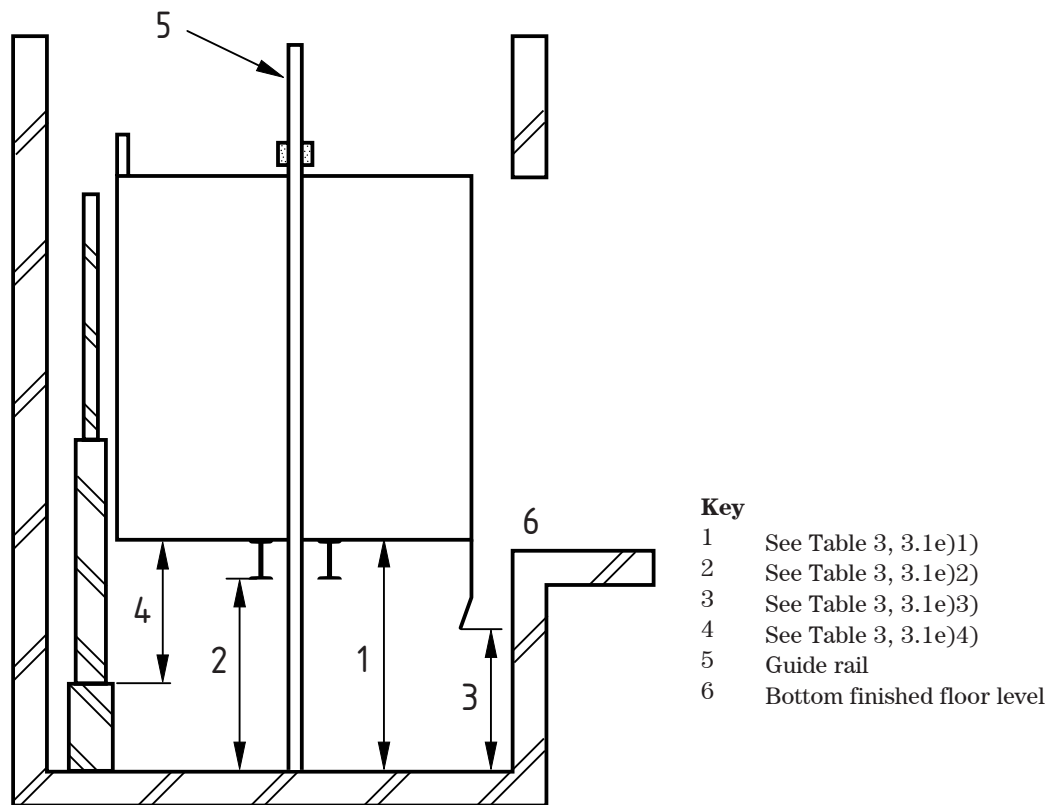


Table 3 Result of examination and test for hydraulic lifts – Well (*continued*)

3.2 Buffers			
3.2.1 Car buffers			
Do the car buffers conform to those specified?	Specified	Type Number	Yes ☐
Energy accumulation buffers (linear type) e.g. spring buffers			
With the car and its rated load placed on the buffers(s), and the ropes slack, does the compression correspond to that given by the characteristic curve of the buffer (as provided by the buffer or lift supplier)? [See BS EN 81-2:1998, D.2n .]	N/A	☐	Yes ☐
Energy accumulation buffers (non-linear type) e.g. polymer buffers			
Is the buffer CE marked?	N/A	☐	Yes ☐
Energy dissipation buffers e.g. hydraulic buffers			
With the car and its rated load brought into contact with the buffer at the buffer design speed (see BS EN 81-2:1998, 10.4.3.2c), confirm that there is no deterioration to the lift or buffer.			Yes ☒
Confirm the correct operation of the electrical safety contact, monitoring the return of the buffer to its normal extended position in accordance with BS EN 81-2:1998, 10.4.3.3 .			Yes ☐
Is the buffer CE marked?			Yes ☐
3.3 Protection in the well			
a) Confirm that in the case of a fully enclosed well there are no gaps in the enclosure except those listed in BS EN 81-2:1998, 5.2.1.1 .			Yes ☒
b) Is there a rigid balancing weight screen fitted? (See BS EN 81-2:1998, 5.6.1 .)	N/A	☐	Yes ☒
c) For adjacent lifts, is there a screen in the pit extending 2.5 m above the lowest landing? (See BS EN 81-2:1998, 5.6.2.1 .)	N/A	☐	Yes ☒

Table 3 Result of examination and test for hydraulic lifts – Well (*continued*)

3.3 Protection in the well (<i>continued</i>)			
d) If the distance between the moving parts of adjacent lifts is less than 0.5 m, is there a full height screen? (See BS EN 81-2:1998, 5.6.2.2 .)	N/A	☐	Yes ☒
e) Does the screen of the inverted jack ram head conform to BS EN 81-2:1998, 5.7.2.3d ?	N/A	☐	Yes ☒
f) Do the inspection doors and inspection traps, including their electrical safety contacts, conform to BS EN 81-2:1998, 5.2.2 ?	N/A	☐	Yes ☒
g) Does the access to the pit, including access doors and their electrical safety contacts, conform to BS EN 81-2:1998, 5.7.2.2 and 6.4.4.1 ?	N/A	☐	Yes ☒
h) For partially enclosed wells, is there screening conforming to BS EN 81-2:1998, 5.2.1.2 and Figure 1?	N/A	☐	Yes ☒
i) Are all the other requirements of BS EN 81-2:1998, 5.2.1.2 satisfied?	N/A	☐	Yes ☒
j) Where required, does the well ventilation conform to BS EN 81-2:1998, 5.2.3 ?	N/A	☐	Yes ☒
k) Does the wall facing the car entrance conform to BS EN 81-2:1998, 5.4.3 ?			Yes ☒
l) Have rotating pulleys in the well been guarded in accordance with BS EN 81-2:1998, 9.7 ?	N/A	☐	Yes ☐
m) Where there are accessible areas under the pit, have precautions been taken in accordance with BS EN 81-2:1998, 5.5 ?	N/A	☐	Yes ☐
n) Does the well meet the requirements of BS EN 81-2:1998, 5.3 , particularly in relation to any glass used in its construction?			Yes ☐
o) Confirm that there is no equipment installed in the lift well which is not associated with the safe operation of the lift. (See BS EN 81-2:1998, 6.1.1 .)	N/A	☐	Yes ☒
3.4 Landing door assemblies			
a) Is the running clearance between door panels, and between panels and uprights, lintels and sills 6 mm or less? (See BS EN 81-2:1998, 7.1 .)			Yes ☐
b) Confirm that no recess or projection on the face of the sliding door panels exceeds 3 mm. (See BS EN 81-2:1998, 7.5.1 .)			Yes ☐