BS 8486-2:2007+A1:2011

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

Publishing and copyright information

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A1	March 2011	References, Table 7, Table 8 (see foreword)

Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to v, a blank page, pages 1 to 69 and a back cover.

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BS 8486-2:2007+A1:2011 supersedes BS 8486-2:2007, which is withdrawn.

BS 8486-2:2007 superseded BS 5655-10.2.1:1995 and PAS 32-2:1999 with regard to the testing of new lifts installations.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BS 8486-2:2007 superseded bothBS 5655-10.2.1 and PAS 32-2 with regard to the testing of new lift installations.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].

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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*

〉A1〈 [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 81-70 Annex B	N/A		Yes	
BS EN 81-71 Annex C	N/A		Yes		BS EN 81-72 Annex D	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**

Tick all those applicable:

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**.) *NOTE Only where visual examination suggests non-compliance should further investigation be undertaken.*		**Yes** ☐
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**? *NOTE Only where visual examination suggests non-compliance should further investigation be undertaken*		**Yes** ☐
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**.) *NOTE Only where visual examination suggests non-compliance should further investigation be undertaken.*			**Yes**	☐
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, **6.4.3.1**a).]	**N/A**	☐	**Yes**	☐
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, **6.4.3.1**b).]	**N/A**	☐	**Yes**	☐
c) When the mechanical device is used, are sufficient clearances available to leave the car safely? [See BS EN 81-2:1998, **6.4.3.1**c).]	**N/A**	☐	**Yes**	☐
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**	☐	**Yes**	☐
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**	☐	**Yes**	☐

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, **6.4.4.1**a), 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, **6.4.4.1**d).]	**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, **6.4.4.1**f) 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, **6.4.4.1**h)?	**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, **6.4.5.2**a).]	**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, **6.4.5.2**b).]	**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 (*continued*)

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, **6.4.5.4**a)?	**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, **6.4.5.4**b).]	**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**.) *NOTE Only where visual examination suggests non-compliance should further investigation be undertaken*	**N/A** ☐	**Yes**	☐
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**.) *NOTE Only where visual examination suggests non-compliance should further investigation be undertaken*			**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, **5.7.1.1**f).]*

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, **5.7.1.1**a).]	**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, **5.7.1.1**b).]	**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, **5.7.1.1**c)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, **5.7.1.1**c)2).]	**Specified**		**Actual**	

b) Is there sufficient space above the car to accommodate, resting on one face, a rectangular block 0.5 m × 0.6 m × 0.8 m? [See BS EN 81-2:1998, **5.7.1.1**d).] **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, **5.7.1.1**e).] **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 $(0.1 + 0.035v_d^2)$ 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, **5.7.2.3**a).] **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, **5.7.2.3**b).] **Actual** m **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, **5.7.2.3**b).] **Actual** m **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, **5.7.2.3**c).] **Actual** m **Yes** ☐

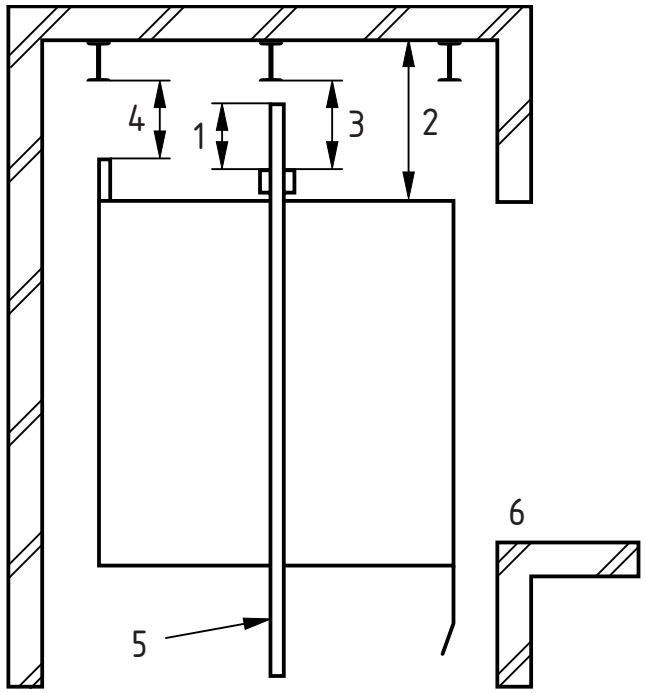
f) If the jack is inverted, is the distance between the ram head and the first striking point in the pit at least 0.5 m (0.1 m with a screen)? [See BS EN 81-2:1998, **5.7.2.3**d).] **N/A** ☐ **Actual** m **Yes** ☐

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, **5.7.2.3**e).] **N/A** ☐ **Actual** m **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** m **Yes** ☐

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

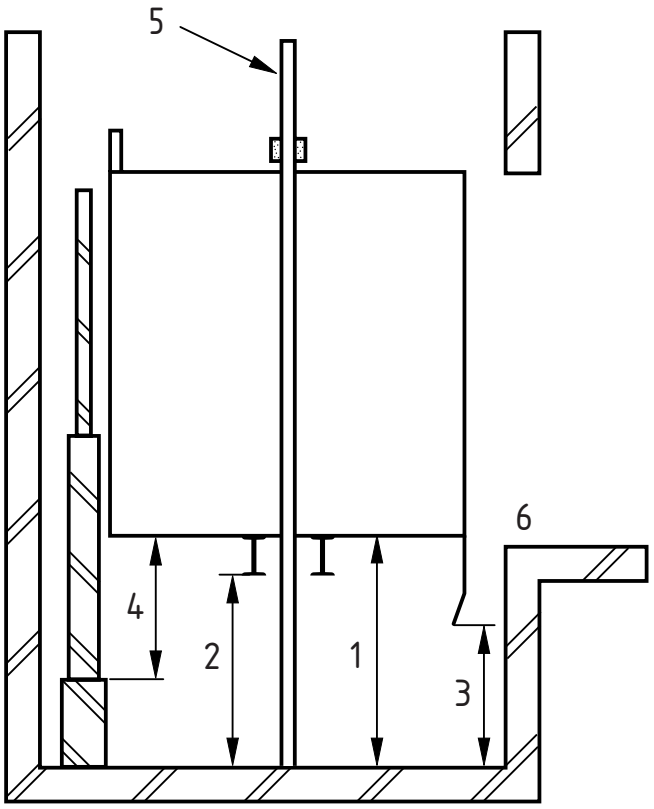
Figure 1 **Headroom clearances**



Key

1 See Table 3, 3.1a)1)
2 See Table 3, 3.1a)2)
3 See Table 3, 3.1a)4)
4 See Table 3, 3.1a)3)
5 Guide rail
6 Top finished floor level

Figure 2 **Pit clearances**



Key

1 See Table 3, 3.1e)1)
2 See Table 3, 3.1e)2)
3 See Table 3, 3.1e)3)
4 See Table 3, 3.1e)4)
5 Guide rail
6 Bottom finished floor level

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**		**Yes**	
		Number			

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.2**n).]	**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

			N/A	
With the car and its rated load brought into contact with the buffer at the buffer design speed (see BS EN 81-2:1998, **10.4.3.2**c), 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 (*continued*)				
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, **5.7.2.3**d)?	**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**	

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

3.4 Landing door assemblies (*continued*)

c) Is there a fire test certificate available and in order (if required)? **N/A** ☐ **Yes** ☐

d) If the answer to c) is YES, are the landing doors correctly fire rated for the installation? **Specified** **Type** ☐ **Rating** ☐ min **Yes** ☐

e) Are glass panels (if any) correctly marked in accordance with BS EN 81-2:1998, **7.2.3.5**? **Specified** ☐ **Yes** ☐

f) Has one of the options for child protection in BS EN 81-2:1998, **7.2.3.6** been adopted? **N/A** ☐ **Yes** ☐

3.5 Landing door locks

a) Are the correct door locks fitted? **Specified** ☐ **Yes** ☐

b) Are all door locks CE marked? **Yes** ☐

3.6 Lighting and outlet sockets

a) Does the lighting in the well conform to BS EN 81-2:1998, **5.9** and **13.6** with regard to lighting levels, position and switching? **Actual** ☐ lux **Yes** ☐

NOTE For fire-fighting lifts only, the lighting may be positioned in accordance with BS EN 81-72 instead of BS EN 81-2.

b) Has an electrical outlet socket been provided in the pit in accordance with BS EN 81-2:1998, **5.7.3.4**? **Yes** ☐

3.7 Car and balancing weight guide rails

a) Does the designation of the guide rails conform to that specified? **Car** **Specified** ☐ **Actual** ☐ **BWT** **Specified** ☐ **Actual** ☐

b) Does the pitch of the rail fixings conform to the layout drawing? **Car** **Specified** ☐ **Actual** ☐ **BWT** **Specified** ☐ **Actual** ☐

c) Where guides are lubricated, confirm that this is in accordance with the safety gear type test certificate or maintenance/setting up instructions. **N/A** ☐ **Yes** ☐

Table 4 **Result of examination and test for hydraulic lifts – Car, inspection operation and entrance clearances**

4.1 Car

a)	What is the weight of the empty car?			**Specified**			kg
	NOTE Only where the person conducting the test has cause to doubt the weight of the car against that specified is further investigation required.						
b)	Does the available floor area, related to the rated load and maximum number of passengers conform to BS EN 81-2:1998, **8.2**?	**Specified**			**Actual**		
c)	Is the inside of the car at least 2 m in height? (See BS EN 81-2:1998, **8.1.1**.)					**Yes**	
d)	Is each glass panel (if used) marked as specified in BS EN 81-2:1998, **8.3.2.4**?	**Doors**	**N/A**			**Yes**	
		Walls	**N/A**			**Yes**	
e)	Where glass panels are lower than 1.1 m from the floor, are handrails provided in accordance with BS EN 81-2:1998, **8.3.2.2**?					**Yes**	
f)	Has one of the options for child protection in BS EN 81-2:1998, **8.6.8** been adopted?		**N/A**			**Yes**	
g)	Is the maximum load and makers name indicated in the car (i.e. no. of persons, load in kg and identification no.) and does it conform to BS EN 81-2:1998, **15.2.1**?					**Yes**	
h)	1) Has Annex A been fully completed?					**Yes**	
	2) Does the emergency alarm device allow two-way communication with a rescue service in accordance with BS EN 81-28?		**N/A**			**Yes**	
i)	Has ventilation been included in the car conforming to BS EN 81-2:1998, **8.16**?					**Yes**	
j)	Does the car and emergency lighting conform to BS EN 81-2:1998, **8.17**?				lux	**Yes**	
	NOTE The lighting level (lux) recorded should be that for normal operation.						

Table 4 **Result of examination and test for hydraulic lifts – Car, inspection operation and entrance clearances** (*continued*)

4.1 Car (*continued*)				
k) Does the car overload device operate as specified in BS EN 81-2:1998, **14.2.5**?			**Yes**	
l) Does the apron conform to BS EN 81-2:1998, **8.4**?			**Yes**	
m) Do emergency doors and trap doors, including their electrical safety contacts, conform to BS EN 81-2:1998, **8.12**?	**N/A**		**Yes**	
4.2 Car top				
a) Has the car top been fitted with controls, stopping devices and socket outlets conforming to BS EN 81-2:1998, **8.15**?			**Yes**	
b) Does the car top station conform to BS EN 81-2:1998, **14.2.1.3** in construction and operation, and in neutralizing of other controls?			**Yes**	
c) Is there at least one clear area for standing? (See BS EN 81-2:1998, **8.13.2**.)			**Yes**	
d) Does the alarm device as specified in BS EN 81-2:1998, **5.10** operate correctly?	**N/A**		**Yes**	
e) Does the balustrade on the car roof conform to BS EN 81-2:1998, **8.13.3**?	**N/A**		**Yes**	
4.3 Car entrance clearances				
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, **8.6.3**.)			**Yes**	
b) Confirm that no recess or projection on the face of sliding door panels exceeds 3 mm. (See BS EN 81-2:1998, **8.7.1**.)			**Yes**	
c) Is the horizontal distance between the sill of the car and the sill of the landing doors 35 mm or less? (See BS EN 81-2:1998, **11.2.2**.)			**Yes**	
d) Is the distance between the inner surface of the well and the sill or framework of the car entrance or door 0.15 m or less, or 0.2 m if over a height not exceeding 0.5 m? (See BS EN 81-2:1998, **11.2.1**.)	**No**		**Yes**	

Table 4 **Result of examination and test for hydraulic lifts – Car, inspection operation and entrance clearances** (*continued*)

4.3 Car entrance clearances (*continued*)

e)	If the answer to d) is NO, does the car door mechanically lock when out of the unlocking zone, as specified in BS EN 81-2:1998, **8.9.3** and **11.2.1**c)?	**N/A**		**Yes**	
f)	Confirm that where there is a hinged landing door and a folding car door, the clearances between them do not exceed 150 mm. (See BS EN 81-2:1998, **11.2.4**.)	**N/A**		**Yes**	

4.4 Landing and car door tests

NOTE *If appropriate, the tests in **4.4** should be carried out with the car and landing doors coupled.*

If the doors are power-operated, answer all except p).		**N/A**		**Yes**	
If the doors are manual, e.g. shutter gates and hinged doors, answer e) to p) below.		**N/A**		**Yes**	
a)	Is the force to prevent closing 150 N or less? (See BS EN 81-2:1998, **7.5.2.1.1.1** and **8.7.2.1.1.1**.)	**N/A**		**Yes**	
b)	Is the kinetic energy 10 J or less? (See BS EN 81-2:1998, **7.5.2.1.1.1**, **8.6.3**, and **8.7.2.1.1.2**.)	**N/A**		**Yes**	
c)	Do all the protective devices reverse the doors as specified in BS EN 81-2:1998, **7.5.2.1.1.3** and **8.7.2.1.1.3**?	**N/A**		**Yes**	
d)	If the doors are able to close with the reversal device inoperative, is the kinetic energy no more than 4 J? (See BS EN 81-2:1998, **7.5.2.1.1.3** and **8.7.2.1.1.3**.)	**N/A**		**Yes**	
e)	With a mechanical force of 150 N, confirm that the clearances specified in BS EN 81-2:1998, **7.1** do not exceed 30 mm for side opening doors or 45 mm for centre opening doors. (See BS EN 81-2:1998, **7.2.3.2**.)			**Yes**	
f)	Is the unlocking zone 0.2 m or less above or below landing levels (or 0.35 m for simultaneously operated car and landing doors)? (See BS EN 81-2:1998, **7.7.1**.)			**Yes**	
g)	Does the automatic mechanical self-closing mechanism on each set of doors function correctly? (See BS EN 81-2:1998, **7.7.3.2**.)			**Yes**	

Table 4 **Result of examination and test for hydraulic lifts – Car, inspection operation and entrance clearances** (*continued*)

4.4 Landing and car door tests (*continued*)

h)	Can each set of landing doors be unlocked from outside, with an emergency key? (See BS EN 81-2:1998, **7.7.3.2**.			**Yes**	☐
i)	Can the car doors be manually opened within the unlocking zone with a force of less than 300 N with the power off? (See BS EN 81-2:1998, **8.11.2**.)			**Yes**	☐
j)	Is the maximum force to prevent opening of the folding doors 150 N? (See BS EN 81-2:1998, **8.7.2.1.1.4**.)	**N/A**	☐	**Yes**	☐
k)	Do vertically sliding doors conform to BS EN 81-2:1998, **7.5.2.2**a), b) and d), and **8.7.2.2**b), c) and e)?	**N/A**	☐	**Yes**	☐
l)	Do the contacts at each landing entrance stop and prevent movement of the car outside the unlocking zone when broken? (See BS EN 81-2:1998, **7.7.4**.)			**Yes**	
m)	Are the mechanical locks at each landing entrance proved for positive locking? (See BS EN 81-2:1998, **7.7.5**.)			**Yes**	
n)	Does the car door lock function correctly (if fitted)? (See BS EN 81-2:1998, **8.9.3**.)	**N/A**	☐	**Yes**	
o)	Is there no car movement outside the unlocking zone when the car door/gate contacts are broken? (See BS EN 81-2:1998, **8.9**.)			**Yes**	
p)	Does the "car here" indicator conform to BS EN 81-2:1998, **7.6.2** for manual doors?	**N/A**	☐	**Yes**	☐

Table 5 **Result of examination and test for hydraulic lifts – Suspension, compensation, braking and traction**

5.1 Suspension **N/A** ☐

5.1.1 Suspension ropes **N/A** ☐

a) Number	**Specified**		**Actual**		
b) Nominal diameter	**Specified**	mm	**Actual**	mm	
c) Lay and construction	**Specified**		**Actual**		

d) Are the correct ropes supplied in accordance with BS EN 12385-5 and is the test certificate available and in order? (A copy is sufficient.) **Yes** ☐

5.1.2 Rope anchorages **N/A** ☐

Type of termination **Car** ☐ **BWT** (if applicable) ☐ **Suspension points** ☐

Are the rope terminations correctly made and secure as specified in BS EN 81-2:1998, **9.2.3** and **9.2.4**? **Yes** ☐

Do the rope terminations conform to BS EN 81-2:1998, **9.5**, ensuring distribution of load between ropes? **Yes** ☐

5.1.3 Suspension chains **N/A** ☐

a) Number	**Specified**		**Actual**		
b) Pitch	**Specified**	mm	**Actual**	mm	
c) Type and construction	**Specified**		**Actual**		

Table 5 **Result of examination and test for hydraulic lifts – Suspension, compensation, braking and traction** (*continued*)

5.1.3 Suspension chains (*continued*)		
d) Are the correct chains supplied and is the test certificate available and in order? (A copy is sufficient.)		**Yes** ☐
e) Do the chain terminations conform to BS EN 81-2:1998, **9.3**, ensuring distribution of loads between chains.		**Yes** ☐
5.2 Slack suspension device		
Does the slack suspension device operate correctly? (See BS EN 81-2:1998, **9.3.3** and **12.13**.)	**N/A** ☐	**Yes** ☐

Table 6 **Result of examination and test for hydraulic lifts – Safety contacts and circuits**

a)	Are the final limit switches positioned and operating correctly? (See BS EN 81-2:1998, **10.5**.)		**Yes**	
b)	Do the stopping devices (where required) in the pit, in the pulley room, on the car top, at the inspection device, at the lift machine and at the test panel stop and prevent movement of the car when operated? [See BS EN 81-2:1998, **5.7.3.4**, **6.7.1.5**, **8.15**b), **14.2.1.3**c), **14.2.2.1**f) and **14.2.2.1**g).]		**Yes**	
c)	Has the safety chain been tested to ensure that an earth fault in the most remote safety contact causes immediate stopping or prevents restarting ? [See BS EN 81-2:1998, **14.1.1.1**d).]		**Yes**	
d)	Does the phase reversal protection function correctly? [See BS EN 81-2:1998, **14.1.1.1**j).]		**Yes**	
e)	Confirm that the levelling and re-levelling circuits operate. (See BS EN 81-2:1998, **14.2.1.2**.)	**N/A**	**Yes**	
f)	Does the docking operation function as specified in BS EN 81-2:1998, **14.2.1.4**b)?	**N/A**	**Yes**	
g)	Do all electrical safety devices on the landing door panels that are not directly mechanically linked operate correctly? (See BS EN 81-2:1998, **7.7.6.2**.)	**N/A**	**Yes**	
h)	For two rope suspension, does the slack rope safety device operate correctly? (See BS EN 81-2:1998, **9.3.3**.)	**N/A**	**Yes**	
i)	Does the slack safety rope detector device operate correctly? (See BS EN 81-2:1998, **12.13**.)	**N/A**	**Yes**	
j)	Does the stopping device in the car operate correctly? [See BS EN 81-2:1998, **14.2.1.4**i).]	**N/A**	**Yes**	
k)	Do all other switches/contacts in safety devices stop and prevent movement of the car when operated? (See BS EN 81-2:1998, Annex A.)		**Yes**	
l)	Confirm that safety circuits containing electronic components are CE marked. (See BS EN 81-2:1998, **14.1.2.3.3**.)	**N/A**	**Yes**	

Table 7 **Result of examination and test for hydraulic lifts – Car and balancing weight safety gear and overspeed protection**

7.1 Car safety gear

a) Is the correct safety gear supplied? **Progressive** **Specified** ☐ **Actual** ☐ **Instantaneous** **Specified** ☐ **Actual** ☐

b) Is the safety gear CE marked? **Yes** ☐

c) Does the safety gear stop the car, in the downward direction, when operated by the governor and engaging at the appropriate speed, or other devices such as slack safety rope, with the load uniformly distributed at:

- rated load at rated speed, for instantaneous safety gear? [See BS EN 81-2:1998, **D.2**h)1)a).] **N/A** ☐ **Yes** ☐
- 125% of rated load at rated speed, for instantaneous safety gear? [See BS EN 81-2:1998, **D.2**h)1)b).] **N/A** ☐ **Yes** ☐
- 125% of rated load at rated speed or lower, for progressive safety gear? [See BS EN 81-2:1998, **D.2**h)2).] **N/A** ☐ **Yes** ☐

d) Is the floor of the lift car sloping no more than 5% from horizontal? (See BS EN 81-2:1998, **9.8.7**.) **Yes** ☐

e) After the test, confirm that no deterioration that could adversely effect normal use of the lift has occurred. [See BS EN 81-2:1998, **D.2**h).] **Yes** ☐

f) Confirm that the electrical safety device operates correctly in accordance with BS EN 81-2:1998, **9.8.8**. **Yes** ☐

7.2 Car governor

a) Is the correct governor installed and is the tripping speed correct? **Specified** ☐ **Yes** ☐

b) Is the governor CE marked? **Yes** ☐

c) Does the electrical safety device stop the lift in accordance with BS EN 81-2:1998, **9.10.2.10**? **Yes** ☐

d) Is the governor sealed (if adjustable)? **N/A** ☐ **Yes** ☐

e) Is the correct rope type installed? **Specified** ☐ **Yes** ☐

Table 7 **Result of examination and test for hydraulic lifts – Car and balancing weight safety gear and overspeed protection** (*continued*)

7.3 Balancing weight safety gear **N/A** ☐

a) Is the correct safety gear installed? **Specified** ☐ **Yes** ☐

b) Is the safety gear CE marked? **Yes** ☐

c) Does the safety gear stop the counterweight when operated and engaging at appropriate speed, with the car empty, at:

- rated speed, for instantaneous safety gear? [See BS EN 81-2:1998, **D.2**i)1).] **N/A** ☐ **Yes** ☐
- rated load or lower, for progressive safety gear? [See BS EN 81-2:1998, **D.2**i)2).] **N/A** ☐ **Yes** ☐

d) After the test, confirm that no deterioration that could adversely affect normal use of the lift has occurred. [See BS EN 81-2:1998, **D.2**i).] **Yes** ☐

7.4 Balancing weight governor **N/A** ☐

a) Is the correct governor installed? **Specified** ☐ **Actual** ☐

b) Is the governor CE marked? **Yes** ☐

c) If fitted, does the electrical safety device stop the lift in accordance with BS EN 81-2:1998, **9.10.2.10.**? **N/A** ☐ **Yes** ☐

d) Is the governor sealed (if adjustable)? **N/A** ☐ **Yes** ☐

e) Is the correct rope type installed? **Specified** ☐ **Yes** ☐

Table 7 **Result of examination and test for hydraulic lifts – Car and balancing weight safety gear and overspeed protection** (*continued*)

7.5 Car clamping device **N/A** ☐

a) Does the clamping device stop the car travelling at rated speed with 125% load uniformly distributed? [See BS EN 81-2:1998, **D.2**j)1) and 2).] **Yes** ☐

b) Are the calculations available and in order as specified in BS EN 81-2:1998, **8.2.2.3**? **Yes** ☐

c) After the test, confirm that no deterioration that could adversely affect normal use of the lift has occurred. [See BS EN 81-2:1998, **D.2**j).] **Yes** ☐

7.6 Pawl device **N/A** ☐

a) Does the pawl device stop the car travelling down at rated speed with 125% load uniformly distributed? [See BS EN 81-2:1998, **D.2**m)1).] **Yes** ☐

b) After the test, confirm that no deterioration that could adversely affect normal use of the lift has occurred. [See BS EN 81-2:1998, **D.2**m)1).] **Yes** ☐

7.7 Pipe rupture valve and restrictor **N/A** ☐

a) Answer the following:

1) Is there a pipe rupture valve installed? **N/A** ☐ **Specified** ☐ **Actual** ☐

2) Is there a restrictor installed? **N/A** ☐ **Specified** ☐ **Actual** ☐

b) Is the device CE marked? **Yes** ☐

c) Does the tripping speed conform to BS EN 81-2:1998, **D.2**r) and s)? **Yes** ☐

Table 7 **Result of examination and test for hydraulic lifts – Car and balancing weight safety gear and overspeed protection** (*continued*)

7.8 Mechanical anti-creep device		**N/A** ☐
a) Clamping device/safety gear (see BS EN 81-2:1998**, 9.10.5.2**):		**N/A** ☐
1) Does the lever actuate the device at each floor level and does it engage on its stops correctly? [See BS EN 81-2:1998, **9.10.5.2**a).]	**N/A** ☐	**Yes**
2) Does the rope activate the device? (See BS EN 81-2:1998, **9.10.5.1**.)	**N/A** ☐	**Yes**
3) With the car running, is the device fully retracted clear of its stops? (See BS EN 81-2:1998, **9.10.5**.)		**Yes**
b) Pawl device (see BS EN 81-2:1998, **9.11**):		**N/A** ☐
1) Does the pawl device engage on its stops at each landing to support the car? [See BS EN 81-2:1998, **D.2**m)2).]		**Yes**
2) Does the pawl device properly clear its supports when the car travels through the lift shaft? [See BS EN 81-2:1998, **D.2**m)2).]		**Yes**
3) Is the buffer stroke correct for the pawl device? [See BS EN 81-2:1998, **D2**m)3).]		**Yes**
7.9 Electrical anti-creep device		**N/A** ☐
Does the system operate correctly with rated load in the car? [See BS EN 81-2:1998, **14.2.1.5** and **D2**y).]		**Yes**

Table 7 **Result of examination and test for hydraulic lifts – Car and balancing weight safety gear and overspeed protection** (*continued*)

〈A1〉 7.10 Unintended car movement protection means		
a) Is a means to detect and stop unintended car movement provided? (See BS EN 81-2:1998, **9.13**.)	**Specified**	**Yes**
b) Is the means type tested? (See BS EN 81-2:1998, **F.8**.)		**Yes**
c) Confirm that the self-monitoring operates correctly. (See BS EN 81-2:1998, **9.13.3**.)		**Yes**
d) Confirm that the protection means stops the car within the required distance. [See BS EN 81-2:1998, **D.2**z)c).]		**Yes**
e) Does the electrical safety device stop the lift in accordance with BS EN 81-2:1998, **9.13.8**?		**Yes**
〈A1〉		

Table 8 **Result of examination and test for hydraulic lifts – Measurement system parameters**

a) Check the mains current (running with full load up) to ensure that it is within the specified limit.
[See BS EN 81-2:1998, **D.2**d).]

Specified ☐ **Actual** ☐

b) Measure and record the following speeds when the car is at mid-point of travel.
[See BS EN 81-2:1998, **D.2**d).]

NOTE Manufacturers may use dedicated test tools/devices to prove current/power and speed are within the specified limits. This should be recorded in a) and b).

All measurements in metres per second (m/s)

Car loading condition	**Direction of travel**	**Lift speed** **12.8** [B]	**Levelling speed** [A] **(<0.8 m/s)** **14.2.1.2** [B]	**Re-levelling speed** **(<0.3 m/s)** **14.2.1.2** [B]	**Inspection speed** **(<0.63 m/s)** **14.2.1.3** [B]	**Emergency operation speed** **(<0.63 m/s)** **14.2.1.3** [B]	**Docking operation speed** **(<0.3 m/s)** **14.2.1.4** [B]
Empty	Up						
	Down						
Rated	Up						
	Down						

[A] With advance door opening.
[B] Subclause in BS EN 81-2:1998.

c) Confirm that all the measured speeds (empty car up, loaded car down) do not exceed the rated speed by more than 8% according to BS EN 81-2:1998, **12.8.2**. **Yes** ☐

d) 〈A1〉 Confirm that the stopping accuracy is within ±10 mm at all landings with balanced load. (See BS EN 81-2:1998, **12.15**.) **Yes** ☐

e) Confirm that the levelling accuracy is maintained within ±20 mm during loading or unloading at the most unfavourable floor.
[See BS EN 81-2:1998, **D.2**z)b).] **Yes** ☐

NOTE The most unfavourable floor is normally the lowest with the lift levelling upwards.

〈A1〉

Table 8 **Result of examination and test for hydraulic lifts – Measurement system parameters** (*continued*)

A1 f)	Pressure test:	
1)	State the full load static pressure with the car at the top floor. [See BS EN 81-2:1998, **D.2**q).]	bar A1
2)	Does the pressure relief valve operate at 140% full load pressure? (See BS EN 81-2:1998, **13.3**.)	**Yes** ☐
3)	With 200% full load static pressure applied to the system for 5 min, confirm that there is no pressure drop due to leakage. [See BS EN 81-2:1998, **D.2**t).]	**Yes** ☐
4)	Is the integrity of the hydraulic system maintained after the 200% test?	**Yes** ☐
5)	Confirm that the car does not creep down from the top floor more than 10 mm in 10 min. [See BS EN 81-2:1998, **D.2**u).]	**Yes** ☐
6)	Does the manual lowering automatically stop before the ropes or chain can become slack? (See BS EN 81-2:1998, **13.3**.)	**Yes** ☐
7)	Confirm that the oil temperature overheating protection device functions correctly. [See BS EN 81-2:1998, **D.2**x).]	**Yes** ☐

Table 9 **Result of examination and test for hydraulic lifts – Protective devices**

9.1 Pump motor windings		
Is motor protection provided? (See BS EN 81-2:1998, **13.3**.)	**N/A** ☐	**Yes** ☐
9.2 Door motor windings		
Is motor protection provided? (See BS EN 81-2:1998, **13.3**.)	**N/A** ☐	**Yes** ☐
9.3 Main power converter		
Is protection provided? (See BS EN 81-2:1998, **13.3**.)	**N/A** ☐	**Yes** ☐
9.4 Motor run time limiter		
Is the correct motor run time limiter provided and does it operate correctly? (See BS EN 81-2:1998, **12.10**.)		**Yes** ☐
9.5 Lighting and socket outlet protection		
Is the lighting and socket electrical supply separate to that of the lift machine and do these circuits have their own independent short circuit protection? (See BS EN.81-2:1998, **13.6.1** and **13.6.3.3**.)		**Yes** ☐

Table 10 **Result of examination and test for hydraulic lifts – Electrical wiring examination**

10.1 Insulation resistance to earth		
Does the insulation resistance to earth for the electrical system conform to BS EN 81-2:1998, **13.1.3**? [See also **D.2**e)1).]	Value MΩ	**Yes**
10.2 Earthing		
Confirm electrical continuity between the earth main terminal and all parts of the lift liable to be made live accidentally. [See BS EN 81-2:1998, **D.2**e)2).]		**Yes**
10.3 Electrical wiring		
a) Do the electrical conductors, including travelling cables, conform to BS EN 81-2:1998, **13.5**?		**Yes**
b) Is the wiring installed (for EMC compliance) in accordance with the manufacturer's instructions?		**Yes**
c) Are the controller and other electrical equipment protected against direct contact with enclosures of at least IP2X?		**Yes**

Table 11 **Result of examination and test for hydraulic lifts – Documentation**

a) Is there a register conforming to BS EN 81-2:1998, **16.2**?	**Yes**
b) Is there an instruction manual conforming to BS EN 81-2:1998, **16.3**? (See BS EN 13015.)	**Yes**

Table 12 **Confirmation of conformity to BS EN 81 series standards**

a) Are all the items associated with the installation, for which the lift manufacturer is not responsible, in a suitable state for the installation to be put into service? **No** ☐ **Yes** ☐

NOTE Some of the items requiring attention might not be part of the contract for the lift but part of the installation and the responsibility of others.

If NO, provide details.

b) Does the lift conform to BS EN 81-2:1998? **No** ☐ **Yes** ☐

c) Does the lift conform to BS EN 81-28:1998 and Annex A? **N/A** ☐ **No** ☐ **Yes** ☐

d) Does the lift conform to BS EN 81-70:1998 and Annex B? **N/A** ☐ **No** ☐ **Yes** ☐

e) Does the lift conform to BS EN 81-71:1998 and Annex C? **N/A** ☐ **No** ☐ **Yes** ☐

f) Does the lift conform to BS EN 81-72:1998 and Annex D? **N/A** ☐ **No** ☐ **Yes** ☐

g) Does the lift conform to BS EN 81-73:1998 and Annex E? **N/A** ☐ **No** ☐ **Yes** ☐

If NO, state reasons.

NOTE These can include Notified Body approval having been obtained (Design Examination Certificate or EC type examination). Additional/alternative tests might be required for any deviations from the standard, the results of which should be attached to the present test results.

h) Have all the questions been answered for b) and c) to g) as applicable? **No** ☐ **Yes** ☐

If NO, state reasons.

Signature		Name (in capitals)		Position	
Company		Date		Place of signature	

Annex A (normative) Remote alarms

*NOTE When a lift is installed in accordance with the Lifts Regulations 1997 [2] and is first placed into service, a test of the alarm device is required to show conformity to BS EN 81-2:1998, Annex D, **D.2**m).*

Where lifts are to be provided with remote alarms, a record of the results of the test shall be made using the questionnaire given in Table A.1. This questionnaire shall also be used whenever an alarm device is replaced or repaired.

Table A.1 **Result of examination and test for hydraulic lifts – Alarm systems**

A.1 Alarm transmissions (see BS EN 81-28:2003, **4.1.1**)		
a) Confirm that if an alarm communication is interrupted, any re-emission after acknowledgement is not impeded by the alarm equipment.	**Yes**	☐
NOTE The requirements of the communication network might need to be considered.		
b) Confirm that the emission of alarm information to the alarm equipment transmitter is not delayed, except during filtering.	**Yes**	☐
c) Confirm that the alarm system accepts communication from the rescue service until the end of the alarm has occurred.	**Yes**	☐
d) Confirm that between the acknowledgement and the end of alarm, any filtering is bypassed.	**Yes**	☐
e) Confirm that after acknowledgement, if the communication is interrupted, the alarm equipment stops automatic re-emission.	**Yes**	☐
A.2 End of alarm (see BS EN 81-28:2003, **4.1.2**)		
a) Check that the end of alarm can only be initiated from the installation to which the alarm belongs.	**Yes**	☐
b) Check that the means to initiate the end of alarm is out of the reach of any non-competent person.	**Yes**	☐
c) Check that provision has been made to allow remote resetting of the alarm equipment.	**Yes**	☐
A.3 Emergency electrical power supply (see BS EN 81-28:2003, **4.1.3**)		
a) Confirm that no alarm is impeded or lost in cases of electrical power supply switching or power supply failure.	**Yes**	☐
b) Check that where a rechargeable emergency electrical power supply is used, the means to automatically inform the rescue service operates when the capacity is lower than that needed to provide 1 h of function of the alarm system.	**Yes**	☐

Table A.1 **Result of examination and test for hydraulic lifts – Alarm systems** (*continued*)

A.4 Information in the car, where conformity to BS EN 81-70:2003 is required				
a) Check that when an alarm initiation device is operated, the yellow pictogram illuminates and an audible signal sounds in accordance with BS EN 81-70:2003, **5.4.4.3**a).	**N/A**		**Yes**	
b) Check that when the alarm has been registered by the rescue service, the green pictogram illuminates and an audible signal sounds in accordance with BS EN 81-70:2003, **5.4.4.3**b).	**N/A**		**Yes**	
c) Check that the voice link has been adjusted to suit the site conditions in accordance with BS EN 81-70:2003, **5.4.4.3**b).	**N/A**		**Yes**	
A.5 Alarm filtering (see BS EN 81-28:2003, **4.1.5**)				
a) Check that an alarm is not initiated when the car is in an unlocking zone and the car and landing doors are fully open.			**Yes**	
b) Check that an alarm is not initiated when the car is running and doors are opening at the next landing stop.			**Yes**	
c) Check that alarms initiated during maintenance and/or repair are not discarded.			**Yes**	
d) Check that the rescue service can deactivate and reactivate filtering of alarms.			**Yes**	
A.6 Alarm equipment identification				
Check that the alarm equipment transmits full alarm and location information to the rescue service and that the installation is identified correctly in accordance with BS EN 81-28:2003, **4.1.6**.			**Yes**	
A.7 Communication				
a) Check that after the operation of the alarm initiation device, no further action from the trapped users is necessary.			**Yes**	
b) Confirm that after the initiation of the alarm, the trapped users are not able to interrupt the two-way communication.			**Yes**	
c) Confirm that the user can always, during an alarm, re-initiate connection to the rescue service should this be necessary.			**Yes**	

Table A.1 **Result of examination and test for hydraulic lifts – Alarm systems** (*continued*)

A.8 Technical characteristics

a) Check that the alarm equipment can emit information to alternative reception equipment in accordance with BS EN 81-28:2003, **4.2.1**. **Yes** ☐

b) Check that the alarm equipment can make a test call in the selected time frame in accordance with BS EN 81-28:2003, **4.2.1**. **Yes** ☐

NOTE This test may be simulated by reducing the periodicity.

c) Confirm that any electrical interface between the alarm system and components of safety circuits of the lift are in accordance with BS EN 81-2:1998, **13.2.2** and **14.1.2.1.3**. **Yes** ☐

d) Check that the alarm initiation device(s) are installed at places where there is a risk of entrapment, in accordance with BS EN 81-28:2003, **4.2.3**. **Yes** ☐

*NOTE The requirements of BS EN 81-70:2003 might also need to be considered; see **A.4**.*

e) Check that all alarm initiation device(s) operate correctly, e.g. pit, car top. **Yes** ☐

f) Check that the alarm equipment is not accessible to passenger(s) in accordance with BS EN 81-28:2003, **4.2.4**. **Yes** ☐

g) Confirm that access to the parameters of the alarm system are protected in accordance with BS EN 81-28:2003, **4.2.5**. **Yes** ☐

A.9 Information

Confirm that all information has been provided in accordance with BS EN 81-28:2003, Clause **5**. **Yes** ☐

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Annex B (normative) Accessibility to lifts

Where lifts are provided for use by disabled persons, when the examination and tests specified in BS EN 81-70 are carried out, the results shall be recorded using the questionnaire given in Tables B.1 to B.3.

NOTE 1 The tester needs to be aware of all negotiations between the owner and the lift installer, in order to enable a correct response to these items. For example, the owner might have received agreement for deviations to the standard from the Planning Authority due to the constraints of an existing building.

*NOTE 2 Where tests relate to audible signals in the following tables, it is not generally expected that these need to be measured for their correct decibel level, but rather that they are present and working as intended. Where the tester suspects that the noise level is outside its specified range then reading might be necessary and should be taken at 1 m from the device in accordance with BS EN 81-70:2003, Clause **6** and Table 3.*

Table B.1 **Result of examination and test for hydraulic lifts – Lifts for use by disabled persons – Access to lift car**

a)	Confirm that the door providing access to the lift is a minimum of 800 mm wide. (See BS EN 81-70:2003, **5.2.1**.)			**Yes** ☐
b)	Confirm that all eligible floors to the lift are clear of any obstacles preventing free access in accordance with BS EN 81-70:2003, **5.2.2**. (See BS EN 81-70:2003, **0.4**.)			**Yes** ☐
c)	Confirm that the door dwell time is between 2 s and 20 s in accordance with BS EN 81-70:2003, **5.2.3**.			**Yes** ☐
d)	Confirm that the closing door passenger protection is full height between 25 mm and 1 800 mm. (See BS EN 81-70:2003, **5.2.4**.)			**Yes** ☐
e)	Confirm that any decorative finish on the car walls is less than 15 mm. (See BS EN 81-70:2003, **5.3.1.1**.)			**Yes** ☐
f)	Confirm that the lift car dimensions are in accordance with BS EN 81-70:2003, **5.3.1.1** (see BS EN 81-70:2003, Table 1 for dimensions). (See also BS EN 81-70:2003, **0.4**.)			**Yes** ☐
g)	Confirm that a handrail is fitted to at least one wall of the lift car and has dimensions of cross-section 30 mm × 45 mm and top edge (900 ± 25) mm from the car floor. Confirm that the handrail is at least 35 mm from the car wall. (See BS EN 81-70:2003, **5.3.2.1**.)			**Yes** ☐
h)	Confirm that (where required by negotiation) a tip-up seat is provided (500 ± 20) mm from the lift car floor, with a seat depth of 300 mm to 400 mm, a width of 400 mm to 500 mm, and capable of supporting a load of 100 kg. (See BS EN 81-70:2003, **5.3.2.2**.)	**N/A** ☐		**Yes** ☐
i)	Confirm that wall mirrors are provided for Type 1 or Type 2 lifts in accordance with BS EN 81-70:2003, **5.3.2.3** and are a minimum of 300 mm from floor level where the car walls are reflective.	**N/A** ☐		**Yes** ☐
j)	Confirm that stopping accuracy is ±10 mm and levelling accuracy within ±20 mm. (See BS EN 81-70:2003, **5.3.3**.)			**Yes** ☐

Table B.2 **Result of examination and test for hydraulic lifts – Lifts for use by disabled persons – Control devices and key pads (general)**

B.2.1 Control devices

a)	Confirm that the active part of the control buttons has a minimum area of 490 mm^2.[See BS EN 81-70:2003, Table 2a).]	**Yes** ☐
b)	Confirm that the minimum dimension of the active part of buttons is an inscribed circle of 20 mm. [See BS EN 81-70:2003, Table 2b).]	**Yes** ☐
c)	Confirm that the active parts of buttons are visually and by touch different from the faceplate and surrounds. [See BS EN 81-70:2003, Table 2c).]	**Yes** ☐
d)	Confirm that the faceplate is a contrast colour to its surrounds. [See BS EN 81-70:2003, Table 2d).]	**Yes** ☐
e)	Confirm that the force required to operate a button is between 2.5 N and 5 N. [See BS EN 81-70:2003, Table 2e).]	**Yes** ☐
f)	Confirm that there is an audible feedback to confirm that a call button has been pushed. [See BS EN 81-70:2003, Table 2f).]	**Yes** ☐
g)	Confirm that there is visible and audible [adjustable between 35 db(A) and 65 db(A)] registration feedback, and an audible signal on all subsequent operations. [See BS EN 81-70:2003, Table 2g).]	**Yes** ☐
h)	Confirm that the exit floor button protrudes by more than (5 ± 1) mm. [See BS EN 81-70:2003, Table 2h).]	**Yes** ☐
i)	Confirm that symbols on buttons are on the active part or within 10 mm to 15 mm to the left of the button. [See BS EN 81-70:2003, Table 2i).]	**Yes** ☐
j)	Confirm that symbols are in contrast to the background and are 15 mm to 40 mm high. [See BS EN 81-70:2003, Table 2j).]	**Yes** ☐
k)	Confirm that symbols are in relief by a minimum of 0.8 mm. [See BS EN 81-70:2003, Table 2k).]	**Yes** ☐
l)	Confirm that active parts of buttons are a minimum of 10 mm apart. [See BS EN 81-70:2003, Table 2l).]	**Yes** ☐

Table B.2 **Result of examination and test for hydraulic lifts – Lifts for use by disabled persons – Control devices and key pads (general)** (*continued*)

B.2.1 Control devices *(continued)*

m) Confirm that the distance between groups of buttons (e.g. between alarm/door buttons and call buttons) are a minimum of twice the distance between the active parts of the buttons (not applicable to landing buttons). [See BS EN 81-70:2003, Table 2m).] **Yes** ☐

n) Confirm that minimum height from floor to centreline of any button is 900 mm. [See BS EN 81-70:2003, Table 2n).] **Yes** ☐

o) Confirm that height to centreline of the highest button is not greater than 1 100 mm for the landing, and not greater han 1 200 mm (preferably 1 100 mm) for the car. [See BS EN 81-70:2003, Table 2o).] **Yes** ☐

p) Confirm that the arrangement of landing buttons is vertical. [See BS EN 81-70:2003, Table 2p).] **Yes** ☐

q) Confirm that the arrangement of car buttons is as follows: **Yes** ☐

- 900 mm from the floor to the centre of the lowest button;
- call buttons are placed above the alarm and door open/close buttons;
- for a single horizontal row, floor designations are from left to right;
- for a single vertical row, floor designations are from bottom to top;
- for multiple vertical rows, floor designations are from left to right and then from bottom to top.

[See BS EN 81-70:2003, Tables 2n), 2o) and 2p).]

r) Confirm that the centreline of any landing buttons is more than 500 mm from any corner of adjacent walls. [See BS EN 81-70:2003, Table 2q).] **Yes** ☐

s) Confirm that the centreline of any car buttons is more than 400 mm from any corner of adjacent walls. [See BS EN 81-70:2003, Table 2q).] **Yes** ☐

Table B.2 **Result of examination and test for hydraulic lifts – Lifts for use by disabled persons – Control devices and key pads (general)** (*continued*)

B.2.2 Keypads	**N/A**	☐
a) Confirm that the distance between buttons is 10 mm to 15 mm or 5 mm (to 15 mm for inclined pads). [See BS EN 81-70:2003, **F.2**a).]	**Yes**	☐
b) Confirm that buttons have perceivable movement or audible feedback between 35 dB(A) and 65 dB(A), and a visible signal, to indicate registration. Confirm that the audible signal is repeated each time a button is pressed. [See BS EN 81-70:2003, **F.2**b).]	**Yes**	☐
c) Confirm that floor numbers on buttons are between 15 mm and 40 mm high and are contrasted to the background. [See BS EN 81-70:2003, **F.2**c).]	**Yes**	☐
d) Confirm that the number 5 has a single tactile dot. [See BS EN 81-70:2003, **F.2**d).]	**Yes**	☐
e) Confirm that numbers and symbols are on the active part of the button. [See BS EN 81-70:2003, **F.2**e).]	**Yes**	☐
f) Confirm that keypads in the car have buttons clearly distinguished from other buttons in the car, and that the exit floor button is green and protrudes (5 ± 1) mm above other buttons. [See BS EN 81-70:2003, **F.2**f).]	**Yes**	☐
NOTE *The exit floor button may be marked with a tactile star*		

Table B.3 **Result of examination and test for hydraulic passenger and goods/passenger lifts – Lifts for use by disabled persons – Control devices and signals (car and landing)**

B.3.1 Landing control devices		
a) Confirm that where temporary activation control is provided, the activation device is marked with the international symbol for provision for the disabled (number 0100 from BS ISO 7000:2004). (See BS EN 81-70:2003, **0.4** and **5.4.2.5**.)	**N/A** ☐	**Yes** ☐
b) Confirm that the control device is adjacent to the landing doors for a single lift; that there is one per face for groups where lifts are opposite to each other; and that there is one between two lifts for a maximum of four adjacent lifts. (See BS EN 81-70:2003, **5.4.1.4**.)		**Yes** ☐
B.3.2 Car control devices		
a) Confirm that buttons are identified -2, -1, 0, 1, 2….etc for floors; that the alarm button is yellow with bell shape; that the door re-open button is identified by a <|> symbol and that the door close button is identified by a >|< symbol. (See BS EN 81-70:2003, **5.4.1**.)		**Yes** ☐
b) Confirm that the car controls are located: 1) on the right-hand side when entering for centre opening doors; 2) on the closing side when entering for side opening doors; 3) on both side walls for Type 3 lifts with two entrances. 4) (See BS EN 81-70:2003, **5.4.2.3**.)		**Yes** ☐
c) Confirm that in the case of lifts with a destination control system, if the user has selected "temporary activation" when provided, the door closing is initiated by the door close button; and that if the car is not used it returns to normal operation after 30 s to 60 s.	**N/A** ☐	**Yes** ☐

Table B.3 **Result of examination and test for hydraulic passenger and goods/passenger lifts – Lifts for use by disabled persons – Control devices and signals (car and landing)**

B.3.3 Landing signals

a) Confirm that for push button systems an audible signal is made when doors start opening. (See BS EN 81-70, **5.4.3.1**.) **N/A** ☐ **Yes** ☐

NOTE If door operation exceeds 45 dB(A) this might not be necessary.

b) Confirm for collective control that: **N/A** ☐ **Yes** ☐

1) the direction of travel is indicated by illuminated indicator arrows, ⩾40 mm high, positioned above or near the doors 1.8 to 2.5 m from floor level;

2) the indicators have an angle of view of 140°;

3) on illumination of the arrow in 1) an audible signal is made to indicate the next direction of travel; one sound for up and two for down.

NOTE For a single lift if similar signals in the car are visible and audible from landing then no landing devices are necessary.

B.3.4 Destination control system (where fitted) **N/A** ☐

a) Confirm that:

1) confirmation of the selected floor is by audible and visible signal; visible signal is near the input device [see BS EN 81-70, **5.4.3.4**a)]; **Yes** ☐

2) each lift is identified by 40 mm high letters, contrasted to their surround, above each landing door [see BS EN 81-70, **5.4.3.4**b)]; **Yes** ☐

3) the allocated lift is indicated by a visible and audible signal, and the visible signal is near the input device for the destination call [see BS EN 81-70, **5.4.3.4**c)]; **Yes** ☐

4) the allocated lift is identified to the user by visible and audible signals at the lift [see BS EN 81-70, **5.4.3.4**d)]; **Yes** ☐

5) users are informed visually and audibly that they are entering the allocated car [see BS EN 81-70:2003, **5.4.3.4**e)]. **Yes** ☐

b) Confirm that audible signals are adjustable between 35 dB(A) and 65 dB(A). (See BS EN 81-70, **5.4.3.5**.) **N/A** ☐ **Yes** ☐

Table B.3 **Result of examination and test for hydraulic passenger and goods/passenger lifts – Lifts for use by disabled persons – Control devices and signals (car and landing)**

B.3.5 Car signals

a)	Confirm that there is a position signal in the car operating panel or above it at a height between 1.6 m and 1.8 m above floor level (see Note), and that floor numbers are between 30 mm and 60 mm high. (See BS EN 81-70, **5.4.4.1**.)	**Yes** ☐
	NOTE If a second indicator is provided at high level. the one in or above the car panel may be less than 1.6 m above floor level.	
b)	Confirm that when the car stops at floor level, a voice announces the floor in one of the official local languages. (See BS EN 81-70, **5.4.4.2**.)	**Yes** ☐
c)	Confirm that audible signals are adjustable between 35 dB(A) and 65 dB(A). (See BS EN 81-70, **5.4.4.2**.)	**Yes** ☐
d)	Confirm that there is an emergency alarm device that meets the requirements of BS EN 81-28.	**Yes** ☐

Annex C (normative) Vandalism

Where lifts are provided with features to combat vandalism, when the examination and tests specified in BS EN 81-71 are carried out, the results shall be recorded using the questionnaire given in Tables C.1 to C.9.

NOTE 1 The tester needs to be aware of all negotiations between the owner and the lift installer, in order to enable a correct response to these items. For example, this is particularly important in respect of the choice between category 1 and category 2 installations.

*NOTE 2 Where tests relate to audible signals in the following tables, it is not generally expected that these need to be measured for their correct decibel level, but rather that they are present and working as intended. Where the tester suspects that the noise level is outside its specified range then reading might be necessary and should be taken at 1 m from the device in accordance with BS EN 81-70:2003, Clause **6** and Table 3.*

Table C.1 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Lift well**

C.1.1 Well enclosure				
a) Confirm that the well enclosure is imperforate and meets the requirements for materials and strength given in BS EN 81-71:2005, **5.1.1.1**.			**Yes**	
b) Confirm that partial well enclosures for category 1 lifts are a minimum of 5 m high in accordance with BS EN 81-71:2005, **5.1.1.2**.	**N/A**		**Yes**	
c) Confirm that category 2 lifts are installed in a totally enclosed well in accordance with BS EN 81-72:2005, **5.1.1.3**.	**N/A**		**Yes**	
C.1.2 Inspection and emergency doors and inspection traps				
a) Confirm that inspection and emergency doors and inspection traps cannot be opened with any of the items listed in BS EN 81-71:2005, Table E.1.	**N/A**		**Yes**	
b) Confirm that such doors are of sufficient strength as required by BS EN 81-71:2005, **5.1.2.2**.			**Yes**	
C.1.3 Well ventilation				
Confirm that ventilation openings are in accordance with BS EN 81-71:2005, **5.2.3** and **5.2.4** (i.e. smaller than 250 mm × 250 mm, protected from objects passing through and of similar strength to the well enclosure).	**N/A**		**Yes**	

Table C.2 **Result of examination and test for hydraulic lifts – Machinery spaces, pulley spaces and machinery cabinets**

a)	Confirm that materials used in the construction of any machinery space, pulley space or cabinet outside of the well are in accordance with BS EN 81-71:2005, **5.1.1.1**.			**Yes**	☐
b)	Confirm that where windows have been provided and are accessible to persons, their strength is in accordance with BS EN 81-71:2005, **5.1.1.1**.	**N/A**	☐	**Yes**	☐
c)	Confirm that ventilation openings are in accordance with BS EN 81-71:2005, **5.2.3** and **5.2.4** (i.e. smaller than 250 mm × 250 mm, protected from objects passing through and of similar strength to the well enclosure).			**Yes**	☐
d)	Confirm that doors and trapdoors with their locks meet the strength requirements of BS EN 81-71:2005, **5.1.2.2**.	**N/A**	☐	**Yes**	☐
e)	For category 2 lifts, confirm that an intruder alarm:	**N/A**	☐	**Yes**	☐
	1) operates if a machine room door, pulley room door, inspection door, emergency door, inspection trap or cabinet door is opened, in accordance with BS EN 81-71:2005, **5.2.6**;	**N/A**	☐	**Yes**	☐
	2) operates an audible alarm within 30 s after opening any of the doors in 1), in accordance with BS EN 81-71:2005, **5.2.6**;	**N/A**	☐	**Yes**	☐
	3) is audible at the intrusion point and the main access floor at a volume level of 70 dB(A) to 85 dB(A), in accordance with BS EN 81-71:2005, **5.2.6**a);	**N/A**	☐	**Yes**	☐
	4) stops automatically between 5 min and 15 min from activation, in accordance with BS EN 81-71:2005, **5.2.6**b).	**N/A**	☐	**Yes**	☐

Table C.3 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Landing and car doors**

C.3.1 Landing and car door construction				
a) Confirm that car and landing doors are automatic horizontal sliding power-operated and constructed of materials in accordance with BS EN 81-71:2005, **5.3.1.1**.			**Yes**	
b) Confirm that car and landing door assemblies have been designed to remain operative when tested in accordance with the shock test specified in BS EN 81-71:2005, **5.3.1.2**.			**Yes**	
c) Confirm that doors have been provided with a retaining device capable of withstanding the shock test specified in BS EN 81-71:2005, **5.3.1.3**.			**Yes**	
d) For category 2 lifts, confirm that vision panels have not been used. (See BS EN 81-71:2005, **5.3.1.4**.)	**N/A**		**Yes**	
e) For category 2 lifts, confirm that the construction of the car and landing doors and clearances is in accordance with BS EN 81-71:2005, **5.3.1.5**.	**N/A**		**Yes**	
f) For category 2 lifts, confirm that in addition to the requirements of BS EN 81-2:1998, **7.2.3.2** it is not possible to pass a rod of 10 mm diameter from the landing side of the entrance into the well.	**N/A**		**Yes**	
g) For category 2 lifts, confirm that where door panels are mechanically linked they cannot be disengaged by unauthorized persons within 60 s with the tools listed in BS EN 81-71:2005, Annex E.	**N/A**		**Yes**	
h) For category 2 lifts, confirm that the leading edge profile of the car and landing door is formed as an integral part of the door in accordance with BS EN 81-71:2005, **5.3.1.8**.	**N/A**		**Yes**	
C.3.2 Landing door security system – Category 2 lifts only				
a) Confirm that at any floor where the lift is not present it is not possible to open the landing door with the emergency unlocking key or by using a tool from BS EN 81-71:2005, Annex E, unless the security system has been deactivated in accordance with BS EN 81-71:2005, **5.3.2.1**.	**N/A**		**Yes**	
b) Confirm that a device to manually active and de-activate the system is provided in the machine room, the control cabinet or the emergency and inspection panel in accordance with BS EN 81-71:2005, **5.3.2.2.**	**N/A**		**Yes**	

Table C.3 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Landing and car doors** (*continued*)

C.3.2 Landing door security system – Category 2 lifts only (*continued*)

c) Confirm that the device and the main lift entrance floor have been labelled with a pictogram in accordance with BS EN 81-71:2005, **5.3.2.2**.	**N/A** ☐	**Yes** ☐
d) Confirm that the security system is timer-operated in accordance with BS EN 81-71:2005, **5.3.2.3**.	**N/A** ☐	**Yes** ☐
e) Confirm that in the event of mains power failure, the system remains active for a period of not less than 2 h, but in the event of disconnection of the mains switch, the system is immediately deactivated in accordance with BS EN 81-71:2005, **5.3.2.4**.	**N/A** ☐	**Yes** ☐
f) Where the system is installed on:		
1) fire-fighting lifts conforming to BS EN 81-72:2003, confirm that the system can be deactivated by turning the lift on to "Fire Control" in accordance with BS EN 81-71:2005, **5.3.2.5**;	**N/A** ☐	**Yes** ☐
2) lifts conforming to BS EN 81-73, confirm that the system can be deactivated on receipt of an input signal in accordance with BS EN 81-73:2005, **5.1.1** and BS EN 81-71:2005, **5.3.2.5**.	**N/A** ☐	**Yes** ☐

C.3.3 Door coupling mechanism

For category 2 lifts, confirm that it is not possible to de-couple the car and landing doors within 60 s with the tools listed in BS EN 81-71:2005, Annex E.	**N/A** ☐	**Yes** ☐

C.3.4 Door reversal mechanism

For category 2 lifts, confirm that protective devices for reversal of car and landing doors are inaccessible to unauthorized persons in accordance with BS EN 81-71:2005, **5.3.4**.	**N/A** ☐	**Yes** ☐

C.3.5 Locking of car doors

Confirm that the car doors are provided with a locking device in accordance with BS EN 81-71:2005, **5.3.5**.	**Yes** ☐

C.3.6 Manipulation of door operators and locks

For category 2 lifts, confirm that it is not possible to manipulate the door operator or locks within 60 s with the tools listed in BS EN 81-71:2005, Annex E.	**N/A** ☐	**Yes** ☐

Table C.4 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Car**

C.4.1 Car bodywork, interior and fixings				
a) Confirm that the car walls have a mechanical strength in accordance with BS EN 81-71:2005, **5.3.1.2**.			**Yes**	☐
b) For category 1 lifts, confirm that car ceilings can support a mass of 150 kg at any point a person can suspend themselves, and are fixed such that they cannot be displaced within 60 s with the tools listed in BS EN 81-71:2005, Annex E.	**N/A**	☐	**Yes**	☐
c) For category 2 lifts, confirm that the ceiling is such that no person can suspend themselves in accordance with BS EN 81-71:2005, **5.4.1.3**.	**N/A**	☐	**Yes**	☐
d) Confirm that materials used for the car construction and finishes conform to BS EN 81-71:2005, **5.4.1.4**.			**Yes**	☐
e) Confirm that car bodywork is resistant to being cut through with the tools listed in BS EN 81-71:2005, **5.4.1.5** and Annex E.			**Yes**	☐
f) Confirm that car flooring has been fixed so as not to create a tripping hazard if cut, in accordance with BS EN 81-71:2005, **5.4.1.6**.			**Yes**	☐
g) For category 2 lifts, confirm that any handrail is capable of supporting at its most unfavourable point a load of 2 500 N applied in any direction in accordance with BS EN 81-71:2005, **5.4.1.7**.	**N/A**	☐	**Yes**	☐
h) For category 2 lifts, confirm that any mirror is flush fitted and laminated if made from glass in accordance with BS EN 81-71:2005, **5.4.1.8**.	**N/A**	☐	**Yes**	☐
i) Confirm that fixtures and fittings are removable only with special tools (category 1 lifts) or have fixings not visible to users (category 2 lifts) in accordance with BS EN 81-71:2004, **5.4.1.9**.			**Yes**	☐
C.4.2 Car emergency doors and trapdoors				
For category 2 lifts, confirm that emergency doors or trapdoors have been provided with a security system in accordance with BS EN 81-71:2005, **5.3.2**.	**N/A**	☐	**Yes**	☐

Table C.4 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Car** (*continued*)

C.4.3 Car ventilation	
Confirm that normally accessible ventilation has been guarded against a straight rod being pushed through in accordance with BS EN 81-71:2005, **5.4.3**.	**Yes** ☐
C.4.4 Car lighting	
a) Has permanent car lighting been provided to give 100 lux minimum at control devices and at floor level in accordance with BS EN 81-71:2005, **5.4.4.1**?	**Yes** ☐
b) Confirm that car light fittings:	
1) are flush fitted without visible fixings in accordance with BS EN 81-71:2005, **5.4.2**;	**Yes** ☐
2) remain functional and unbroken when tested in accordance with BS EN 81-71:2005, Annexes B and F.	**Yes** ☐

Table C.5 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Car and landing fixtures**

C.5.1 Car and landing controls	
a) Confirm that control buttons, indicators and other fixtures are water-resistant in accordance with BS EN 60529:1992, IPX3. (See BS EN 81-71:2005, **5.5.1.1**.)	**Yes** ☐
b) Confirm that the button/bezel gaps have been reduced to a minimum to avoid jamming, in accordance with BS EN 81-71:2005, **5.5.1.2**.	**Yes** ☐
c) Confirm that control buttons, indicators and other fixtures are resistant to impact in accordance with BS EN 81-71:2005, Annex B and **5.5.1.3**.	**Yes** ☐
d) Confirm that control buttons, indicators and other fixtures are resistant to being cut with the tools listed in BS EN 81-71:2005, Annex E and **5.5.1.4**.	**Yes** ☐
e) Confirm that control buttons, indicators and other fixtures are resistant to flame in accordance with BS EN 81-71:2005, Annex F and **5.5.1.5**.	**Yes** ☐
C.5.2 Car and landing control stations	
a) Confirm that car operating panels and landing control stations are:	
1) removable only with special tools (category 1 lifts) or have fixings not visible to users (category 2 lifts) in accordance with BS EN 81-71:2005, **5.4.1.9**;	**Yes** ☐
2) made from flame-resistant materials (category 1 lifts) or inflammable (category 2 lifts) in accordance with BS EN 81-71:2005, **5.4.1.4**;	**Yes** ☐
3) resistant to impact in accordance with BS EN 81-71:2005, Annex B;	**Yes** ☐
4) resistant to being cut with the tools listed in BS EN 81-71:2005, Annex E.	**Yes** ☐
b) Confirm that signs and marking accessible to the public are resistant to flame in accordance with BS EN 81-71:2005, Annex F.	**Yes** ☐
C.5.3 Position indicators	
Confirm that a position indicator has been provided at the main floor in accordance with BS EN 81-71:2005, **5.5.3**.	**Yes** ☐

Table C.6 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Alarm sounder**

a) Confirm that unless the car is at a floor with the doors open, operation of the alarm button causes an audible alarm for 60 s within the car at a volume of 70 dB(A) to 85 dB(A) in accordance with BS EN 81-71:2005, **5.6**a).	**Yes**	☐
b) Confirm that the audible alarm ceases if the car doors open during the sounding of the alarm in a).	**Yes**	☐

Table C.7 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Steel work**

For category 2 lifts, confirm that measures to prevent corrosion of the car sling, car and landing doors, landing door locks and car walls and floor have been provided in accordance with BS EN 81-71:2005, **5.7**.	**N/A**	☐	**Yes**	☐

Table C.8 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Signs and markings**

a) Confirm that signs and marking accessible to the public are fixed in a manner that prevents removal and cannot be made illegible within 60 s with the tools listed in BS EN 81-71:2005, Annex E.	**Yes**	☐
b) Confirm that signs and marking accessible to the public are resistant to flame in accordance with BS EN 81-71:2005, Annex F.	**Yes**	☐

Table C.9 **Result of examination and test for hydraulic lifts – Lifts with features to combat vandalism – Documentation**

Confirm that the user manual contains information relating to the special features of the vandal-resistant lift, for both the owner and maintenance company.	**Yes**	☐

Annex D (normative) Fire-fighting lifts

Where lifts are provided with fire-fighting controls, when the examination and tests specified in BS EN 81-72 are carried out, the results shall be recorded using the questionnaire given in Tables D.1 to D.4.

NOTE Within BS EN 81-72 there are certain requirements relating to the building into which the fire-fighting lift is installed (see also BS 5588-5). Since these requirements relate to elements of the building, rather than the lift, it is not generally expected that they will be examined or tested. However, the tester might require confirmation that the items have been considered by the persons responsible for the building construction before the lift can be placed into service.

Examples of such items are :

- *dual entry lifts where the fire-fighting lobbies are not located at the same side as that of the fire service access level;*
- *the fire protected lobby and lift well design and the prevention of ingress of smoke;*
- *that the building design limits the flow of water, use as fire-fighting medium, into the lift well;*
- *that fire-fighting lifts are not used as escape routes;*
- *that a fire-fighting lift gives access at each level to a fire protected lobby.*

Table D.1 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – General**

D.1.1 Characteristics and dimensions				
a) Confirm that the lift serves every floor in the building. (See BS EN 81-72, **5.2.2**.) *NOTE BS 5588-5:2004 requires the lift to serve every floor necessary to fight fires.*			**Yes**	☐
b) Confirm that the car dimensions are in accordance with BS ISO 4190-1 but not less than 1 100 mm × 1 400 mm. (See BS EN 81-72:2003, **5.2.3**.)			**Yes**	☐
c) Confirm that the rated load is ⩾630 kg. (See BS EN 81-72:2003, **5.2.3**.)			**Yes**	☐
d) Confirm that the entrance width is ⩾800 mm. (See BS EN 81-72:2003, **5.2.3**.)			**Yes**	☐
e) Confirm that when the car is dual entry and/or the lift is to be used for evacuation, the car dimensions are at least 1 100 mm × 2 100 mm. (See BS EN 81-72:2003, **5.2.3**.)	**N/A**	☐	**Yes**	
f) Confirm that when the car is dual entry and/or the lift is to be used for evacuation, the rated load is ⩾1 000 kg. (See BS EN 81-72:2003, **5.2.3**.)	**N/A**	☐	**Yes**	
g) Confirm that the time to reach the furthest floor from access level is ⩽60 s. (See BS EN 81-72:2003, **5.2.4**.)			**Yes**	☐
D.1.2 Lift well				
a) Confirm that all electrical equipment within 1 m of any wall containing landing doors is protected against dripping and splashing water. (See BS EN 81-72:2003, **5.3.1**.)			**Yes**	☐
b) Confirm that all electrical equipment less than 1.0 m above the pit floor is protected in accordance with BS EN 60529:1992, IP67. (See BS EN 81-72:2003, **5.3.2**.)			**Yes**	☐
c) Confirm that the socket outlet and lowest lamp in the pit is at least 0.5 m above the highest permissible water level. (See BS EN 81-72:2003, **5.3.2**.)			**Yes**	☐
d) Confirm that equipment in any machinery spaces located outside the well are protected from malfunction caused by water. (See BS EN 81-72:2003, **5.3.3**.)			**Yes**	☐
e) Confirm that means exist to prevent water in the pit reaching the height of the fully compressed car buffer. (See BS EN 81-72:2003, **5.3.4**.)			**Yes**	☐
f) Confirm that means exist to prevent the water level in the pit from reaching equipment which would create a malfunction of the lift. (See BS EN 81-72:2005, **5.3.5**.)			**Yes**	☐

Table D.2 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Means of rescue**

D.2.1 Rescue of trapped fire-fighters

a) Confirm that an emergency trapdoor in the car roof is provided with dimensions of at least 0.5 m × 0.7 m (0.4 m × 0.5 m for a rated load of 630 kg). (See BS EN 81-72:2005, **5.4.1**.) **Yes** ☐

b) Confirm that no tools are required to remove any suspended ceiling to give access to the lift car from the car roof. (See BS EN 81-72:2005, **5.4.2**.) **Yes** ☐

D.2.2 Rescue from outside the lift car (responsibility of local authorities) (see BS EN 81-72:2005, **5.4.3**)

Confirm that fixed ladders conforming to BS EN 81-2 are positioned within 0.75 m of the landing sill. **N/A** ☐ **Yes** ☐

*NOTE 1 BS EN 81-72:2003, **5.4.3** describes other means of rescue.*

NOTE 2 Some local authorities do not permit the use of such ladders.

D.2.3 Self-rescue from inside the lift car (see BS EN 81-72:2005, **5.4.4**)

a) Confirm that the maximum step rise to reach the trap door is 0.4 m and the distance from each stepping point to a vertical wall is $\geqslant$0.1 m. **N/A** ☐ **Yes** ☐

b) Confirm that each step point is capable of supporting a load of 1 200 N. **Yes** ☐

c) Confirm that the ladder and trap door dimensions and position are such that a fire-fighter can pass through. **Yes** ☐

d) Confirm that a diagram or symbol at each landing indicates how the landing door can be unlocked. **Yes** ☐

D.2.4 Car roof ladder (see BS EN 81-72:2005, **5.4.6**)

Confirm that the ladder is fixed to the car, that it does not introduce a tripping hazard when stored, that a safety switch monitors removal of the ladder preventing movement of the lift car, and that the ladder is of sufficient length to reach the landing above when the car is level with a landing. **N/A** ☐ **Yes** ☐

Table D.3 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Heat and smoke protection**

D.3.1 Lobby			
a) Confirm that each landing entrance has a fire-protected lobby. (See BS EN 81-72:2005, **5.1.1**.)		**Yes**	☐
b) Confirm that electrical equipment in the lobby can continue to function for 2 h at a temperature range of 0 °C to 65 °C, and equipment not in the lobby can operate at a temperature range between 0 °C and 40 °C. [See BS EN 81-72:2005, **5.1.2**a) and **5.1.2**b).]		**Yes**	☐
c) Confirm that the lift controls will function correctly in a smoke-filled lift well and machine rooms for a minimum of 2 h. [See BS EN 81-72:2005, **5.1.2**c).]		**Yes**	☐
d) Confirm that where a dual entry lift car is used, any landing entrance not intended for fire-fighters' use will not exceed 65 °C. (See BS EN 81-72:2005, **5.1.4**.)	**N/A** ☐	**Yes**	☐
e) Confirm that the source of the secondary power supply is located in a fire-protected area. (See BS EN 81-72:2005, **5.1.5**.)		**Yes**	☐
f) Confirm that the primary and secondary power supplies are separated from each other and from other power supplies. (See BS EN 81-72:2005, **5.1.6**.)		**Yes**	☐
D.3.2 Car and landing doors			
Confirm that horizontal car and landing doors are automatic and coupled. (See BS EN 81-72:2005, **5.6**.)		**Yes**	☐
D.3.3 Lift machine			
a) Confirm that any compartment containing lift equipment has equivalent protection to the lift well. (See BS EN 81-72:2005, **5.7.1**.)		**Yes**	☐
b) Confirm that any connection of cables and hydraulic pipes between fire compartments has equivalent protection to the fire compartments. (See BS EN 81-72:2005, **5.7.2**.)		**Yes**	☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems**

D.4.1 Control system

a)	Confirm that the fire-fighting lift switch is within 2 m of the landing entrance, between 1.8 m and 2.1 m above landing level and is identified by suitable pictogram. (See BS EN 81-72:2005, **5.8.1**.)	**Yes** ☐
b)	Confirm that operation of the switch is by an emergency unlocking triangle and that the switch position marked "1" for fire-fighting service and "0" for normal operation. (See BS EN 81-72:2005, **5.8.2**.)	**Yes** ☐
c)	Confirm that any additional external fire control or input only allows the fire-fighting lift to return to fire service access level and stay with doors open, provided that the fire-fighting lift switch is still operated in position "1". (See BS EN 81-72:2005, **5.8.2**.)	**Yes** ☐
d)	Confirm that when the fire-fighting switch is operated, all lift safety devices remain operational, with the exception of door reversal devices which are allowed to be deactivated. (See BS EN 81-72:2005, **5.8.3**.)	**Yes** ☐
e)	Confirm that the fire-fighting lift switch does not override inspection control, emergency stop switches or emergency electrical operation. (See BS EN 81-72:2005, **5.8.4**.)	**Yes** ☐
f)	Confirm that malfunction of any electrical control system outside the lift well does not cause malfunction of the fire-fighting lift. (See BS EN 81-72:2005, **5.8.5**.) *NOTE This includes faults in common group control systems between lifts.*	**Yes** ☐
g)	Confirm that an audible alarm sounds if the door dwell time exceeds 2 m, after which time the doors will close at reduced power. (See BS EN 81-72:2005, **5.8.6**.)	**Yes** ☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems** (*continued*)

D.4.2 Phase 1: Priority recall

Operate the fire-fighting switch and confirm that the following conditions are all met.

a)	All landing and car call buttons inoperative and existing calls are cancelled. [See BS EN 81-72:2005, **5.8.7**a).]	**Yes** ☐
b)	Door open and emergency alarm buttons remain operative. [See BS EN 81-72:2005, **5.8.7**b).]	**Yes** ☐
c)	Door reversal devices, which could be affected by heat or smoke, are inoperative. [See BS EN 81-72:2005, **5.8.7**c).]	**Yes** ☐
d)	The lift functions independently of all other lifts in a group. [See BS EN 81-72:2005, **5.8.7**d).]	**Yes** ☐
e)	The lift remains at fire service access level with doors open. [See BS EN 81-72:2005, **5.8.7**e).]	**Yes** ☐
f)	The communication device described in BS EN 81-72:2003, **5.12** remains operational. [See BS EN 81-72:2005, **5.8.7**f).]	**Yes** ☐
g)	If the lift is on inspection control, an audible signal sounds until inspection control is returned to normal. [See BS EN 81-72:2005, **5.8.7**g).]	**Yes** ☐
h)	If the fire-fighting lift is travelling away from the fire service access level, it stops at the nearest possible floor, the doors remain closed, then it returns to fire service access floor. [See BS EN 81-72:2005, **5.8.7**h).]	**Yes** ☐
i)	Well and machine room lighting is automatically illuminated when fire-fighting service initiated. [See BS EN 81-72:2005, **5.8.7**i).]	**Yes** ☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems** (*continued*)

D.4.3 Phase 2: Use of lift under fire-fighters' control

Operate the car control devices and confirm that the following conditions are all met.

a)	Where Phase 1 has been initiated by an external signal, the lift will not operate until the fire-fighting lift switch has been operated. [See BS EN 81-72:2005, **5.8.8**a).]		**Yes** ☐
b)	Only one car call can be selected simultaneously. [See BS EN 81-72:2005, **5.8.8**b).]		**Yes** ☐
c)	It is possible to register another call in the car whilst the lift is in motion; this cancels the previous call and the car travels to the new registered floor as quickly as possible. [See BS EN 81-72:2005, **5.8.8**c).]		**Yes** ☐
d)	Registration of the car call causes the lift to travel to the selected floor and remain there with doors closed. [See BS EN 81-72:2005, **5.8.8**d).]		**Yes** ☐
e)	When the car is stationary at a landing, pressure on the door open button causes the doors to open, and release of pressure causes the doors to re-close. When fully open, doors remain open until the next call is selected. [See BS EN 81-72:2005, **5.8.8**e).]		**Yes** ☐
f)	Car door reversal devices and door open buttons remain operative except those that could be affected by heat or smoke. [See BS EN 81-72:2005, **5.8.8**f).]		**Yes** ☐
g)	If the fire-fighting lift service switch is operated from "1" to "0" for 5 s then returned to "1", the lift returns to the fire access level. [See BS EN 81-72:2005, **5.8.8**g).]		**Yes** ☐
h)	Where an additional fire-fighting car key switch is fitted, it is marked "1" and "0", has a pictogram and the key is removable in the "0" position only. If the fire service access level switch is set for fire-fighting mode, the car key switch is set to "1" to allow car movement. If the car key switch is set in the "0" position, movement of the car is prevented and the doors remain open if the lift is not at the fire service access level. [See BS EN 81-72:2005, **5.8.8**h).]	**N/A** ☐	**Yes** ☐
i)	Any registered car call is displayed visually on the car control panel. [See BS EN 81-72:2005, **5.8.8**i).]		**Yes** ☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems** (*continued*)

D.4.3 Phase 2: Use of lift under fire-fighters' control (*continued*)

j)	The position of the car is visually displayed at fire service access level and in the car, under both normal and emergency power supply conditions. [See BS EN 81-72:2005, **5.8.7**j).]	**Yes** ☐
k)	The lift will not move until a call is registered in the car. [See BS EN 81-72:2005, **5.8.7**k).]	**Yes** ☐
l)	Fire service communication remains operative during Phase 2. [See BS EN 81-72:2005, **5.8.7**l).]	**Yes** ☐
m)	The lift returns to fire service access level when fire-fighting switches are returned to the normal position, before going back into normal service. [See BS EN 81-72:2005, **5.8.8**m).]	**Yes** ☐

D.4.4 Dual entry lift car **N/A** ☐

When the protected fire lobbies are all the same side as the fire service access level, confirm that the following conditions are all met.

a)	Two control panels are provided, one at the front and one at the rear of the lift car. The control panel at the side of the lift car which opens on to the protected lobby is marked with the pictogram for fire-fighting use. [See BS EN 81-72:2003, **5.8.9**a) and Annex F.]	**Yes** ☐
b)	The normal car control panel is inoperative when Phase 1 is selected, except for door open and alarm buttons. [See BS EN 81-72:2005, **5.8.9**b).]	**Yes** ☐
c)	The fire-fighting control panel is operative from the start of Phase 2. [See BS EN 81-72:2005, **5.8.9**c).]	**Yes** ☐
d)	Landing doors that are not intended for fire-fighters' use remain closed. [See BS EN 81-72:2005, **5.8.9**d).]	**Yes** ☐
e)	Landing doors to fire-protected lobbies are brought into operation. [See BS EN 81-72:2005, **5.8.9**e).]	**Yes** ☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems** (*continued*)

D.4.5 Power supplies		
a) Confirm that primary and secondary supplies are fire-protected to the same level as the lift well equipment. (See BS EN 81-72:2005, **5.9.1**.)	**Yes**	☐
b) Confirm that secondary supplies are adequate to run the lift at rated speed and reach the furthest floor from the fire service access level within 60 s. (See BS EN 81-72:2005, **5.9.2**.)	**Yes**	☐
c) Confirm that the lift will not perform a correction run whilst on Phase 2, and that the power supply is re-established after a power failure. [See BS EN 81-72:2005, **5.10**a).]	**Yes**	☐
d) Confirm that when the power supply is re-established the lift is available for service, and that if the lift needs to move to establish its position, it moves no more than two floors towards the fire service access level. [See BS EN 81-72:2005, **5.10**a).]	**Yes**	☐
D.4.6 Car and landing controls		
a) Confirm that on Phase 2 control, operation of the fire-fighting lift is by a full set of push buttons in the lift car. Controls and indicators to be protected to at least IPX3. (See BS EN 81-72:2005, **5.11.2** and **5.11.3**.)	**Yes**	☐
b) Confirm that the car button for the fire service access level is suitably marked with a pictogram (Annex F) located either on or adjacent to the button. (See BS EN 81-72:2005, **5.11.4**.)	**Yes**	☐
D.4.7 Fire service communication system		
a) Confirm that the fire-fighting lift has an intercom system or similar device for interactive two-way speech communication whilst the lift is in Phases 1 and 2, between: 1) the fire-fighting lift car; and 2) the fire service access level; and 3) the fire-fighting machine room, or in the case of machine-room-less lifts, at the landing control panel. (See BS EN 81-72:2005, **5.12.1**.)	**Yes**	☐

Table D.4 **Result of examination and test for hydraulic lifts – Lifts with fire-fighting controls – Control and communication systems** (*continued*)

D.4.7 Fire service communication system (*continued*)		
b) Confirm that where a machine room is provided, the microphone is only active when a control button is pressed on its unit. [See BS EN 81-72:2005, **5.12.1**b).]	**N/A** ☐	**Yes** ☐
c) Confirm that the communication system within the car and at the fire service access level is hands-free and not a telephone handset. (See BS EN 81-72:2005, **5.12.2**.)		**Yes** ☐
d) Confirm that the wiring for the communication system is within the lift well. (See BS EN 81-72:2005, **5.12.3**.)		**Yes** ☐
D.4.8 Instructions		
Confirm that the instruction manual gives the necessary information about the fire-fighting lift. (See BS EN 81-72:2003, Clause **7**.)		**Yes** ☐

Annex E (normative) Behaviour of lifts in the event of fire

Where lifts are provided with recall systems, when the examination and tests specified in BS EN 81-73 are carried out, the results shall be recorded using the questionnaire given in Tables E.1 to E.3.

Table E.1 **Result of examination and test for hydraulic lifts – Lifts with recall systems – General characteristics**

E.1.1 Input signals		
a) Is there an electrical recall signal provided by either a fire alarm system or a manual recall device?		**Yes** ☐
b) If the recall device is manual, is it:	**N/A** ☐	**Yes** ☐
1) bi-stable in operation? [See BS EN 81-73:2005, **5.1.1**a).]	**N/A** ☐	**Yes** ☐
2) clearly marked for position and purpose? [See BS EN 81-73:2005, **5.1.1**b) and c).]	**N/A** ☐	**Yes** ☐
3) located at the main designated floor or in the building management centre? [See BS EN 81-73:2005, **5.1.1**d).]	**N/A** ☐	**Yes** ☐
4) protected from misuse when accessible to all? [See BS EN 81-73:2005, **5.1.1**e).]	**N/A** ☐	**Yes** ☐
E.1.2 Stopped position		
Confirm that when stopped due to fault conditions, on inspection control or under emergency electrical control the recall signal does not cause the lift to move. (See BS EN 81-73:2005, **5.1.2**.)		**Yes** ☐
E.1.3 Prohibition sign		
Confirm that a sign conforming to ISO 3864-1, warning against using the lift in the event of fire, has been provided at all landings. (See BS EN 81-73:2005, **5.1.3**.)		**Yes** ☐

Table E.2 **Result of examination and test for hydraulic lifts – Lifts with recall systems – Behaviour**

a)	When a recall signal is received, confirm that the lift reacts as follows.			
	1) All landing and car controls including the door re-open button become inoperative. [See BS EN 81-73:2005, **5.3.1**a).]		**Yes**	☐
	2) All existing registered calls are cancelled. [See BS EN 81-73:2005, **5.3.1**b).]		**Yes**	☐
	3) If the lift has power-operated doors and is parked at a landing, the doors are closed and the lift returns to the designated floor. [See BS EN 81-73:2005, **5.3.1**c)1).]	**N/A** ☐	**Yes**	☐
	4) If the lift has manually operated doors and is parked at a landing with the doors open, it remains at the floor until the doors are closed and then returns to the designated floor. [See BS EN 81-73:2005, **5.3.1**c)2).]	**N/A** ☐	**Yes**	☐
	5) If the lift is travelling away from the designated floor, it makes a normal stop and then returns without opening the doors until arrival at the designated floor. [See BS EN 81-73:2005, **5.3.1**c)3).]		**Yes**	☐
	6) If the lift is travelling towards the designated floor, it continues without stopping until its arrival at the designated floor. [See BS EN 81-73:2005, **5.3.1**c)4).]		**Yes**	☐
	7) The lift remains stationary if any safety device has been operated. [See BS EN 81-73:2005, **5.3.1**c)5).]		**Yes**	☐
b)	Confirm that any door reversal devices that could be affected by smoke or heat are made inoperative by the recall signal. (See BS EN 81-73:2005, **5.3.2**.)	**N/A** ☐	**Yes**	☐
c)	Confirm that the automatic dispatch of the lift to the lowest landing level as required by BS EN 81-2:1998, **14.2.1.5**b) has been rendered inoperative. (See BS EN 81-73:2005, **5.3.3**.)		**Yes**	☐
d)	Confirm that a fault on a lift which is part of a group does not prevent recall of the other lifts in the group. (See BS EN 81-73:2005, **5.3.4**.)	**N/A** ☐	**Yes**	☐
e)	Confirm that on arrival at the designated floor, lifts with power-operated doors park with the doors open and are removed from service. (See BS EN 81-73:2005, **5.3.5**.)	**N/A** ☐	**Yes**	☐

Table E.2 **Result of examination and test for hydraulic lifts – Lifts with recall systems – Behaviour** (*continued*)

f)	Confirm that on arrival at the designated floor, lifts with manually operated doors park with the doors unlocked and are removed from service. (See BS EN 81-73:2005, **5.3.6**.)	**N/A**	☐	**Yes**	☐
g)	Confirm that the lift returns to normal service either by an automatic signal from the fire alarm system or the reset of the manual recall device. (See BS EN 81-73:2005, **5.3.7**.)			**Yes**	☐
h)	Confirm that a "No Entry" sign in accordance with BS EN 81-73:2005, **5.3.8** is displayed at the designated floor whist the lift is out of service. *NOTE The sign should have a diameter not less than 25 mm if it is in the landing controls, otherwise it should have a diameter not less than 50 mm.*			**Yes**	☐
i)	Where multiple designated floors are required, confirm that an additional electrical signal will recall the lift to an alternative floor. (See BS EN 81-73:2005, **5.4**.)	**N/A**	☐	**Yes**	☐

Table E.3 **Result of examination and test for hydraulic lifts – Lifts with recall systems – Documentation**

Confirm that documentation has been provided in the user manual relative to the recall controls and the need for regular tests to be carried out.	**Yes**	☐

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Other publications

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