BRITISH STANDARD

BS 5655-10.2.1: 1995

Lifts and service lifts —

Part 10: Specification for the testing and examination of lifts and service lifts —

Section 10.2 Hydraulic lifts —

Subsection 10.2.1 Commissioning tests for new lifts

UDC 621.876.1-522:620.16

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MHE/4, Lifts, hoists and escalators, upon which the following bodies were represented:

Associated Offices Technical Committee
Association of District Councils
British Broadcasting Corporation
British Lift Association
British Railways Board
British Retail Consortium
British Telecommunications plc
Chartered Institution of Building Services Engineers
Department of the Environment
Department of Trade and Industry (Standards Policy Unit)
Electrical, Electronic, Telecommunications and Plumbing Union
Engineer Surveyors Section of the MSF
Health and Safety Executive
Independent Engineering Insurers Committee
Institution of Electrical Engineers
Institution of Environmental Health Officers
Institution of Incorporated Executive Engineers
Institution of Mechanical Engineers
Institution of Plant Engineers
Lloyds Register of Shipping
London Underground Ltd.
National Association of Lift Makers
Post Office
Royal Association for Disability and Rehabilitation

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Contents

Foreword

This Subsection of BS 5655-10, prepared under the direction of the Engineering Sector Board, revises and replaces those elements of BS 5655-10:1986 which cover the testing and examination, at the time of installation, of new hydraulic lifts covered by BS 5655-2:1988.

It is the first Subsection of the second Section of the tenth Part of this British Standard relating to lifts and service lifts. The complete standard consists of the following Parts.

— *Part 1: Safety rules for the construction and installation of electric lifts* (implementing EN 81-1), together with PD 6500 *Explanatory supplement to BS 5655-1;*

— *Part 2: Safety rules for the construction and installation of hydraulic lifts* (implementing EN 81-2);

— *Part 3: Specification for electric service lifts;*

— *Part 4*[1)]*:*

— *Part 5: Specification for dimensions of standard lift arrangements;*

— *Part 6: Code of practice for selection and installation;*

— *Part 7: Specification for manual control devices, indicators and additional fittings;*

— *Part 8: Specification for eyebolts for lift suspension;*

— *Part 9: Specification for guide rails;*

— *Part 10:* (See below);

— *Part 11: Recommendations for the installation of new, and the modernization of, electric lifts in existing buildings;*

— *Part 12: Recommendations for the installation of new, and the modernization of, hydraulic lifts in existing buildings;*

— *Part 13*[2)]*: Code of practice. Recommendations for vandal resistant lifts;*

— *Part 14*[2)]*: Specification for hand-powered service lifts.*

Further Parts are anticipated.

This Subsection is applicable to new hydraulic lifts manufactured and installed in accordance with BS 5655-2:1988.

The complete Part 10 consists of the following Sections and Subsections.

— *Section 10.1: Electric lifts;*

  — *Subsection 10.1.1: Commissioning tests for new lifts*;

  — *Subsection 10.1.2*[2)]*: Commissioning tests after modernization*;

  — *Subsection 10.1.3*[2)]*: Periodic examination;*

— *Section 10.2: Hydraulic lifts*;

  — *Subsection 10.2.1: Commissioning tests for new lifts;*

  — *Subsection 10.2.2*[2)]*: Commissioning tests after modernization;*

  — *Subsection 10.2.3*[2)]*: Periodic examination.*

Further Sections are anticipated.

BS 5655-10 has been revised to take account of experience gained in the field since its initial publication in 1986. Additionally, it has been restructured in the form of separate Sections and Subsections to differentiate clearly between lift types, and between tests and examinations performed at the time of installation, and examinations which take place over the life of a lift installation.

[1)] Reserved for future publication.
[2)] In preparation.

As successive Subsections of Sections 10.1 and 10.2 are published, they will revise and replace the corresponding sections of BS 5655-10:1986. On publication of the complete Sections 10.1 and 10.2, BS 5655-10:1986 will be withdrawn.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 22, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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1 Scope

This Subsection of BS 5655 specifies requirements for the testing and examination of new hydraulic lifts covered by BS 5655-2:1988, before the lift is put into service.

NOTE 1 Italic type is used in Table 1 where there is a reference to a requirement of BS 5655-2:1988.

This Subsection does not specify such requirements for hydraulic lifts after modernization, or for the periodic examination of hydraulic lifts.

This Subsection includes a proforma for a certificate of test and examination (Table 1) which covers construction, certain aspects of performance, and contract data. A requirement to provide test certificates relating to certain components of the equipment is also specified in this Subsection.

NOTE 2 Guidance on testing and inspection is given in section 2 of BS 5655-6.

2 References

2.1 Normative references

This Subsection of BS 5655-10 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Subsection of BS 5655-10 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This Subsection of BS 5655-10 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Subsection of BS 5655-10, the definitions given in clause **3** of BS 5655-2:1988 apply.

4 Test and examination

NOTE All test weights, test equipment, instruments and personnel needed to complete the testing and examination after installation should be provided by the lift contractor. A power supply at the appropriate voltage and frequency, for test and adjustment purposes, should be provided by the purchaser.

4.1 The tests, and a thorough inspection of the entire equipment, necessary to complete a test and examination certificate following the form and content of Table 1, shall be performed for every installation before it is put into normal service, i.e. at the time of commissioning. The certificate shall be completed in all respects. The installation shall also be tested in accordance with clauses **5** and **6**.

4.2 Copies of test certificates relating to particular components shall be available prior to, or during, commissioning tests. These test certificates shall relate to individual or type tests carried out by the component manufacturer, the lift contractor, or an independent body.

4.3 Copies of completed certificates appropriate to the type of equipment, as specified in **4.1** shall be available for inspection in accordance with **16.2.2** of BS 5655-2:1988.

5 High-voltage test (at manufacturer's works)

The dielectric of electrical apparatus (excluding motors, generators, transformers, electronic apparatus and instruments, which should be tested in accordance with the appropriate British Standard), shall withstand a test voltage of 10 times the working voltage, with a maximum of 2 000 V, when applied as follows:

a) between the live parts and the case or the frame with all circuits completed;

b) between main terminals or equivalent parts with all circuits open;

c) between any live parts of independent circuits.

The test voltage shall be alternating, of approximately sine wave form, with a frequency of approximately 50 Hz, and shall be applied for 1 min.

NOTE As it is impractical to apply the foregoing tests b) and c) on controllers and similar apparatus after controller wiring has been completed, these tests should be made at convenient stages of manufacture. A test certificate to this effect issued by the manufacturer is acceptable.

6 Electrical tests (after installation)

Electrical installations, excluding electronic equipment, shall be subjected to tests, by instruments, as follows.

a) Apply a d.c. test voltage which is not less than twice the r.m.s. value of the a.c. supply voltage, or not greater than 500 V d.c. for low-voltage circuits, to prove that the insulation resistance to earth is not less than 0.5 MΩ.

NOTE If dampness in a new building prevents a reading of 0.5 MΩ from being obtained, an insulation resistance of 0.25 MΩ is provisionally acceptable provided a retest figure of 0.5 MΩ is obtained when conditions in the building improve.

b) Determine that the earthing of all conduit, trunking, switchcases, and similar metal work is continuous and does not exceed 0.5 Ω impedance.

NOTE A lift installation is considered to be a self-contained piece of equipment and as such is not required to conform in all respects to BS 7671:1992 (formerly the IEE Regulations for Electrical Installations), in particular with regard to the earthing of all apparatus, e.g. guides, door panels.

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

Notes for the completion of this certificate

1. The references quoted below in association with a Part number refer to clauses, figures, tables or annexes of the stated Part of BS 5655. Other clause numbers relate to this Subsection of BS 5655.
2. Statements and replies to all relevant questions should be entered in the appropriate boxes. Where multiple-choice questions are posed, only one of the alternative boxes should be ticked.
3. Boxes marked with an asterisk (*) should be completed by the vendor's design office.
4. Italic type is used where reference is made to a requirement of BS 5655 : Part 2 : 1988.

1 Description of installation

Location: *

Vendor: *

Length of travel: m *

Vendor's identification number: *

Number of levels served:

Total: *

Front: *

Rear: *

Side: *

Purchaser's identification number: *

Power supply:

Permanent:

Temporary:

Is the lift designed to either **8.2.1** *table* 1.1 *of Part 2*

Yes * No *

or

8.2.2 *table* 1.1.A *of Part 2?*

Yes * No *

	Specified		Actual at time of test
Voltage:	V	*	V
Phase:		*	
Frequency:	Hz	*	Hz
Wire (3 or 4?):		*	
Fuse rating:	A	*	A
Fuse type:		*	

Are the above entries acceptable?

Yes No

Rated load: kg * persons

Rated speed up: m/s *

Rated speed down: m/s *

Machine room location
(tick relevant box)

	Adjacent		Remote	
Above well		*		*
Below well		*		*
At side		*		*

Approximate distance from well: m

N/A

	Specified		Actual
Main switch rating:	A	*	A
Is the switch fused?	Yes * No *		Yes No
Is it lockable off?	Yes * No *		Yes No
Number of poles		*	

NOTE. A four-pole switch is necessary if emergency lowering is fitted.

Machine room temperature at start of dynamic tests: °C

When electrical anti-creep is fitted, is there a notice as specified in **15.4.6** *of Part 2?* Yes No

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

Reeving ratio: ☐ * N/A ☐ *

Type of ram:		Single stage ☐ *	Telescopic ☐ *
Number of stages:			☐ *
Diameter:	d_1	☐ *	☐ *
	d_2	N/A	☐ *
	d_3	N/A	☐ *

2 Static examination (mechanical)

2.1 Devices to prevent free fall, descent with excessive speed and creeping

NOTE. Combinations are as in table 2 of Part 2.

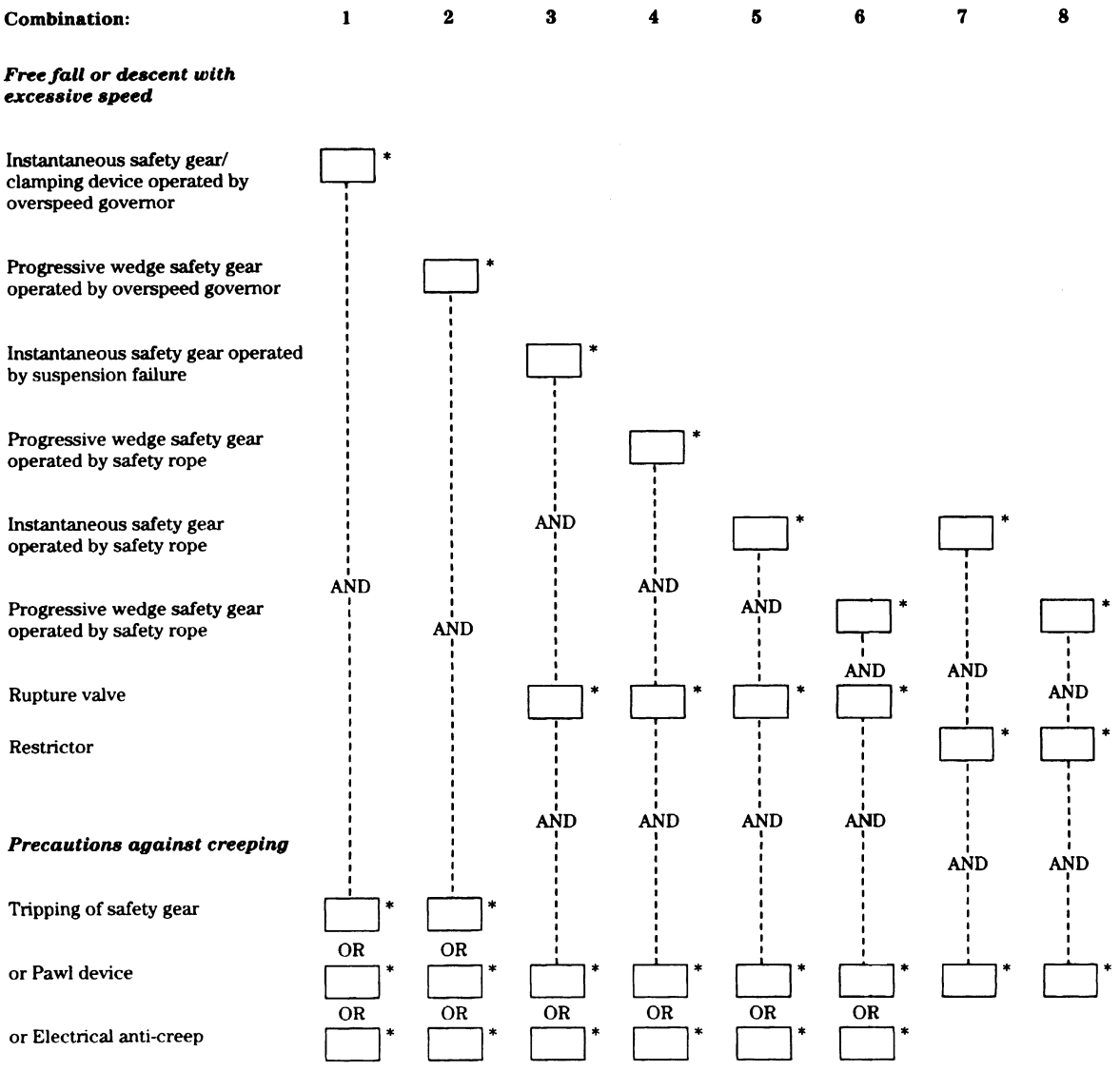
2.1.1 ***Direct acting lifts***

Combination:	**1**	**2**	**3**	**4**
Free fall or descent with excessive speed				
Instantaneous safety gear/ clamping device operated by overspeed governor	☐ *			
Progressive safety gear/ clamping device operated by overspeed governor		☐ *		
Rupture valve			☐ *	
Restrictor				☐ *
Precautions against creeping	AND	AND	AND	AND
Tripping of safety gear	☐ *	☐ *	☐ *	☐ *
	OR	OR	OR	OR
or Clamping device	☐ *	☐ *	☐ *	☐ *
	OR	OR	OR	OR
or Pawl device	☐ *	☐ *	☐ *	☐ *
	OR	OR	OR	OR
or Electrical anti-creep	☐ *	☐ *	☐ *	

Indicate which combination is to be tested, by ticking all relevant boxes.

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

2.1.2 ***Indirect acting lifts***



Indicate which combination is to be tested, by ticking all relevant boxes.

2.2 Hydraulic pipework

Is the flexible hose marked with the name of the manufacturer, the test pressure, and date of test? N/A ☐ Yes ☐ No ☐

What is the marked test pressure? _____ bar

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

2.3 Suspension

a) Suspension ropes:

	Specified	Actual
1) Number:	*	
2) Nominal diameter:	mm *	mm
3) Lay and construction:	*	*
4) Is test certificate in order and available?	Yes * No *	
5) Is rope data plate fitted to crosshead?	Yes No	

b) Rope anchorages:

	Car	Counterweight
1) Type		
2) Number of rope grips (if any):		
3) Confirm that rope grips (if any) are fitted correctly:	Yes	Yes
4) State BS number and type of socketed anchorages used (if any):		
5) Describe any other type of anchorage used:		

	Specified	Actual
6) *Are the anchorages in accordance with* **9.2.3** *of Part 2?*	Yes * No *	Yes No
7) Are the anchorages prevented from rotating through 180°?	Yes * No *	Yes No
8) *Do the ropes conform to* **9.3** *of Part 2, ensuring distribution of load between the ropes?*	Yes * No *	Yes No

c) Suspension chains: N/A

	Specified	Actual
1) Number:	*	
2) Pitch:	*	
3) Type and construction:	*	
4) Is the chain test certificate available and in order?	Yes * No *	
5) *Are the anchorages in accordance with* **9.2.6** *of Part 2?*	Yes * No *	
6) *Do the chains conform to* **9.3** *of Part 2, ensuring distribution of load between chains?*	Specified: Yes * No *	Actual: Yes No

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

d)	Eyebolts:	Specified	Actual
	If eyebolts are used, do they conform to Part 8?	Yes ☐ * No ☐ *	Yes ☐ No ☐
2.4	**Safety gear**		
a)	*Has the safety gear been tested in accordance with* **F.3** *of Part 2 and certified in accordance with* **F.3.5** *of Part 2?*		Yes ☐ * No ☐ *
b)	*If YES, is the data plate fitted in accordance with* **15.14** *of Part 2?*		Yes ☐ No ☐
c)	*Is the safety gear sealed (see* **9.8.6.4** *of Part 2)?*		Yes ☐ No ☐
2.5	**Overspeed governor**	N/A ☐ *	
a)	*Confirm that the governor has been tested in accordance with* **F.4** *of Part 2 and certified in accordance with* **F.4.3** *of Part 2:*		Yes ☐ *
b)	Specify overspeed governor type:	☐ *	
c)	State type of overspeed governor fitted:	☐	
d)	*Is the data plate fitted and in accordance with* **15.6** *of Part 2?*		Yes ☐ No ☐
e)	Confirm that the governor is sealed:		Yes ☐
2.6	**Overspeed governor rope or safety rope**	N/A ☐ *	
		Specified	Actual
a)	State nominal diameter:	☐ mm *	☐ mm
2.7	**Compatibility of safety gear, overspeed governor, overspeed governor rope and tension pulley**	N/A ☐ *	
	Confirm that the safety gear, overspeed governor, overspeed governor rope and tension pulley operate as a compatible system:	Specified Yes ☐ *	Actual Yes ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

2.8 Car

a) *Confirm that the available floor area, related to rated load and maximum number of passengers, conforms to* **8.2** *of Part 2:* Yes ☐ *

		Specified	Actual
b)	State the internal width, i.e. wall to wall (without finishes):	mm *	mm
c)	State the internal depth, i.e. front return to rear wall or front return to rear return (without finishes):	mm *	mm

d) *Confirm that the car conforms to table* 1.1 *of Part 2:* N/A ☐ * Yes ☐ *

e) *Confirm that the car conforms to table* 1.1.A *of Part 2:* N/A ☐ * Yes ☐ *

2.9 Energy accumulation buffers (spring type)

N/A ☐ *

a) *Confirm that the buffers conform to* **10.4.1** *of Part 2:* Yes ☐ *

		Specified	Actual
b)	State number fitted:	*	

c) Confirm that the buffers are correctly identified: Yes ☐

2.10 Energy accumulation buffers (polyurethane type)

N/A ☐ *

a) *Confirm that the buffers conform to* **10.4.1** *of Part 2:* Yes ☐ *

		Specified	Actual
b)	State size selected:	*	
c)	State number fitted:	*	

d) Confirm that the buffers are correctly identified: Yes ☐

2.11 Energy dissipation buffers (e.g. oil)

N/A ☐ *

a) *Confirm that the buffers have been tested in accordance with* **F.5** *of Part 2 and certified in accordance with* **F.5.4** *of Part 2:* Yes ☐ *

b) *Is the data plate in accordance with* **15.8** *of Part 2?* Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

c) *If NO are they suitable for submission to the test described in* **11.3** *of this table?* Yes ☐ No ☐

d) Are they correctly filled and not leaking? Yes ☐ No ☐

e) *Is the stroke of each buffer in accordance with* **10.4.3** *of Part 2?* Yes ☐ No ☐

f) State number fitted: Specified ☐ * Actual ☐

2.12 Hydraulic fluid

Maker: ☐ *

Type: ☐ *

Viscosity grade: ☐ *

Is a temperature detecting device against overheating the hydraulic fluid provided? Yes ☐ No ☐

2.13 Landing door assemblies

a) Does the contract require the landing door assemblies to be fire-rated? Yes ☐ * No ☐ *

If YES, what is the fire-rating requirement? ☐ h *

b) Is the test certificate available and in order? N/A ☐ * Yes ☐ * No ☐ *

c) If YES, and the doors are manually operated, is the means of fire prevention a fusible link? N/A ☐ * Yes ☐ * No ☐ *

If NO, describe the method used: ☐ *

d) Confirm that the fire-rated elements of the door assembly are correctly fitted: Yes ☐

2.14 Door locks

a) *Confirm that all the door locks have been tested in accordance with* **F.1** *of Part 2 and certified in accordance with* **F.1.4** *of Part 2:* Yes ☐ *

b) *Does the data plate conform to* **15.13** *of Part 2?* Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

3 Static examination (electrical)

3.1 Electric safety devices

Confirm that the electric safety devices are in accordance with appendix **A** *of Part 2:* Yes ☐

3.2 Insulation resistance to earth

a) Pump motor: ____ MΩ

b) Power system: ____ MΩ

c) Safety devices: (state minimum reading) ____ MΩ

3.3 Earthing

a) Is the maximum continuity resistance to the earth provided less than 0.5 Ω? (See clause **7**b.): Yes ☐ No ☐

b) Is the car connected to the controller earthing terminal by a separate conductor at least 0.75 mm² in cross-section Yes ☐ No ☐

3.4 Protection of conductors

a) Is the fixed wiring in conduits (or trunking, or fittings which ensure equivalent protection) throughout? Yes ☐ No ☐

b) *If NO, do the cables conform to* **13.5.1.2** *of Part 2?* N/A ☐ Yes ☐ No ☐

3.5 Phase failure device

Confirm that the phase reversal and phase failure protection operates correctly: Yes ☐

3.6 Electrical wiring

Do the electrical conductors, including travelling cables, conform to **13.5** *of Part 2?* Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

4 Dynamic tests

4.1 Safety contact/circuits

a)	Have the contacts at each landing entrance been proved so that when broken they stop and prevent movement of the car outside the unlocking zone?		Yes ☐	No ☐
b)	Have the mechanical locks at each landing entrance been proved for positive locking?		Yes ☐	No ☐
c)	Have the car door/gate contacts been proved so that when broken there is no car movement outside the unlocking zone?		Yes ☐	No ☐
d)	If separate terminal stopping switches are fitted, do they operate satisfactorily?	N/A ☐	Yes ☐	No ☐
e)	*Does the final limit switch operate satisfactorily in accordance with* **10.5.3.2** *of Part 2?*		Yes ☐	No ☐
f)	State the distance beyond terminal floor level at which the final limit switches are set to operate:	Nominal ____ mm		Actual ____ mm
g)	Have the stopping devices on the car top, and in the pulley room (where present) and pit been proved so that when broken they stop and prevent movement of the car?		Yes ☐	No ☐
h)	Have all the other switches/contacts in safety devices been proved so that when broken they stop and prevent movement of the car?		Yes ☐	No ☐
i)	Does the earthing of the most remote contact (lock or push button) operate a fuse or trip a circuit breaker without delay?		Yes ☐	No ☐
j)	Have the stopping devices on the car top, and in the pulley room and pit, been proved so that when broken they stop and prevent movement of the car under emergency electrical operation?	N/A ☐	Yes ☐	No ☐

4.2 Car top control station

a)	*Confirm that the lift speed when under car top control does not exceed* 0.63 m/s:	Yes ☐	
b)	Speed up:	____ m/s	
c)	Speed down:	____ m/s	
d)	*Confirm that the design of the car top station conforms to* **14.2.1.3** *of Part 2:*	Yes ☐	*
e)	*Confirm that the operation of the car top station conforms to* **14.2.1.3** *of Part 2:*	Yes ☐	

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

4.3 Clearance and run-bys

a) *Will the car and ram assembly (and counterweight if fitted) clear all obstacles:*

1) *with the car and rated load compressing the car buffers?* Yes ☐ No ☐

2) *with the ram extended to the ram stop?* Yes ☐ No ☐

b) What is the distance to the first striking point above the car, with the ram fully extended to the ram stop? ____ m *

c) State the overtravel of the car above top floor level: ____ mm

d) State the overtravel of the car below the bottom floor: ____ mm

e) *Is there clearance under the ram with the car fully compressed buffers?* Yes ☐ No ☐

f) *Is there clearance above the ram/pulley assembly when the ram is fully extended?* N/A ☐ Yes ☐ No ☐

g) *With the car in its fully raised positon, i.e. ram fully extended, is there a sufficient space to accommodate a rectangular block* 0.5 m × 0.6 m × 0.8 m *above the car, as specified in* **5.7.1.1**d *of Part 2?* Yes ☐ No ☐

h) *When the car rests on its fully compressed buffers, is there a sufficient space to accommodate a rectangular block* 0.5 m × 0.6 m × 1.0 m *below the car, as specified in* **5.7.2.3** *of Part 2, and is there at least* 0.5 m *between the bottom of the pit and the lowest point of the car?* Yes ☐ No ☐

NOTE. *Attention is drawn to the requirement given in* **5.7.3.3**b2 *of Part 2 that the clear distance between the bottom of the pit and the lowest part of the guide shoes or rollers of safety gear blocks, toe guards or parts of vertical sliding doors be at least* 0.1 m.

4.4 Entrance clearances

a) *Is the horizontal distance between the sill of the car and sill of all the landing doors* 35 mm *or less?* Yes ☐ No ☐

b) *Is the running clearance between door panels, and between panels and uprights, lintels or sills* 6 mm *or less?* Yes ☐ No ☐

c) *Has it been established that no recess or projection on the face of the sliding door panels exceeds* 3 mm*?* Yes ☐ No ☐

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*?* Yes ☐ No ☐

e) *If the answer to d) is NO, is the car door mechanically locked when away from the unlocking zone, in accordance with* **8.11.1** *of Part 2?* N/A ☐ Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

4.5 Door tests

NOTE. Where appropriate, the following tests should be carried out with the car and landing doors coupled.

a) How are the doors operated? manually ☐ If so, answer f, h, i, j, k, l, m, n.
powered ☐ If so, answer all except m.

b) *Is the measured maximum force to prevent closing, at the mid-point of travel,* 150 N *or less?* Yes ☐ No ☐
State the figure recorded: ☐ N

c) *Is the measured kinetic energy* 10 J *or less?* Yes ☐ No ☐
State the figure recorded: ☐ J

d) *Do all the protective devices reverse the doors in accordance with* **7.5.2.1.1.3** *of Part 2?* Yes ☐ No ☐

e) *If the protective device is made inoperative (see* **7.5.2.1.1.3**c *of Part 2):*
1) do the doors remain open? Yes ☐ No ☐
2) *If the answer to 1) is NO, do the doors close with a kinetic energy not exceeding* 4 J? N/A ☐ Yes ☐ No ☐

f) *Is the unlocking zone* 0.2 m *or less above and below landing levels (or* 0.35 m *in the case of simultaneously operated car and landing doors)?* Yes ☐ No ☐

g) *Do the landing doors have an automatic mechanical self-closing mechanism?* N/A ☐ Yes ☐ No ☐

h) *Is each set of landing doors capable of being unlocked from the outside with an emergency key?* Yes ☐ No ☐
If not, why not? ☐

i) Does the door motor/retiring ramp actuator protection system function correctly? N/A ☐ Yes ☐ No ☐

j) What form of electrical protection is provided for the door motor/retiring ramp actuator?

D.C. circuit breaker	☐	Timing relay	☐
Three-phase circuit breaker	☐	Thermistors	☐
Overloads in each phase	☐	Other (state)	☐

State the relevant characteristics: N/A ☐
Time to operate ☐ s
Trip current (if applicable) ☐ A

k) *Can the car doors be manually opened within the unlocking zone with a force of less than* 300 N *with the power off? (See* **8.11.2** *of Part 2.)* Yes ☐ No ☐

l) *If the rated speed of the lift is greater than* 1.0 m/s, *is the force required to open the car doors when outside the unlocking zone* 50 N *or greater?* N/A ☐ Yes ☐ No ☐

m) *Does the 'car here' indicator conform to* **7.6.2** *of Part 2 for manual doors?* N/A ☐ Yes ☐ No ☐

n) *If the entrance clearances are not in accordance with* **4.4**d *of this table, has it been checked that the car doors are mechanically locked when outside the unlocking zone in normal operation?* Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

5 Measurements of the electrical system

a) State the power system (use terms as described in **5.2.1** of Part 6): [ ] *

b) Provide the following details of the lift motor (as stated on the data plate):

	Specified		Actual	
1) Maker:		*		
2) Serial number:		*		
3) Type:		*		
4) A.C. voltage:	V	*	V	
5) Power rating:	kW	*	kW	
6) Current rating:	A	*	A	
7) Speed:	r.p.m.	*	r.p.m.	
8) Class of insulation:		*		
9) Duty rating:		*		

c) Provide the following details of the pump (as stated on data plate):

	Specified		Actual
1) Maker:		*	
2) Serial number:		*	
3) Type:		*	
4) Oil flow rate:	l/min	*	

d) Measure and record the following operational data when the car is at mid-point of travel.

Normal running conditions

Car loading condition		Hydraulic pressure[1]	Lift speed	Lift motor input[2]		Maximum levelling deviation (+ or –)	
				Voltage	Current	Specified	Actual
		bar	m/s	V	A	mm	mm
Empty	up						
	down						
Rated	up						
	down						

1) The pressure readings should be taken between the check valve or down direction valve, and the supply line to the cylinder.

2) The motor current readings should be measured on the main supply side of the line conductors of the motor within the control panel.

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

e) State the pressure at which the pressure relief valve starts to operate: ☐ bar

Does this conform to **12.5.3** *of Part 2?* Yes ☐ No ☐

f) *Is the pressure relief valve secured against unauthorized interference?* Yes ☐ No ☐

g) Does the shut-off valve hold the car with rated load? Yes ☐ No ☐

h) Does the hand pump function correctly (to enable release of the safety gear)? N/A ☐ Yes ☐ No ☐

i) *Does the operation of the manual lowering valve lower the car at a speed not exceeding* 0.3 m/s*?* Yes ☐ No ☐

j) In the case of an indirect acting lift, does the ram stop when the following three conditons are present:
- the power switch off;
- the car being lowered onto the prop;
- a slack rope or chain?

N/A ☐ Yes ☐ No ☐

k) *In the case of an indirect acting lift, does the slack rope (or chain) safety device operate in accordance with* **10.6** *of Part 2?* N/A ☐ Yes ☐ No ☐

l) *In the case of an indirect acing lift, does the slack rope (or chain) switch or pressure switch prevent operation of the lift until pressure is re-established by resetting the switch?* N/A ☐ Yes ☐ No ☐

m) *For lifts of three floors or more, can the positon of the lift car at any landing zone be detected from the motor room with the main power switched off?* N/A ☐ Yes ☐ No ☐

6 Pump motor main windings overcurrent protective devices

a) Measure and record the following (tick box or enter value, as appropriate):

Type of device	Manual reset	Automatic reset	Time to operate S	Trip current A	Setting
Three-phase circuit breaker		X			
Overloads in each phase		X			
Timing relay				X	
Thermistor				X	X
Other (Name type)					

b) Have you found these satisfactory? Yes ☐ No ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

7 Overspeed governor tests

7.1 Car governor

N/A ☐

Complete the following:

Governor type:

Serial number:

Device	Tripping speed m/s			Does it operate effectively?	
	Marked	Measured			
		Car up	Car down	Yes	No
Electrical	☒				
Mechanical		☒			

State how the governor was tested on the installation:

7.2 Counterweight governor

N/A ☐

Complete the following:

Governor type:

Serial number:

Device	Tripping speed m/s			Does it operate effectively?	
	Marked	Measured			
		Car up	Car down	Yes	No
Electrical	☒				
Mechanical		☒			

State how the governor was tested on the installation:

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

8 Tests for precautions against free fall or descent with excessive speed of car

NOTE 1. The following tests are to be conducted with the car descending. The test load is to be uniformly distributed in the car, and the safety gear switch, overspeed governor switch, buffer switch or any other electrical devices that may cause the lift to stop are to be temporarily shorted out.

a) Does the chosen stopping device operate correctly when tested to the conditons given in **D.2** of Part 2? Yes ☐ No ☐

b) For progressive safety gear, state slide distance: N/A ☐ ____ m

c) Does this value lie between those given by the manufacturer? Yes ☐ No ☐

d) *Is the pawl device buffer to the designed stroke as specified in* **10.4** *of Part 2?* N/A ☐ Yes ☐ No ☐

e) Is the floor of the lift car horizontal or sloping less than 5 % from the horizontal? Yes ☐ No ☐

f) Following the test of **8a**, confirm that no deterioration which could adversely affect the normal use of the lift has occurred. Yes ☐

NOTE 2.

Test speeds:

a) Use rated speed for all safety gear clamping and pawl devices.

b) Rupture valve: according to data plate.

c) Restrictor: maximum speed not to exceed down speed + 0.3 m/s.

NOTE 3.

Test loads:

a) Conventional car loading to **8.2.1** (table 1.1) of Part 2.

1) Use rated load for instantaneous safety gears, rupture valves and restrictors.

2) Use 125 % of rated load for progressive safety gears, clamping devices, pawl devices and instantaneous safety gear with buffered effect.

b) Non-conventional car loading to **8.2.2** (table 1.1.A) of Part 2.

1) Use 125 % of rated load for instantaneous safety gears with buffered effect, clamping devices, and pawl devices.

2) Use 150 % of rated load for progressive safety gears.

3) Use rated load for rupture valves and restrictors.

9 Counterweight safety gear test

NOTE. The following tests are to be conducted with the counterweight descending. There is to be no load in the car, and the safety gear switch, overspeed governor switch, buffer switch or any other electrical devices that may cause the lift to stop are to be temporarily shorted out.

9.1 Progressive safety gear N/A ☐

a) Does the safety gear operate correctly when engaging at rated speed with the car empty? Yes ☐ No ☐

b) State slide distance: ____ m

c) Does this value lie within the range given by the manufacturer? Yes ☐ No ☐

d) Following the test of **9.1**a, confirm that no deterioration which could adversely affect the normal use of the lift has occurred: Yes ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

9.2 Instantaneous safety gear N/A ☐

a) Does the safety gear operate correctly when engaging at rated speed with the car empty? Yes ☐ No ☐

b) Following this test, confirm that no deterioration which could adversely affect the normal use of the lift has occurred: Yes ☐

9.3 Safety rope

a) If the safety gear is tripped by a safety rope, does the triggering mechanism operate satisfactorily? N/A ☐ Yes ☐ No ☐

b) Does the slack rope safety switch function correctly? N/A ☐ Yes ☐ No ☐

	Specified	Actual
c) State rope size:	mm	mm

d) Following the tests of **9.3a** and **9.3b**, confirm that no deterioration which could adversely affect the normal use of the lift has occurred: Yes ☐

10 Hydraulic system pressure test

NOTE. 1 bar = 10^5 N/m^2 = 105 Pa.

a) When the car is at the highest floor level, state the static hydraulic pressure:

1) with the car empty: bar

2) with the car carrying its rated load: bar

b) *When a pressure of* 200 % *of full-load pressure is applied to the hydraulic system between the non-return valve and the jack (included) for a period of* 5 min, *confirm that there is no evidence of pressure drop and leakage (taking into account the possible effects of temperature change in the hydraulic system):* Yes ☐

c) *On visual inspection after the test of* **10b**, *confirm that the integrity of the hydraulic system has been maintained:* Yes ☐

11 Buffers

11.1 Energy accumulation buffers (spring type) N/A ☐

When the car with its rated load is placed on the buffer(s), the ropes being made slack, confirm that the compression corresponds to that given by the characteristic curve of the buffer (as provided by the buffer supplier or lift supplier): Yes ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

11.2 Energy accumulation buffers (polyurethane type)		N/A ☐		
When the car with its rated load is placed on the buffer(s), the ropes being made slack, confirm that the compression corresponds to that given by the characteristic curve of the buffer (as provided by the buffer supplier or lift supplier):		Yes ☐		
11.3 Energy dissipation buffers (oil type)		N/A ☐		
a) Car buffers: When the car is brought into contact with the buffers at rated load, at rated speed or at a speed for which the stroke of the buffers has been calculated, is operation satisfactory?		Yes ☐	No ☐	
b) Counterweight buffers: When the counterweight is brought into contact with the buffers, with the car empty, at rated speed, or at a speed for which the stroke of the buffer has been calculated, is operation satisfactory?	N/A ☐	Yes ☐	No ☐	
c) Do the buffers recover automatically after operation?		Yes ☐	No ☐	
12 Precautions against creeping				
a) Confirm that the car, with its rated load, stopped at the highest level served, does not move by more than 10 mm downward within 10 min (taking into account the possible effects of temperature changes in the hydraulic fluid).		Yes ☐		
b) Confirm that the anti-creep device selected from **2.1** of this table only operates within the door unlocking zone:		Yes ☐		
c) Confirm that the anti-creep device starts to operate at a maximum of 120 mm below floor level, but within the door unlocking zone:		Yes ☐		
d) Confirm that the anti-creep device operates both when the car and landing doors are open and when they are closed:		Yes ☐		
e) Confirm that the operation of the inspection and stop switches on the car top control, and the pit stop switch, isolates the re-levelling circuit:		Yes ☐		

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

13 Duty cycle test

a) Does the lift operate satisfactorily for a period of at least 0.5 h when running with rated load, full travel and intermediate stops at a rate of starts at least equal to the number of starts recommended in Part 6? Yes ☐ No ☐

b) State the machine room temperature at the end of this test: ☐ °C

Is this temperature rise acceptable? Yes ☐ No ☐

If NO, state reasons:

NOTE. It may be necessary to adjust or omit the operation of the doors to achieve the required number of starts per hour.

14 General

a) *Is the maximum load indicated in the car (e.g. number of persons, load in kilograms and identification number) and does it conform to* **15.2.1** *of Part 2?* Yes ☐ No ☐

b) If the lift is a firefighting lift, confirm that it has been designed in accordance with BS 5588 : Part 5: N/A ☐ * Yes ☐ *

c) If the lift is a firefighting lift, confirm that is has been tested in accordance with BS 5588 : Part 5: N/A ☐ Yes ☐

d) If the lift has an evacuation system for disabled persons, confirm that it has been designed in accordance with BS 5588 : Part 8: N/A ☐ * Yes ☐ *

e) If the lift has an evacuation system for disabled persons, confirm that it has been tested in accordance with BS 5588 : Part 8: N/A ☐ Yes ☐

f) *Confirm that the emergency instructions are displayed in the machine room in accordance with* **15.4** *of Part 2:* Yes ☐

g) *Confirm that the emergency operation system(s) function(s) correctly in accordance with* **12.9** *of Part 2:* Yes ☐

To whom has the emergency operation system been demonstrated? Name: ☐ Organization: ☐

h) *Confirm that the artificial lighting in the machine room conforms to* **6.3.6** *of Part 2:* Yes ☐

i) *Confirm that artificial lighting in the well conforms to* **5.9** *of Part 2:* N/A ☐ Yes ☐

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

j)	Are the machine room conditions satisfactory?	N/A ☐	Yes ☐	No ☐
	If NO, state reasons:			
k)	Are the provisions for heating and ventilating the machine room in working order?		Yes ☐	No ☐
l)	*Confirm that the machine room doors or trap doors are fitted with a suitable lock conforming to* **6.3.3.3** *of Part 2:*		Yes ☐	
m)	What are the means of emergency communication for passengers in the lift car?	Audible signal ☐	Voice communication ☐	
	Confirm that at least one means of emergency communication works:		Yes ☐	
n)	*Confirm that the emergency lighting of the car stays illuminated for at least* 1 h:		Yes ☐	
o)	*Is there safe means of access to all items of lift equipment in accordance with Part 2?*		Yes ☐	No ☐
	If NO, state reasons:			
p)	*Confirm that the safety notices/instructions specified in clause* **15** *of Part 2 and recommended in* **3.6** *of Part 6 are correctly displayed:*		Yes ☐	
g)	*Confirm that the toe guard conforms to* **8.4** *of Part 2:*		Yes ☐	
r)	Has a counterweight screen been fitted?	N/A ☐	Yes ☐	No ☐

15 Conclusions

a)	Following all the foregoing tests, confirm that all items for which the lift contractor is responsible are complete and that no deterioration which could adversely affect the normal use of the lift has occurred:		Yes ☐	
b)	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?		Yes ☐	No ☐

NOTE. Some items requiring attention may not be part of the contract for the lift but part of the installation and the responsibility of others. A list of typical inclusions and exclusions is given in BS 5655 : Part 6.

If NO, provide details:

Table 1 — Certificate of test and examination for hydraulic passenger and goods lifts

16 Declaration of conformity of design and manufacture

Does the design and manufacture of the lift conform to BS 5655 : Part 2? Yes ☐ * No ☐ *

If NO, state deviations: *

Signature(s): * *

Company position: *

17 Declaration of test

I/We certify that on ☐ the equipment was thoroughly examined and found to be free from obvious defects, subject to any statement in 15c and that the foregoing is a correct report of the result.

Vendor's/purchaser's identification number:

Signature(s):

Name and address of public service, association, company, firm or person making the examination:

Position in the above organization of the person who conducted the examination:

or
Qualifications of examiner, if working on his/her own account:

Test certificate serial number:

Date:

List of references (see clause 2)

Normative references

BSI publications

BRITISH STANDARDS INSTITUTION, London

BS 5588, *Fire precautions in the design, construction and use of buildings.*
BS 5588-5:1991, *Code of practice for firefighting stairs and lifts.*
BS 5588-8:1988, *Code of practice for means of escape for disabled people.*
BS 5655, *Lifts and service lifts.*
BS 5655-2:1988, *Safety rules for the construction and installation of hydraulic lifts.*
BS 5655-6:1990, *Code of practice for selection and installation.*
BS 5655-8:1983, *Specification for eyebolts for lift suspension.*

Informative reference

BSI publications

BRITISH STANDARDS INSTITUTION, London

BS 7671:1992, *Requirements for electrical installations, IEE Wiring Regulations. Sixteenth edition.*

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