BRITISH STANDARD

BS 2655-7: 1970

Incorporating Amendment Nos. 1 and 2

Specification for

Lifts, escalators, passenger conveyors and paternosters —

Part 7: Testing and inspection

UDC 621.876.3

Co-operating organizations

The Mechanical Engineering Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Associated Offices' Technical Committee*
Association of Consulting Engineers
Association of Mining Electrical and Mechanical Engineers
Board of Trade
British Chemical Plant Manufacturers' Association
British Compressed Air Society
British Electrical and Allied Manufacturers' Association*
British Gear Manufacturers' Association
British Internal Combustion Engine Manufacturers' Association
British Mechanical Engineering Confederation*
British Pump Manufacturers' Association
British Steel Industry
Crown Agents for Oversea Governments and Administrations
Department of Employment and Productivity*
Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales
Engineering Equipment Users' Association*
Gas Council
Institution of Civil Engineers
Institution of Gas Engineers
Institution of Heating and Ventilating Engineers
Institution of Mechanical Engineers*
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National Coal Board
National Physical Laboratory (Ministry of Technology)
Royal Institute of British Architects
Water-tube Boilermakers Association

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

British Railways Board
County Councils Association
Department of Health and Social Security
Draughtsmen's and Allied Technicians' Association
Electrical, Electronic, Telecommunications and Plumbing Trades Union
Engineers Surveyors' Association
Federation of Wire Rope Manufacturers of Great Britain
Fire Offices' Committee
Greater London Council
Institution of Electrical Engineers
Institution of Municipal Engineers
Mechanical Handling Engineers Association
Ministry of Housing and Local Government
National Association of Lift Makers
Post Office
Retail Trading Standards Association

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1574	October 1974	
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Contents

Foreword

This standard makes reference to the following British Standard:

BS 2613, *The electrical performance of rotating electrical machinery*.

This British Standard, prepared under the authority of the Mechanical Engineering Industry Standards Committee, is a revision of and supersedes the 1958 edition, which was entitled "Electric lifts".

The new title reflects the extension of the scope of this British Standard. Amendments to Parts 2 and 3 of this standard have been published, and implement the change in title. The revised Part 1 and additional new parts are being published separately and, together with Parts 2 and 3, are as follows:

Part 1: General requirements for electric, hydraulic and hand-powered lifts. This Part is basically a revision of the 1958 edition of BS 2655-1, without the building requirements and list of definitions, and extended to cover the engineering and safety requirements for new hydraulic and hand-powered lifts as well as for new electric lifts.

Part 2: Single speed polyphase induction motors for driving lifts. This Part covers the type of electric motor specially designed for driving lifts. It should be used in conjunction with BS 2613[1)] and gives additional requirements including the class of lift rating and special limits of temperature rise.

Part 3: Arrangements of standard electric lifts. This part gives standard dimensions for lift wells and machine rooms in relation to life capacity and platform sizes, for seven classes of lifts.

Part 4: General requirements for escalators and passenger conveyors. This Part specifies engineering and safety requirements for escalators and passenger conveyors. The latter may be described as machines in which the passenger carrying surface remains parallel to the direction of motion and are uninterrupted.

Part 5: General requirements for paternosters. This Part specifies engineering and safety requirements for paternosters which may be described as machines where series of cars are continuously running in closed loops, and are characterized by the car floors remaining substantially horizontal when the direction of motion is reversed at the extremities of car travel.

Part 6: Building construction requirements. This Part specifies structural and fire resistance requirements for the equipment covered by Parts 1, 4 and 5.

Part 7: Testing and inspection. This Part specifies tests, examination and certification of new and modified equipment covered by Parts 1, 4 and 5.

Part 8: Modernization or reconstruction of lifts. This Part specifies engineering and safety requirements.

Part 9: Definitions. This Part gives definitions of terms used in the remainder of the standard.

Part 10: General requirements for guarding. This part specifies requirements for the guarding of moving parts and protection against hazards from electrical equipment. It relates to equipment covered in Parts 1, 4 and 5.

CP 407:1972, *British Standard Code of Practice for electric, hydraulic and hand-powered lifts*. The code gives general information and guidance for planning, purchasing, installation and maintenance of passenger, goods and service lifts.

In case of difficulty in classifying any equipment in accordance with the headings of Parts 1, 4 and 5, reference should be made to the relevant definitions in Part 9.

This part of the standard covers examination and certification of new [see Amendment No. 2 (May 1979)] and modified equipment covered by Parts 1, 4 and 5. It is principally concerned with safety.

[1)] BS 2613, "*The electrical performance of rotating electrical machinery*".

It extends the scope of the tests which were included in the 1958 edition of the standard, and the types of certificate now included require that assurances of satisfactory performance from certain aspects be given together with certain contract and performance data. The certificates also require that the equipment to which they relate shall comply with all the relevant requirements of the standard. However, an "Exemption" clause is included for non-compliance where this is acceptable to the Certification Authority and other affected parties, such as the user.

It is envisaged that a Central Certification Authority might be set up, but in the interim the authority for signing the certificate will be one acceptable to the parties concerned (such as the manufacturer, user, insurance company and appropriate safety authority). In many cases this will in practice be a representative of the manufacturer.

Appendix A and Appendix F of this Part of this standard are rendered obsolescent concurrently with the publication of BS 5655 "*Lifts and service lifts*" Part 1:1979 "*Safety rules for the construction and installation of electric lifts*", under the conditions stated below.

1) This standard is no longer applicable to all new lifts installed in such new buildings as are designed after the date of publication of BS 5655-1 (31 May 1979).

2) All new lifts ordered after 31 May 1979, for installation in such buildings as have not yet been commenced but for which final plans existed before 31 May 1979, should be constructed preferably in accordance with BS 5655-1 or, if space considerations make it necessary, in accordance with this standard. If, however, such lift installations are scheduled for commissioning after 31 May 1984, the requirements of BS 5655-1 only are applicable.

3) All new lifts ordered after 31 May 1979, for installation in such new buildings as were under construction or completed before that date, are permitted to be constructed in accordance with either this standard or BS 5655-1. If, however, such lift installations are scheduled for commissioning after 31 May 1984, the requirements of BS 5655-1 only are applicable unless it can be shown that, owing to space limitations, compliance is not reasonably practicable.

4) Such new replacement lifts and major modifications to existing lifts as are commissioned before 31 May 1984, for use in existing buildings that were built before 31 May 1979, are permitted to be in accordance with either this standard or BS 5655-1. After 31 May 1984, the requirements of BS 5655-1 only are applicable unless it can be shown that, owing to space limitations, compliance is not reasonably practicable. Special provisions are permissible to meet certain site conditions often present in buildings that have been in use for many years. It is intended that the use of new equipment should not automatically be restricted because certain site conditions are now more rigorous than formerly.

Appendix F of BS 2655-7:1970 will, however, continue to be applicable to the future maintenance and inspection of existing electric lift installations constructed in accordance with BS 2655.

Appendix A and Appendix F. Appendix A and Appendix F of this Part of this standard should be endorsed:

This appendix is rendered obsolescent under the conditions stated in the foreword (See Amendment No. 2).

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 27 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.

1 Scope

This Part of this British Standard specifies requirements for the testing and examination of new and modified equipment covered by Parts 1, 4 and 5 of the standard. The standard differentiates between testing and examination at the time of commissioning, and subsequent periodic examinations.

The types of certificate to show compliance with the standard are included, and cover construction, certain aspects of performance, and contract data. Evidence of test certificates relating to certain components of the equipment is also specified.

2 Test and examination

2.1 Test and examination after installation

2.1.1 The performance of certain tests, as required to complete the appropriate test and examination certificate (see **2.1.2**), shall be undertaken for every installation before it is put into normal service, i.e. at the time of commissioning. Tests, as specified in Clauses **3** and **4** shall also be undertaken. A thorough inspection of all the equipment shall also be undertaken at this stage, and the appropriate certificate shall be completed in *all* respects.

2.1.2 For each type of equipment covered by this standard, the form of the appropriate test and examination certificate referred to in **2.1.1** shall be as follows:

1) Electric lifts for passengers and goods	Appendix A[a]
2) Hydraulic lifts for passengers and goods	Appendix B
3) Power operated and hand-powered service lifts	Appendix C
4) Escalators and passenger conveyors	Appendix D
5) Paternosters	Appendix E

[a] Rendered obsolescent under the conditions stated in the foreword (See Amendment No. 2).

2.2 Periodic examination

2.2.1 Every installation shall be examined within six months of commissioning, and thereafter at intervals not exceeding six months, the examinations being adequate to complete the appropriate certificate (see **2.2.2**) in *all* respects.

2.2.2 For each type of equipment covered by this standard, the form of the appropriate examination certificate referred to in **2.2.1** shall be as follows:

1) Electric, hydraulic and hand-powered lifts and paternosters	Appendix F[a]
2) Escalators and passenger conveyors	Appendix G

[a] Rendered obsolescent under the conditions stated in the foreword (See Amendment No. 2).

2.3 Component testing. Evidence of test certificates relating to some components is required to complete certain parts of the certificates dealing with static examinations, and these test certificates may relate to individual or type tests carried out by the component manufacturer, or the lift, escalator, passenger conveyor or paternoster manufacturer, or an independent body.

2.4 Availability of certificates. Copies of certificates appropriate to each type of equipment covered by this standard, as referred to in **2.1.2** and **2.2.2**, shall be available for inspection at all times at the location of the equipment.

2.5 Test facilities. All test weights, instruments and personnel to complete the testing and inspection after installation (see **2.1**) shall be provided by the manufacturer. A power supply, at the declared voltage and frequency, for test and adjustment purposes, shall be provided by the purchaser.

3 High voltage test (at makers' 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 be capable of withstanding a test voltage of ten times the working voltage, with a maximum of 2 000 V, when applied as follows:

1) Between the live parts and the case or the frame with all circuits completed.

2) Between main terminals or equivalent parts with all circuits open.

3) Between any live parts of independent circuits.

The test voltage should be alternating of approximately sine wave form with a frequency of approximately 50 Hz (50 c/s). This should be applied for one minute.

NOTE Owing to the impracticability of applying the tests specified in 1), 2) and 3) on controllers and similar apparatus after controller wiring has been completed, these tests shall be made at convenient stages of manufacture, and a test certificate issued by the manufacturer is acceptable.

4 Electrical tests (after installation)

All test equipment and instruments shall be provided by the manufacturer. The power supply, at the declared voltage and frequency, required for adjusting and testing shall be supplied by the purchaser. All installations shall be certified as detailed in the respective "Certificate of examination and test after installation". Electrical installations, excluding electronic equipment, shall be subjected to tests, by instruments, as follows:

1) A d.c. voltage not less than twice the operating voltage (r.m.s. value of an a.c. supply) shall be applied for the measurement of insulation resistance, provided that for tests on medium voltage circuits the test voltage need not exceed 500 V d.c. The insulation resistance to earth shall be not less than 1 MΩ.

The dampness in a new building may prevent a reading of 1.0 MΩ from being obtained. In this event the equipment may be provisionally accepted with an insulation resistance of 0.25 MΩ, but the retest when conditions improve shall be not less than 1.0 MΩ.

2) Test to determine that the earthing of all conduit, trunking, switch casings and similar metal work is continuous and does not exceed 0.5 Ω impedance.

Appendix A Type of certificate required for test and examination after installation of electric lifts for passengers and goods

(For service lifts see Appendix C)

A.1 Description

Location .....

Manufacturer .....

Lift identification No. ..... Contract power supply .....

Length of travel ..... Levels served .....

Contract load ..... Contract speed .....

Details of power supply at time of test .....

A.2 Static examination

(1) Is the rope/chain test certificate available and in order? .....

(2) Have the ropes/chains and their anchorages been examined and found to comply with Part 1 of BS 2655? .....

(3) Does the mechanical safety gear operate correctly? .....

(4) Where buffers are used, is the test certificate available and in order? .....

(5) Does the brake sustain the car with contract load plus 25 %? .....

(6) Does reversal and phase failure device (if fitted) operate correctly? .....

A.3 Lift motor current and speed tests

A.3.1 ***A.C. lifts only***

Lift motor manufacturer ..... Serial number .....

	At mid-travel	
	Running current	Running speed
	A	rev/min
1. Full load up		
2. No load down		

Form of protection: 3-phase circuit breaker[a]
overloads in each phase[a]
timing relay[a]

	Rotor	Measured current	Measured tripping time
		A	s
1. High speed winding D.O.L.[b]	Locked		
2. High speed rheostatic (with max. impedance) in circuit	Locked		
3. Slow speed winding D.O.L[c]	Locked		

[a] Strike out that which is inapplicable.
[b] D.O.L. = Direct on line.
[c] Two speed systems only.

A.3.2 ***V.V. lifts only***

Lift motor manufacturer..... **Serial number**.....

M.G. set manufacturer..... **Serial number**.....

(Motor and generator) .....

	M.G. set motor		Lift motor	
	At mid-travel			
	Running current	Running speed	Running current	Running speed
	A	rev/min[a]	A	m/s or ft/min[a]
1. Full load up				
2. No load down				

[a] Rev/min applies to geared machines; m/s or ft/min applies to gearless machines.

Form of protecting M.G. set:

With 3 phase circuit breaker.....**coil**.....**setting**

With overloads in each phase.....**A** .....**seconds**

A.4 Door tests

A.4.1 ***Landing and car door operator***

(1) Does the equipment comply with Part 1 of BS 2655? .....

(2) Maximum force at mid-point of travel .....

A.4.2 ***Protection***

Operating current.....A **Fuse or circuit breaker rating**.....A

Rotating motor type:

When additional electrical protection is fitted in association with rotating motor type:

	Measured current	Measured tripping time when fitted
	A	s
1. Running		
2. Doors stalled		
3. Single phasing		

A.5 Time delays

Car hold delay.....**seconds**

A.6 Control circuit voltage

Full load.....**V**

A.7 Insulation resistance to earth

Power system.....MΩ **Safety circuits**.....MΩ

A.8 Earthing

(1) Is all metalwork enclosing conductors bonded to earth? .....

(2) Is the car connected to earth by a separate conductor? .....

(3) Is the maximum continuity resistance to earth less than 0·50 Ω? .....

A.9 Governor test. For V.V. machines, Tests **A.9** and **A.11** are carried out simultaneously. For a.c. machines, Test **A.9** is carried out independently.

Contact	Particulars	Measured trip
	m/s or ft/min	m/s or ft/min
1. Electrical 1		
2. Electrical 2		
3. Mechanical		

State how the governor was tested on installation.....

.....

A.10 Limit switches. (1) If separate terminal stopping switches are fitted, do they operate satisfactorily? .....

(2) Do the final limit switches remove the motor supply before the car or counterweight contacts the buffers? .....

A.11 Safety-gear test (running). For a.c. machines the governor is tripped manually at contract speed.

Stopping distance, with contract load, on application of safety gear, of

(1) car .....

(2) counterweight .....

A.12 Clearance and runbys

(1) Will the car and counterweight clear all obstructions when driven at slow speed:

a. with the car and contract load compressing the buffer? .....

b. with the counterweight compressing the buffer, the car being empty? .....

(2) Distance to *first* striking point above car with counterweight on compressed buffer .....

(3) Estimated distance to first striking point above counterweight with car on compressed buffer .....

(4) Distance of bottom runby of car .....

(5) Distance of bottom runby of counterweight .....

A.13 Buffer tests

Do the buffers stop the car with contract load when travelling at contract speed in the buffer zone without permanent deformation of car and counterweight? .....

(For spring buffers this test is carried out with all stopping limit switches rendered inoperative. For oil buffers all stopping limit switches other than the final limit switch are rendered inoperative.)

A.14 Car top control station

(1) Speed up .....

(2) Speed down .....

(3) Does the operation of the car top control station comply with Part 1 of BS 2655? .....

(4) Does the car stop with its roof not less than 1·8 m or 6 ft from the top of the well? .....

A.15 Half hour run

The lift is to run at contract load, full travel, with intermediate stops to give a rate of starts equal to the contract number of starts/hour.

NOTE If considered necessary the test may be continued for a further half hour.

Observations.....

.....

A.16 Overload test

The car is to complete one round trip with contract load plus 10 %, with terminal stops only.

Observations.....

.....

A.17 Floor levelling tests

With contract load in the car state the maximum inaccuracy for any floor and any direction of travel.....

A.18 General

(1) Is a *load indication plate* fitted in the car? .....

(2) Do the *gate/door locks* comply with Part 1 of BS 2655? .....

(3) Will the *circuit breaker* (or *fuse*) protecting the gate/door lock circuit trip (blow) if the gate/door lock circuit is earthed when tested at the top and bottom landings and at the car gate/door position? .....

(4) Does the *fireman's control system* comply with Part 1 of BS 2655? .....

(5) Has the hand winding mechanism been demonstrated in operation? .....

(6) In your opinion, has the machine room adequate artificial lighting for all maintenance purposes? .....

(7) Are the machine room ventilation provisions in accordance with Part 6 of BS 2655? .....

A.19 Exemptions

List any exemptions from the requirements of Parts 1 and 6 (and Part 8 where applicable) of BS 2655, showing (in all cases) the authority for such exemptions

.....

A.20 Declaration

I/we certify that on.....19..... the equipment was thoroughly examined and found to be free from obvious defects, and to comply with Parts 1 and 6 (and Part 8 where applicable) of BS 2655, except as stated in A.19, and that the foregoing is a correct report of the result

Signature(s).....

Qualification.....

Address(es).....

.....

Date.....

If employed by a Company or Association give name and address.....

.....

.....

Appendix B Type of certificate required for test and examination after installation of hydraulic lifts for passengers and goods

(For service lifts see Appendix C)

B.1 Description

Location .....

Manufacturer .....

Lift Identification No.....

Length of travel.....

Contract load.....

Source of hydraulic supply.....

Diameter of ram.....

Contract power supply.....

Levels served.....

Contract speed (up).....

Pressure (bar* or lbf/in²).....

* 1 bar = 10^5 N/m^2.

B.2 Static examination

†(1) Is the rope/chain test certificate available and in order? .....

†(2) Have the ropes/chains and their anchorages been examined and found to comply with Part 1 of BS 2655? .....

†(3) Does the mechanical safety gear operate correctly? .....

(4) Where buffers are used, is the test certificate available and in order? .....

(5) Setting of relief valve (bar* or lbf/in²) .....

(6) Is the relief valve secured against unauthorized interference? .....

(7) Have permanent stops been fitted to prevent the car overtravelling? .....

* 1 bar = 10^5 N/m^2.
† Strike out that which is inapplicable.

B.3 Pump motor current and speed tests

Motor manufacturer..... Serial number.....

Pump manufacturer..... Serial number.....

	At mid-travel	
	Running current	Running speed
Full load up	A	(rev/min)

Form of protection: 3-phase circuit breaker[a]
overloads in each phase[a]
timing relay[a]
thermal relay[a]

[a] Strike out that which is inapplicable.

Does phase failure device operate satisfactorily? .....

B.4 Door tests

B.4.1 ***Landing and car door operator***

(1) Maximum force at mid-point of travel .....

(2) Does this comply with Part 1 of BS 2655? .....

B.4.2 ***Protection***

Operating current.....**A** **Fuse or circuit breaker rating**.....**A**

Rotating motor type:

When additional electrical protection is fitted in association with rotating motor type:

	Measured current	Measured tripping time
	A	s
1. Running		
2. Doors stalled		
3. Single phasing		

Operating current.....**A** **Rating**.....**A**

B.5 Time delays

Car hold delay.....**seconds**

B.6 Control circuit voltage

Full load.....**V**

B.7 Insulation resistance to earth

Power system.....**MΩ** **Safety circuits**.....**MΩ**

B.8 Earthing

(1) Is all metalwork enclosing conductors bonded to earth? .....

(2) Is the car connected to earth by a separate conductor? .....

(3) Is the maximum continuity resistance to earth less than 0·50 Ω? .....

B.9 Governor test (where governor fitted)

This test is carried out independently of the safety gear tests in **B.11**.

Contact	Nameplate particulars	Measured trip
	m/s or ft/min	m/s or ft/min
1. Electrical 1		
2. Electrical 2		
3. Mechanical		

State how the governor was tested on installation.....

B.10 Permanent stops

(1) Distance run past top floor level to permanent stop .....

(2) Distance run past bottom floor level to the solid buffer .....

B.11 Safety-gear test (running) (where safety gear fitted)

(The governor is tripped manually at contract speed). Does the operation of the safety-gear comply with the stopping distance requirements of Part 1 of BS 2655? .....

B.12 Clearances and runbys

(1) Will the car and, if fitted, the counterweight clear all obstructions when driven at slow speed:

a. when driven at slow speed with the car compressing the buffer? .....

b. with the car at its extreme top position? .....

(2) Distance to *first* striking point above car when in extreme top position .....

(3) Estimated distance to first striking point above counterweight (if fitted) with car on compressed buffer .....

(4) Bottom runby of car .....

(5) Bottom runby of counterweight (if fitted) .....

B.13 Buffer tests

Do the buffers stop the car with contract load when travelling at contract speed without permanent deformation of car and, if fitted, counterweight? .....

B.14 Car top control station

(1) Speed up .....

(2) Speed down .....

(3) Does the operation of the car top control station comply with Part 1 of BS 2655? .....

(4) Does the car stop with its roof not less than 1·8 m or 6 ft from the top of the well? .....

B.15 Half hour run

(The lift is to run at contract load, full travel, with intermediate stops to give a rate of starts at least equal to the contract number of starts/hour.

NOTE If considered necessary the test may be continued for a further half hour.

Observations.....

.....

B.16 Overload test

The car is to complete one round trip with contract load plus 10 % (or the maximum load — if less — which the supply pressure is capable of moving), terminal stops only.

Observations.....

.....

B.17 Floor levelling tests

With contract load in the car state the maximum inaccuracy for any floor and any direction of travel.....

B.18 General

(1) Is a *load indication plate* fitted in the car? .....

(2) Do the *gate/door locks* comply with Part 1 of BS 2655? .....

(3) Will the *circuit breaker* (or *fuse*) protecting the gate lock circuit trip (blow) if the gate/door lock circuit is earthed when tested at the top and bottom landings and at the car gate/door position? .....

(4) Can syphoning take place? .....

(5) Has the operation of the emergency lowering device been demonstrated? .....

(6) Does the anti-creep device function correctly? .....

(7) In your opinion, has the machine room adequate artificial lighting for all maintenance purposes? .....

(8) Are the machine room ventilation provisions in accordance with Part 6 of BS 2655? .....

B.19 Exemptions

List any exemptions from the requirements of Parts 1 and 6 (and Part 8 where applicable) of BS 2655, showing (in all cases) the authority for such exemptions.....

.....

B.20 Declaration

I/We certify that on ..... 19..... the equipment was thoroughly examined and found to be free from obvious defects, and to comply with Parts 1 and 6 (and Part 8 where applicable) of BS 2655, except as stated in B.19, and that the foregoing is a correct report of the result.

Signature(s) .....

Qualification.....

Address(es).....

.....

Date.....

If employed by a Company or Association give name and address.....

.....

Appendix C Type of certificate required for test and examination after installation of power operated and hand-powered service lifts

C.1 Description

Location .....

Manufacturer .....

Lift identification No..... *Contract power supply.....

Length of travel..... Levels served.....

Contract load..... *Contract speed†.....

*Source of hydraulic supply..... *Pressure (bar‡ or lbf/in²).....

*Diameter of ram

* Strike out that which is inapplicable.
† This is to be in the upward direction for hydraulic lifts.
‡ 1 bar = 10^5 N/m^2.

C.2 Static examination

(1) Is the rope/chain test certificate available and in order? .....

(2) Have the ropes/chains and their anchorages been examined and found to comply with Part 1 of BS 2655? .....

(3) Does the mechanical safety gear (if fitted) operate correctly? .....

*(4) Does the *brake/sustaining gear sustain the car with contract load plus 25 %? .....

*(5) Setting of relief valve (bar‡ or lbf/in²) .....

*(6) Is the relief valve secured against unauthorized interference? .....

*(7) Have permanent stops been fitted to prevent the car overtravelling? .....

* Strike out that which is inapplicable.
† This is to be in the upward direction for hydraulic lifts.
‡ 1 bar = 10^5 N/m^2.

C.3 Lift/pump motor current and speed tests[2)]

Lift/pump motor manufacturer..... Serial number.....

[2)] Strike out that which is inapplicable.

	At mid-travel	
	Running current	Running speed
	A	rev/min
1. Full load up		
2. No load down		

Form of protection: 3-phase circuit breaker[a]
overloads in each phase[a]

[a] Strike out that which is inapplicable.

	Rotor	Measured current	Measured tripping time
		A	s
Windings D.O.L. (direct on line)[a]	Locked		

[a] Strike out that which is inapplicable.

With 3-phase circuit breaker.....**coil**.....**setting**

With overloads in each phase.....**A**

C.4 Time delays[3)]

Car pause delay.....**seconds**

C.5 Control circuit voltage[3)]

Full load.....**V**

C.6 Insulation reliance to earth[3)]

Power system.....**MΩ** **Safety circuits**.....**MΩ**

C.7 Earthing[3)]

(1) Is all metalwork enclosing conductors bonded to earth? .....

(2) Is the maximum continuity resistance to earth less than 0·50 Ω? .....

C.8 Final limit switches[3)]

Do the final limit switches remove the motor supply before the car or counterweight contacts the buffers? .....

C.9 Safety-gear test (running)[3)]

Does the operation of the safety-gear comply with the requirements of BS 2655? .....

[3)] Strike out that which is inapplicable.

C.10 Clearance and runbys

(1) Distance to *first* striking point above car with counterweight on compressed buffer .....

(2) Estimated distance to first striking point above counterweight with car on compressed buffer .....

(3) Bottom runby of car .....

(4) Bottom runby of counterweight .....

C.11 Buffer tests[4)]

Do the buffers stop the car with contract load when travelling at contract speed without permanent deformation of car and counterweight? .....
(This test is carried out with all stopping limit switches rendered inoperative).

C.12 Half hour run[4)]

The lift is to run at contract load with pre-set car hold delay set to give the contract number of starts/hour.

NOTE If considered necessary the test may be continued for a further half hour.

Observations.....

.....

C.13 Overload test[4)]

The car is to complete one round trip with contract load plus 10 %, terminal stops only.

Observations.....

.....

C.14 Hauling effort[4)]

(1) What is the pull required to travel an empty car in the *down* direction? .....

(2) What is the pull required to travel a fully laden car in the *up* direction? .....

C.15 Serving boards

(1) Are serving boards fitted? .....

(2) If so, what is their minimum height? .....

C.16 Sill protection. This applies when car openings are not protected.

Are sloping boards or other forms of protection satisfactorily fitted below the sills to protect any goods projecting over the edge of the car from being trapped? .....

[4)] Strike out that which is inapplicable.

C.17 Floor levelling tests

With contract load in the car state the maximum inaccuracy for any direction of travel .....

C.18 General

(1) Is a *load indication plate* fitted in the car? .....

*(2) Will the *circuit breaker* or *fuse* protecting the gate lock circuit trip (blow) if the gate/door lock circuit is earthed when tested at the top and bottom landings and at the car gate/door position? .....

*(3) Can syphoning take place? .....

*(4) In your opinion, has the machine room adequate artificial lighting for all maintenance purposes? .....

*(5) Are the machine room ventilation provisions in accordance with Part 6 of BS 2655? .....

* Strike out that which is inapplicable.

C.19 Exemptions

List any exemptions from the requirements of Parts 1 and 6 (and Part 8 where applicable) of BS 2655, showing (in all cases) the authority for such exemptions

.....

C.20 Declaration

I/We certify that on .... 19..... the equipment was thoroughly examined and found to be free from obvious defects, and to comply with Parts 1 and 6 (and Part 8 where applicable) of BS 2655, except as stated in C.19, and that the foregoing is a correct report of the result

Signature(s).....

Qualification.....

Address(es).....

.....

Date.....

If employed by a Company or Association give name and address.....

.....

Appendix D Type of certificate required for test and examination after installation of escalators and passenger conveyors

D.1 Description

Location .....

Manufacturer .....

Escalator/passenger conveyor identification No. .....

Contract speed(s) ..... Incline angle .....

Number of exposed steps between combplates .....

Vertical rise ..... Tread width .....

Width between balustrades ..... Contract power supply .....

D.2 Static examination

*(1) Pallet type units: Do the following clearances comply with the requirements of Part 4 of BS 2655:

a. between adjacent pallets? .....

b. between pallets and skirting? .....

*(2) Belt type units: Do the following comply with Part 4 of BS 2655:

a. clearances between belt and skirting? .....

b. treadway deflection under test loading? .....

(3) Are the combplates and terminal guides adjusted vertically and horizontally to comply with the requirements of Part 4 of BS 2655? .....

(4) Has the brake(s) been examined and found to be in order? .....

(5) Is the balustrading complete and in accordance with the requirements of Part 4 of BS 2655? .....

*(6) Are guards fitting at ceiling intersections in accordance with the requirements of Part 4 of BS 2655? .....

* Strike out that which is inapplicable.

D.3 Driving motor current and speed tests

Driving motor manufacturer..... **Serial number**.....

	Running current (A)		Running speed rev/min
	up	down	
No load			

Form of protection: 3-phase circuit breaker[a]
overloads in each phase[a]

[a] Strike out that which is inapplicable.

D.4 Insulation resistance to earth

Power system.....MΩ **Safety circuits**.....MΩ

D.5 Earthing

(1) Is all metalwork enclosing conductors bonded to earth? .....

(2) Is the maximum continuity resistance to earth less than 0·50 Ω? .....

D.6 Half hour run

The escalator/passenger conveyor is to run unladen, fifteen minutes in the up direction followed immediately by fifteen minutes in the down direction.

Observations.....

.....

D.7 General

(1) Have the following items where fitted, been checked for correct operation in accordance with Part 4 of BS 2655?

Emergency stop switches .....

Speed governor .....

Broken chain or treadway device .....

Broken drive device .....

Non-reversal device .....

(2) Are the *notices* for passengers and in machinery spaces in accordance with Parts 4 and 6 of BS 2655? .....

(3) Is the manufacturer's certificate available and in order, certifying that the escalator will carry contract load at contract speed? .....

D.8 Exemptions

List any exemptions from the requirements of Parts 4 and 6 of BS 2655, showing (in all cases) the authority for such exemptions .....

.....

D.9 Declaration

I/We certify that on ..... 19..... the equipment was thoroughly examined and found to be free from obvious defects, and to comply with Parts 4 and 6 of BS 2655 except as stated in D.8, and that the foregoing is a correct report of the result.

Signature(s).....

Qualification.....

Address(es).....

.....

Date.....

If employed by a Company or Association give name and address.....

.....

Appendix E Type of certificate required for test and examination after installation of paternosters

E.1 Description

Location .....

Manufacturer.....

Paternoster identification No..... Contract power supply.....

Length of travel..... Levels served.....

Contract load/car..... Contract speed.....

E.2 Static examination

(1) Have the chains and safety rope* been examined and found to comply with Part 5 of BS 2655? .....

(2) Does the chain breakage switch operate correctly? .....

(3) Do the car aprons and hoods operate correctly? .....

(4) Do the landing flaps and switches operate correctly? .....

(5) Does the brake sustain the cars with contract load plus 25 % placed in all cars in the ' up ' side of the system?

* Strike out that which is inapplicable.

E.3 Driving motor current and speed tests

Hoisting motor manufacturer..... Serial number.....

	Running current	Running speed
	A	rev/min
1. Full load[a] up		
2. Full load[a] down		

[a] Are to be taken as contract load in all cars in the "up" or "down" side of the system respectively.

Form of protection: 3-phase circuit breaker[a]
overloads in each phase[a]

	Rotor	Measured current	Measured tripping time
		A	s
1. High speed winding D.O.L. (direct on line)[b]	Locked		
2. High speed rheostatic (with max. impedance) in circuit[b]	Locked		
3. Slow speed winding D.O.L.[c]	Locked		

[a] Strike out that which is inapplicable.
[b] Alternatives. Also to be used for single speed systems.
[c] Two speed systems only.

E.4 Control circuit voltage

Full load..... V

E.5 Insulation resistance to earth

Power system..... MΩ Safety circuits..... MΩ

E.6 Earthing

(1) Is all metalwork enclosing conductors bonded to earth? .....

(2) Is the maximum continuity resistance to earth less than 0·50 Ω? .....

E.7 Half hour run

The paternoster is to run continuously with half the total number of cars (all adjacent) laden with contract load.

Observations.....

.....

E.8 Overload test

The cars are to complete one round trip with half the total number of cars laden (all adjacent) with contract load plus 10 %.

Observations .....

.....

E.9 Braking test

All cars in the ' down ' side of the system laden with contract load. Distance travelled in down direction after landing stop button pressed .....

E.10 General

(1) Do the cars pass smoothly through the *reversing zones* at the top and bottom of the paternoster? .....

(2) Do the *suspension chains* mesh smoothly with the chainwheels? .....

(3) Do the *car bows* engage smoothly with the cross beam in the pit and the spearhead at the top reversing zones? .....

(4) Do the *car aprons* operate without undue effort, and do they re-set satisfactorily? .....

(5) Are the *car aprons* substantially plumb? .....

(6) Does the *safety flap switch* (above the lintel of the ' up ' direction top entrance) when operated stop the paternoster? .....

(7) Is the *safety flap switch* easily re-set? .....

(8) Are the *landing notices* in accordance with the requirements of Part 5 of BS 2655? .....

(9) Do the *landing emergency stop switches* comply with the requirements of Part 5 of BS 2655? .....

(10) Have the use of the hand winding mechanism and the barrier cords (or equivalent means of obstructing entrances), been demonstrated? .....

(11) Does the *phase reversal relay* isolate the main motor if the incoming supply phases are reversed? .....

(12) In your opinion, has the machine room adequate artificial lighting for all maintenance purposes? .....

(13) Are the machine room ventilation provisions in accordance with Part 6 of BS 2655? .....

E.11 Exemptions

List any exemptions from the requirements of Parts 5 and 6 of BS 2655, showing (in all cases) the authority for such exemptions .....

.....

E.12 Declaration

I/We certify that on..... 19..... the equipment was thoroughly examined and found to be free from obvious defects, and to comply with the requirements of Parts 5 and 6 of BS 2655, except as stated in E.11, and that the foregoing is a correct report of the result.

Signature(s).....

Qualification.....

Address(es).....

.....

Date.....

If employed by a Company or Association give name and address.....

.....

Appendix F Type of certificate required for periodic examination of electric, hydraulic and hand-powered lifts and paternosters

For lift installations to which the Factories Act 1961 and the Offices, Shops and Railway Premises (Hoists and Lifts) Regulations 1968 apply, these Acts require that the Department of Employment and Productivity H.M. Factory Inspectorate Form F 54 be completed. For lift installations to which these Acts do not apply, the form below [excluding Item 5)] shall be completed. This form, except for Item 5), is based on the DEP Form 54.

For paternoster installations to which these Acts apply, it is required that DEP Form 54 be completed, and in addition Item (5) only in the form below shall be completed. For paternoster installations to which these Acts do not apply, the form below shall be completed [excluding Item 4)].

(1) Occupier (or owner) of premises.....
Address.....

(2) (*a*) Type of lift/paternoster and identification number and description .....
.....

(*b*) Date of construction or reconstruction (if ascertainable).....
.....

(3) Are all parts of the lift/paternoster of good mechanical construction, sound material and adequate strength (so far as ascertainable)? .....

NOTE Details of any renewals or alterations required should be given in (7) and (8) below.

(4) (Applicable to lifts only.) Are the following parts of the lift properly maintained and in good working order? If not, state what defects have been found:

a. Enclosure of lift well.....
b. Landing doors/gates and car doors/gates.....
c. Interlocks on the landing doors/gates and car doors/gates.....
.....
d. Other door/gate fastenings.....
e. Cage or platform and fittings, cage guides, buffers, interior of the liftway .....
f. Over-running devices.....
g. Suspension ropes or chains, and their attachments.....
h. Safety gear, i.e. arrangements for preventing fall of platform or cage .....

j. Brakes .....
k. Worm or spur gearing .....
l. Other electrical equipment.....
m. Other parts.....

(5) (Applicable to paternosters only.) Are the following parts of the paternoster properly maintained and in good working order? If not, state what defects have been found:

a. Enclosure of paternoster well.....
b. Car aprons and hoods.....
c. Landing flaps and switches.....
d. Safety flap switch.....
e. Landing emergency stop switches.....

f. Hoisting chains.....

g. Brakes .....

h. Worm or spur gearing.....

j. Other electrical equipment.....

k. Other parts.....

(6) What parts (if any) were inaccessible? .....

(7) Repairs, renewals or alterations required to enable the lift/paternoster to continue to be used with safety:

a. Immediately

b. Within a specified time, the said time to be stated.....

(If no such repairs, renewals or alterations are required enter "None")

(8) Defects (other than those specified at (7) above) which require attention

.....

(9) Maximum safe working load subject to repairs, renewals or alterations (if any) specified at (7).....

(10) Other observations .....

(11) I/We certify that on.....I/We thoroughly examined this lift/paternoster and that the foregoing is a correct report of the resu

Signature(s).....

Qualification.....

Address(es) .....

.....

Date.....

If employed by a Company or Association give name and address:.....

.....

The Factories Act 1961 and the Offices, Shops and Railway Premises (Hoists and Lifts) Regulations 1968, provide that every hoist or lift shall be thoroughly examined by a competent person:

1) In the case of a continuous hoist or lift or a hoist or lift not connected with mechanical power — at least once in every period of 12 months.

2) In the case of other hoists or lifts — at least once in every period of 6 months.

A report of the result of every such examination is required in a prescribed form. (Form F54.)

In premises where the Factories Act applies, the prescribed form must be attached to the general register. Otherwise it must be kept available for inspection for a period of 2 years.

When the examination shows that the hoist or lift cannot be used with safety unless certain repairs are carried out immediately or within a specified time a copy of the report must be sent to the appropriate enforcing authority, i.e. the District Inspector of Factories, the District Inspector of Mines and Quarries or the local authority, within 28 days of the completion of the examination.

Appendix G Type of certificate required for periodic examination of escalators and passenger conveyors

(1) Occupier (or owner) of premises .....
Address .....

(2) *a*. Type of installation and identification number and description .....
.....

b. Date of construction or reconstruction (if ascertainable) .....
.....

(3) Are all the parts of the installation of good mechanical construction, sound material and adequate strength (so far as is ascertainable)? .....
.....

NOTE Details of any renewals or alterations required should be given in (6) and (7) below.

(4) Are the following parts of the installation properly maintained and in good working order? If not, state what defects have been found:

a. Balustrades .....
b. Treadway .....
c. Treadway interconnections .....
d. Combplates and terminal guides .....
e. Speed governor .....
f. Emergency stop switch .....
g. Broken chain device .....
h. Broken drive device .....
j. Non-reversal device .....
k. Brakes .....
l. Worm or spur gearing .....
m. Other electrical equipment .....
n. Other parts .....

(5) What parts (if any) were inaccessible? .....

(6) Repairs, renewals or alterations required to enable the installation to continue to be used with safety:

a. Immediately .....

b. Within a specified time, the said time to be stated .....

(If no such repairs, renewals or alterations are required enter 'None')

(7) Defects (other than those specified at (6) above) which require attention

.....

(8) This equipment is considered safe to operate subject to repairs, renewals or alterations (if any) specified at (6) .....

(9) Other observations .....

(10) I/We certify that on ..... I/We examined this installation and that the foregoing is a correct report of the result.

Signature(s) .....

Qualification .....

Address(es) .....

.....

Date .....

If employed by a Company or Association give name and address .....

.....

.....

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