

**BS 8486-5:2019**



BSI Standards Publication

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

Part 5: Lift alarm systems conforming to BS EN 81-28

---

# Contents

	<b>Page</b>
<b>Foreword</b>	<b>ii</b>
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Examination and test of lifts and components	2
<i>Table 1 — Result of examination and test for new electric and hydraulic passenger and goods/ passenger lifts for the lift alarm system</i>	3
<i>Table 2 — Result of examination and test for new electric and hydraulic passenger and goods/ passenger lifts for the lift alarm system – Documentation</i>	5
<i>Table 3 — Confirmation of conformity to BS EN 81-28</i>	5
<b>Annex A</b> (informative) <b>Visible and audible signals flowchart</b>	<b>6</b>
<i>Figure A.1 — Visible and audible signals flowchart</i>	6
<b>Bibliography</b>	<b>7</b>

---

## Summary of pages

This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 7, an inside back cover and a back cover.

# Foreword

## Publishing information

This part of BS 8486 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2019. 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.

## Relationship with other publications

BS 8486 is published in a number of parts:

- Part 1: *Electric lifts* (covering lifts conforming to BS EN 81-1);
- Part 2: *Hydraulic lifts* (covering lifts conforming to BS EN 81-1);
- Part 3: *Passenger and goods passenger lifts conforming to BS EN 81-20*;
- Part 4: *Passenger and goods passenger lifts in existing buildings conforming to BS EN 81-21*;
- Part 5: *Lift alarm systems conforming to BS EN 81-28*;
- Part 6: *Lift features for accessibility conforming to BS EN 81-70*;
- Part 7: *Lift features for vandal-resistance conforming to BS EN 81-71*;
- Part 8: *Lift features for fire-fighting conforming to BS EN 81-72*;
- Part 9: *Lift features for emergency recall conforming to BS EN 81-73*;
- Part 10: *Lift features for evacuation conforming to BS EN 81-76*<sup>1</sup>.

This part of BS 8486 is intended to be read in conjunction with BS EN 81-28:2018.

## Information about this document

BS EN 81-28:2003 will be withdrawn on 31 May 2020 and superseded by BS EN 81-28:2018.

BS 8486-5 is intended to be used as a means to verify conformity to BS EN 81-28:2018. [BS 8486-1](#) and [BS 8486-2](#) remain available for testing lifts installed in accordance with BS EN 81-28:2003.

The Lifts Regulations 2016 [1] require the installer of a lift to take responsibility for its design, manufacture, installation and placing upon the market.

For conformity assessment, the Lifts Regulations 2016 [1] require that a lift undergoes certain procedures, including inspection and test, before being placed upon the market and put into service.

If the inspection and test are to be undertaken by the installer, it is expected that:

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

According to the requirements of the Lifts Regulations 2016 [1], the competence of the persons carrying out the testing of a lift needs to be confirmed. This can be demonstrated if they operate in

---

<sup>1</sup> Intended for future publication.

accordance with a quality assurance system. In the case of installers, this can be in accordance with a quality assurance system, monitored by a Notified Body.

*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 81-28. It does not cover every clause in BS EN 81-28, as many requirements are covered by the alarm system's manufacturer and the installer's quality control procedures or are to be verified by the building designer.

This part of BS 8486 covers the tests in BS EN 81-28:2018, Clause 6, as well as tests that do not fall within the alarm system's manufacturer and the installer's quality control system.

This part of BS 8486 does not cover other issues that are part of the installer's quality assurance system such as calibration of mechanical and electrical test equipment used in the specified tests (e.g. stop watches/chronometers, sound meters, light meters, voltmeters, ammeters).

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at [bsigroup.com/standards](https://bsigroup.com/standards), or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

### **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.

Particular attention is drawn to the recommendations for safe working practices provided in [BS 7255](#). Whilst [BS 7255](#) was written to cover the hazards which can be encountered when a lift is undergoing regular maintenance, much of its content is equally applicable to the hazards found during the testing process.

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.

It is assumed that manufacturers and installers will customize these tables to suit their product range, if necessary by adding or removing questions which are not relevant to the lift to be tested.

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

- installation and test instructions;
- general arrangement drawings;
- electrical schematic drawings;
- copies of test certificates (including Type Examination Certificates and details to allow safety component verification); and
- Notified Body approvals (if applicable) such as Type Examination Certificates and Design Examination Certificates.

This part of BS 8486 is not applicable to existing lifts (installed in accordance with previous standards), although it can be used to record the examinations and tests for parts renewed to current standards and as guidance when examining and testing lifts that have been modified or repaired in accordance with [BS 5655-11](#), [BS 5655-12](#) and BS EN 81-80.

### **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.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

It is recognized that certain tests/checks can be carried out more effectively before installation, and that others can only be made on site, unless it can be demonstrated by a quality assurance procedure and risk assessment that they can be performed with equal effectiveness off site. Answer boxes in the tables in this part of BS 8486 that contain a shaded square imply that the test is to be carried out on site as part of installation or testing.

### **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.**

---

## Introduction

The examinations and tests in this part of BS 8486 are intended to be applied prior to placing a lift into service for first use. Attention is drawn to the implications of testing when the lift is in beneficial use by builders or on any temporary supplies.

In drafting this part of BS 8486, it has been assumed that the same assumptions listed in BS EN 81-28 apply and that items related to the building design have been verified by the building owner/designer as part of negotiation.

---

## 1 Scope

This part of BS 8486 specifies one means of determining compliance with the provisions for examination, testing and recording results for new electric and hydraulic passenger and goods/passenger lifts for the alarm system specified in BS EN 81-28:2018, before being put into service.

---

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document<sup>2</sup>. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[BS 8486-3:2017](#), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 3: Passenger and goods passenger lifts conforming to BS EN 81-20*

BS EN 81-20:2014, *Safety rules for the construction and installation of lifts – Lifts for the transport of persons and goods – Part 20: Passenger and goods passenger lifts*

BS EN 81-28:2018, *Safety rules for the construction and installation of lifts – Lifts for the transport of persons and goods – Part 28: Remote alarm on passenger and goods passenger lifts*

---

## 3 Terms and definitions

For the purposes of this part of BS 8486, the terms and definitions given in BS EN 81-28:2018 apply.

---

<sup>2</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.

#### 4 Examination and test of lifts and components

Where lifts are provided with alarm systems, when the examination and tests specified in BS EN 81-28:2018 are carried out, the results shall be recorded using the questionnaires given in [Table 1](#) and [Table 2](#) of this part of BS 8486. Once all these have been answered satisfactorily, the result shall be recorded in [BS 8486-3:2017](#), Table 1.

All questions on the questionnaires shall be answered. Where a negative result (non-conformity) is recorded, it shall be clearly identifiable from a result confirming conformity. Answer boxes in the questionnaires that contain a shaded square indicate that the test shall 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, installation or test of the lift.

After the completion of the questionnaires in [Table 1](#) and [Table 2](#), [Table 3](#) shall be signed and dated.

*NOTE* It is essential to ensure that all of the safety requirements of BS EN 81-28 are 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 81-28.

**Table 1** — Result of examination and test for new electric and hydraulic passenger and goods/passenger lifts for the lift alarm system

<b>1.1 Alarm initiation and acknowledgement</b>			
a) Confirm that the following criteria are met, in accordance with BS EN 81-28:2018, <b>4.1.6</b> , when the car is at the landing with its doors open and the alarm initiation device in the car is pressed for a time longer than 30 s:			
1) an alarm is emitted;	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
2) the alarm is answered/acknowledged by the rescue service.	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
b) Confirm that the alarm system is able to accept communication from the rescue service until the end of the alarm has occurred, in accordance with BS EN 81-28:2018, <b>4.1.2</b> .	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
c) Confirm that the level of the audible signal is adjustable to suit the site conditions, in accordance with BS EN 81-28:2018, <b>4.1.5b</b> ).	N/A	<input type="checkbox"/>	Yes <input type="checkbox"/>
<b>1.2 Information in the lift car and end of alarm</b>			
<i>NOTE</i> BS EN 81-28:2018, Figure 1, reproduced in Annex A in this part of BS 8486 as Figure A.1, clarifies the operation of the visible and audible signals.			
a) Confirm that when an alarm has been validated as a true alarm, the yellow pictogram illuminates and an audible signal sounds, in accordance with BS EN 81-28:2018, <b>4.1.5a</b> ) and <b>4.1.5b</b> ).	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
b) Confirm that during voice communication, the green pictogram illuminates, in accordance with BS EN 81-28:2018, <b>4.1.5c</b> ).	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
c) Confirm that when the end of alarm is initiated, the yellow pictogram is turned off, in accordance with BS EN 81-28:2018, <b>4.1.5a</b> ).	N/A	<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
<b>1.3 Alarm filtering</b>			
Confirm that the following criteria are met, in accordance with BS EN 81-28:2018, <b>4.1.6</b> .			
a) An alarm is not initiated when the car is in an unlocking zone and the car and landing doors are fully open.			Yes <input checked="" type="checkbox"/>
b) An alarm is not initiated when the car is running.			Yes <input checked="" type="checkbox"/>
c) Alarms initiated during maintenance and/or repair are not discarded.			Yes <input checked="" type="checkbox"/>
d) There are means for a competent and authorized person to deactivate and reactivate filtering of alarms.			Yes <input checked="" type="checkbox"/>

Table 1 (continued)

<b>1.4 Alarm equipment identification</b>	
Confirm that the alarm equipment transmits full alarm and location information to the rescue service and that the installation is identifiable by the rescue service, in accordance with BS EN 81-28:2018, <b>4.1.7</b> .	Yes <input checked="" type="checkbox"/>
<b>1.5 Communication</b>	
When the alarm initiation device in the car is pressed with the car and landing doors not fully open for a time longer than the filtering time defined by BS EN 81-28:2018, <b>4.1.8</b> , confirm that:	Yes <input checked="" type="checkbox"/>
a) after the alarm initiation device, no further action from the trapped users is necessary;	Yes <input checked="" type="checkbox"/>
b) the voice communication equipment can be adjusted to suit site conditions;	Yes <input checked="" type="checkbox"/>
c) the user can always, during an alarm, re-initiate connection to the rescue service if this is necessary.	Yes <input checked="" type="checkbox"/>
<b>1.6 Technical characteristics</b>	
a) Confirm that, when the main power supply is disconnected or a failure is simulated, the alarm operates as in <b>1.1</b> , in accordance with BS EN 81-28:2018, <b>4.1.4</b> .	Yes <input checked="" type="checkbox"/>
b) Confirm that, when the emergency electrical power supply is disconnected or a failure is simulated, the failure of the emergency electrical power supply is indicated at the installation, in accordance with BS EN 81-28:2018, <b>4.1.4</b> .	Yes <input checked="" type="checkbox"/>
c) Confirm that the alarm equipment can emit information to alternative reception equipment, in accordance with BS EN 81-28:2018, <b>4.2.1</b> .	Yes <input type="checkbox"/>
d) Confirm that the alarm equipment can make a test call using the same connection means as used for an alarm, in the selected time frame, in accordance with BS EN 81-28:2018, <b>4.2.1</b> (i.e. at least every 3 days). <i>NOTE This test may be simulated by reducing the periodicity.</i>	Yes <input type="checkbox"/>
e) Confirm that the failure of a test call is shown, in accordance with BS EN 81-28:2018, <b>4.2.1</b> (flashing of green and yellow symbols alternatively).	Yes <input type="checkbox"/>
f) Confirm that any electrical interface between the alarm system and components of safety circuits of the lift is in accordance with BS EN 81-28, <b>4.2.2</b> , as required by BS EN 81-20:2014, <b>5.10.3.2</b> and <b>5.11.2.1.2</b> .	Yes <input type="checkbox"/>
g) Confirm that alarm initiation device(s) are installed at places where there is a risk of entrapment e.g. pit, car top, in accordance with BS EN 81-28:2018, <b>4.2.3</b> (see BS EN 81-20:2014, <b>5.2.1.6</b> ).	Yes <input checked="" type="checkbox"/>
h) Confirm that all alarm initiation device(s) operate correctly.	Yes <input checked="" type="checkbox"/>
i) Confirm that the alarm equipment is not accessible to passenger(s), in accordance with BS EN 81-28:2018, <b>4.2.4</b> .	Yes <input type="checkbox"/>
j) Confirm that access to the parameters of the alarm system is protected, in accordance with BS EN 81-28:2018, <b>4.2.5</b> .	Yes <input type="checkbox"/>

**Table 2** — Result of examination and test for new electric and hydraulic passenger and goods/passenger lifts for the lift alarm system – Documentation

<b>2.1 Information</b>	
Confirm that all information has been provided in accordance with BS EN 81-28:2018, 5.1 and 5.2.	Yes <input type="checkbox"/>

**Table 3** — Confirmation of conformity to BS EN 81-28

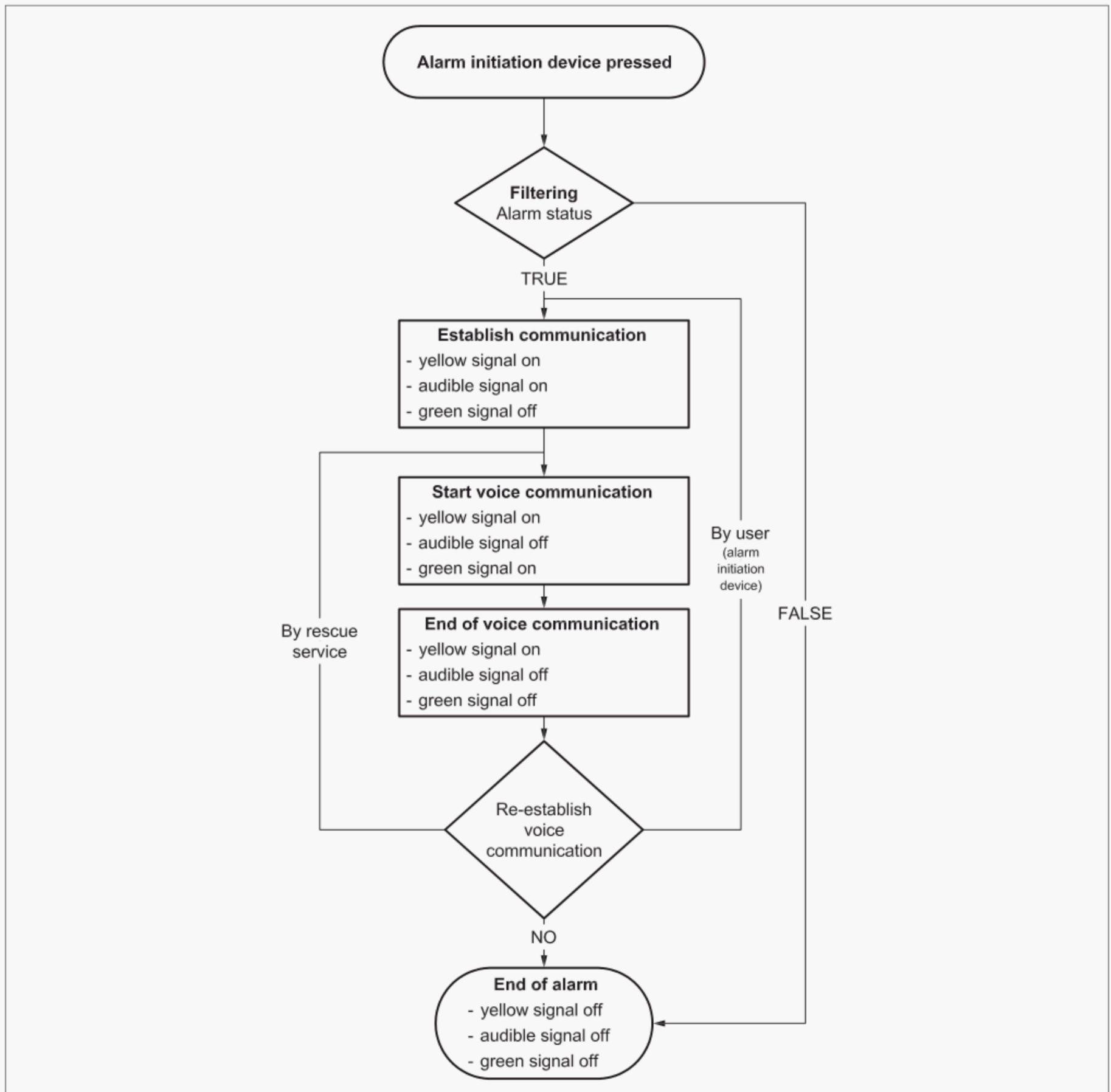
a) Are all the items associated with the installation, for which the lift installer is not responsible, in a suitable state for the installation to be put into service?	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			
<i>NOTE 1 Some of the items requiring attention might not be part of the contract for the lift but part of the installation and the responsibility of others.</i>					
If NO, provide details.					
b) Does the lift conform to BS EN 81-28:2018?	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			
If NO, state reasons.					
<i>NOTE 2 These can include Notified Body approval having been obtained (Design Examination Certificate or EU 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.</i>					
c) Have all the questions in Table 1 and Table 2 been answered?	No <input type="checkbox"/>	Yes <input type="checkbox"/>			
If NO, state reasons.					
Signature	<input type="text"/>	Name (in capitals)	<input type="text"/>	Position	<input type="text"/>
Company	<input type="text"/>	Date	<input type="text"/>	Place of signature	<input type="text"/>

## Annex A (informative)

### Visible and audible signals flowchart

Figure A.1 clarifies the operation of the visible and audible signals, and is a reproduction of BS EN 81-28:2018, Figure 1.

Figure A.1 — Visible and audible signals flowchart



## Bibliography

### Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[BS 5655-11](#), *Lifts and service lifts – Part 11: Code of practice for the undertaking of modifications to existing electric lifts*

[BS 5655-12](#), *Lifts and service lifts – Part 12: Code of practice for the undertaking of modifications to existing hydraulic lifts*

[BS 7255](#), *Code of practice for safe working on lifts*

[BS 8486-1](#), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 1: Electric lifts*

[BS 8486-2](#), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 2: Hydraulic lifts*

BS 8486-4, *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 4: Passenger and goods passenger lifts in existing buildings conforming to BS EN 81-21*

BS 8486-6, *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 6: Lift features for accessibility conforming to BS EN 81-70*

BS 8486-7, *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 7: Lift features for vandal-resistance conforming to BS EN 81-71*

[BS 8486-8](#), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 8: Lift features for fire-fighting conforming to BS EN 81-72*

[BS 8486-9](#), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 9: Lift features for emergency recall conforming to BS EN 81-73*

BS 8486-10 (not yet published), *Examination and test of new lifts before putting into service – Specification for means of determining compliance with BS EN 81 – Part 10: Lift features for evacuation conforming to BS EN 81-76*

BS EN 81-80, *Safety rules for the construction and installation of lifts – Existing lifts – Part 80: Rules for the improvement of safety of existing passenger and goods passenger lifts*

### Other publications

[1] GREAT BRITAIN. Lifts Regulations 2016. London: The Stationery Office.

# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

## Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than one device provided that it is accessible by the sole named user only and that only one copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than one copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

## Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright and Licensing team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [cservices@bsigroup.com](mailto:cservices@bsigroup.com).

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Useful Contacts

### Customer Relations

**Tel:** +44 345 086 9001

**Email:** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscription Support

**Tel:** +44 345 086 9001

**Email:** [subscription.support@bsigroup.com](mailto:subscription.support@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright and Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)

## BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK