

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Alarm systems – Intrusion and hold-up systems –
Part 2-73: Intrusion detectors – Glass break detectors (active)**
(standards.iteh.ai)

**Systèmes d'alarme – Systèmes d'alarme contre l'intrusion et les hold-up –
Partie 2-73: Détecteurs d'intrusion – Détecteurs de bris de glace (actifs)**

IEC 62642-2-73:2015
https://standards.iteh.ai/catalog/standards/sist/c45929c2-bacc-4819-9515-f56c20698a27/iec-62642-2-73-2015





THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 15 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

Plus de 60 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Alarm systems – Intrusion and hold-up systems –
Part 2-73: Intrusion detectors – Glass break detectors (active)**

**Systèmes d'alarme – Systèmes d'alarme contre l'intrusion et les hold-up –
Partie 2-73: Détecteurs d'intrusion – Détecteurs de bris de glace (actifs)**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 13.320

ISBN 978-2-8322-2918-7

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms, definitions and abbreviations	8
3.1 Terms and definitions.....	8
3.2 Abbreviations.....	9
4 Functional requirements	9
4.1 Event processing	9
4.2 Operational requirements.....	11
4.2.1 Time interval between intrusion signals or messages.....	11
4.2.2 Switch on delay	11
4.2.3 Self tests	12
4.3 Detection	12
4.3.1 Detection performance.....	12
4.3.2 Indication of detection.....	13
4.4 Immunity to false alarm sources.....	13
4.4.1 General.....	13
4.4.2 Immunity to small objects hitting the glass.....	13
4.4.3 Immunity to soft objects hitting the glass	13
4.4.4 Immunity to hard objects hitting the glass	13
4.4.5 Immunity to static pressure	13
4.4.6 Immunity to dynamic pressure.....	13
4.4.7 Immunity to wide band noise.....	13
4.5 Tamper security.....	13
4.5.1 General	13
4.5.2 Resistance to and detection of unauthorised access to the inside of the detector through covers and existing holes	14
4.5.3 Detection of removal from the mounting surface	14
4.5.4 Detection of masking	14
4.5.5 Immunity to magnetic field interference.....	15
4.6 Electrical requirements	15
4.6.1 General	15
4.6.2 Detector current consumption	15
4.6.3 Slow input voltage rise and voltage range limits.....	15
4.6.4 Input voltage ripple	15
4.6.5 Input voltage step change.....	15
4.7 Environmental classification and conditions	15
4.7.1 Environmental classification.....	15
4.7.2 Immunity to environmental conditions	15
5 Marking, identification and documentation	16
5.1 Marking and/or identification	16
5.2 Documentation.....	16
6 Testing.....	16
6.1 General.....	16
6.2 General test conditions	16

6.2.1	Standard laboratory conditions for testing	16
6.2.2	General detection testing environment and procedures	17
6.3	Basic detection test	17
6.3.1	General	17
6.3.2	Basic test source	17
6.3.3	Basic detection test method	18
6.4	Performance tests	18
6.4.1	General	18
6.4.2	Verification of detection performance	18
6.4.3	Hole drilling with a diamond hole saw	19
6.4.4	Glass cutting	20
6.5	Switch-on delay, time interval between signals, and indication of detection	20
6.6	Fault condition signals or messages: self tests	20
6.7	Tests of immunity to false alarm sources	21
6.7.1	General	21
6.7.2	Immunity to small objects hitting the glass	21
6.7.3	Immunity to soft objects hitting the glass	22
6.7.4	Immunity to hard objects hitting the glass	22
6.7.5	Immunity to static pressure	23
6.7.6	Immunity to dynamic pressure	23
6.7.7	Immunity to wide band noise based using flat steel rulers	24
6.7.8	Immunity to wide band noise based using IC's	24
6.8	Tamper security	25
6.8.1	General	25
6.8.2	Prevention of unauthorised access to the inside of the detector through covers and existing holes	25
6.8.3	Detection of removal from the mounting surface	25
6.8.4	Resistance to magnetic field interference	25
6.8.5	Detection of masking	25
6.9	Electrical tests	26
6.9.1	General	26
6.9.2	Detector current consumption	26
6.9.3	Slow input voltage change and input voltage range limits	26
6.9.4	Input voltage ripple	27
6.9.5	Input voltage step change	27
6.9.6	Total loss of power supply	27
6.10	Environmental classification and conditions	27
6.11	Marking, identification and documentation	29
6.11.1	Marking and/or identification	29
6.11.2	Documentation	29
Annex A (normative)	Catalogue of standard glass types	30
Annex B (informative)	List of small tools suitable for testing immunity of casing to attack	31
Annex C (normative)	Dimensions and requirements of a standard test magnet	32
C.1	Reference documents	32
C.2	Requirements	32
Annex D (normative)	Immunity test: small objects hit sensitivity	35
Annex E (normative)	Immunity test: soft objects hit sensitivity	36
Annex F (normative)	Immunity test: hard objects hit sensitivity	37

Annex G (normative) Immunity test: static pressure sensitivity	38
Annex H (normative) Immunity test: dynamic pressure sensitivity.....	39
Annex I (normative) General testing matrix	40
Annex J (normative) Performance test setup and alternative performance test setup	42
J.1 Performance test setup	42
J.2 Alternative performance test setup.....	43
Annex K (normative) Performance sensitivity test	45
Bibliography.....	46
Figure C.1 – Test magnet – Magnet type 1	33
Figure C.2 – Test magnet – Magnet type 2	34
Figure D.1 – Immunity test setup for small object hit sensitivity.....	35
Figure E.1 – Immunity test setup for soft object hit sensitivity	36
Figure F.1 – Immunity test setup for hard object hit sensitivity	37
Figure G.1 – Immunity test setup for static pressure sensitivity	38
Figure H.1 – Immunity test setup for dynamic pressure sensitivity.....	39
Figure J.1 – Performance test setup	42
Figure J.2 – Alternative performance test setup	44
Figure K.1 – Combined sensor element surface mounted glass break detectors test setup	45
Figure K.2 – Sender and receiver pair surface mounted glass break detectors test setup	45
Table 1 – Events to be processed by grade	10
Table 2 – Generation of Indication signals or messages.....	11
Table 3 – Performance test requirements.....	12
Table 4 – Tamper security requirements	14
Table 5 – Electrical requirements.....	15
Table 6 – Wide band noise simulation based on flat steel rulers	24
Table 7 – Operational tests.....	28
Table 8 – Endurance tests	28
Table A.1 – Standard glass types.....	30
Table J.1 – Performance test matrix.....	43
Table J.2 – Alternative performance test matrix	43

ITC STANDARD PREVIEW
(standards.iteh.ai)

[IEC 62642-2-73:2015](https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015)

<https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ALARM SYSTEMS – INTRUSION AND HOLD-UP SYSTEMS –**Part 2-73: Intrusion detectors – Glass break detectors (active)**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
<https://standards.iteh.ai/catalog/standards/sist/15923-c2-daed-4819-8515-iec-62642-2-73-2015>
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62642-2-73 has been prepared by IEC technical committee 79: Alarm and electronic security systems.

This standard is based on EN 50131-2-7-3 (2012) and its IS1 (2014).

The text of this standard is based on the following documents:

FDIS	Report on voting
79/513/FDIS	79/529/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62642 series, published under the general title *Alarm systems – Intrusion and hold-up systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

[IEC 62642-2-73:2015](#)

<https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015>

INTRODUCTION

This part 2-73 of the IEC 62642 series concerns intrusion and hold-up alarm systems (I&HAS) installed in buildings. It includes devices that are installed inside or outside of the supervised premises and mounted in indoor or outdoor environments. The other parts of this series of standards are as follows:

- Part 1 System requirements
- Part 2-2 Intrusion detectors – Passive infrared detectors
- Part 2-3 Intrusion detectors – Microwave detectors
- Part 2-4 Intrusion detectors – Combined passive infrared / Microwave detectors
- Part 2-5 Intrusion detectors – Combined passive infrared / Ultrasonic detectors
- Part 2-6 Intrusion detectors – Opening contacts (magnetic)
- Part 2-71 Intrusion detectors – Glass break detectors (acoustic)
- Part 2-72 Intrusion detectors – Glass break detectors (passive)
- Part 2-73 Intrusion detectors – Glass break detectors (active)
- Part 3 Control and indicating equipment
- Part 4 Warning devices
- Part 5-3 Interconnections – Requirements for equipment using radio frequency techniques
- Part 6 Power supplies
- Part 7 Application guidelines
- Part 8 Security fog devices (systems)

[IEC 62642-2-73:2015](https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015)

<https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015>

ALARM SYSTEMS – INTRUSION AND HOLD-UP SYSTEMS –

Part 2-73: Intrusion detectors – Glass break detectors (active)

1 Scope

This part of IEC 62642 defines active surface mounted glass break detectors installed in buildings and provides for security grades 1 to 4 (see IEC 62642-1), specific or non-specific wired or wire-free detectors, and uses environmental classes I to IV (see IEC 62599-1). This International Standard does not include requirements for active surface mounted glass break detectors intended for use outdoors.

A detector complies with all the requirements of the specified grade.

Functions additional to the mandatory functions specified in this standard may be included in the detector, providing they do not adversely influence the correct operation of the mandatory functions.

This International Standard does not apply to system interconnections.

2 Normative references

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

IEC 60068-2-52:1984, *Basic environmental testing procedures – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution)*¹

IEC 62599-1, *Alarm systems – Part 1: Environmental test methods*

IEC 62599-2, *Alarm systems – Part 2: Electromagnetic compatibility – Immunity requirements for components of fire and security alarm systems*

IEC 62642-1, *Alarm systems – Intrusion and hold-up systems – Part 1: System requirements*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms, definitions and abbreviations given in IEC 62642-1, as well as the following apply.

3.1 Terms and definitions

3.1.1

glass breakage

physical destruction of a glass pane, which allows intrusion to the monitored area, for example in doors, windows or enclosures

¹ First edition. This edition has been replaced in 1996 by IEC 60068-2-52:1996, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution)*.

3.1.2**active surface mounted glass break detector**

detector that detects changes to the integrity of a glass surface it is mounted on by sending, receiving and processing signals

3.1.3**basic test source**

signal simulator designed to verify the basic function of the detector

3.1.4**incorrect operation**

physical condition that causes an inappropriate signal or message from a detector

3.1.5**basic detection test**

test whose purpose is to verify the operation of a detector after conditioning

3.1.6**masking**

interference with the detector input capability such as an introduction of a physical barrier (e.g. metal, plastic, paper or sprayed paints or lacquers in close proximity to the detector) or changing the characteristics of the monitored area (e.g. placing wet newspapers on the outside of the monitored glass pane)

3.1.7**standard immunity glass pane**

glass pane to be used for all immunity tests, where a glass pane is needed, according to Annex A

iTeh STANDARD PREVIEW

(standards.iteh.ai)

[IEC 62642-2-73:2015](https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015)

3.1.8**simultaneous installation**

installation of more than one detector or sensor pair of one detector type (e.g. sender and receiver) for one or more detector's processing units

<https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015>

3.2 Abbreviations

BTS Basic test source

EMC Electromagnetic compatibility

4 Functional requirements**4.1 Event processing**

Detectors shall process the events shown in Table 1. Detectors shall generate signals or messages as shown in Table 2.

Table 1 – Events to be processed by grade

Event	Grade			
	1	2	3	4
Intrusion	M	M	M	M
No stimulus ^a	M	M	M	M
Masking	Op	Op	M	M
Tamper	Op	M	M	M
Low supply voltage – wire free devices	M	M	M	M
Low supply voltage – wired devices	Op	Op	Op	M
Total loss of power supply ^b	Op	M	M	M
Local self test ^c	Op	Op	M	M
Remote self test	Op	Op	Op	M
<p>Key</p> <p>M = Mandatory</p> <p>Op = Optional</p> <p>^a 'No stimulus' is considered to be the quiet condition, while no alarm generating stimulus for a detector at that time applies to the detector input capabilities.</p> <p>^b Mandatory for wire-free at all grades. Only required if power is for normal local operation, e.g. purely switch based solutions do not fall under this requirement; however if signal processing (except if it is the CIE itself) is required to process the output of the sensor, such an event shall be generated alternatively no generation of a message or signal is required when the condition is detected by the CIE due to system design.</p> <p>^c Mandatory for all grade 4 devices. For grade 3 devices only required in case of MCU based solutions based on Software / Firmware sensor input analysis and signal processing.</p>				

[IEC 62642-2-73:2015](https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015)

<https://standards.iteh.ai/catalog/standards/sist/c45923c2-daed-4819-8515-f56c20698a27/iec-62642-2-73-2015>

Table 2 – Generation of Indication signals or messages

Event	Signals or messages		
	Intrusion	Tamper	Fault
Intrusion	M	NP	NP
No stimulus	NP	NP	NP
Masking ^a	M	Op	M
Tamper	NP	M	NP
Low supply voltage	Op	Op	M
Total loss of power supply ^b	M	Op	Op
Local self test pass	NP	NP	NP
Local self test fail	NP	NP	M
Remote self test pass	M	NP	NP
Remote self test fail	NP	NP	M
M = mandatory NP = Not permitted Op = Optional			
^a An independent masking signal or message may be provided instead. ^b Alternatively total loss of power supply shall be determined by loss of communication with the detector. This permits two methods of signalling a masking event: either by the intrusion signal and fault signal, or by a dedicated output. Use of the intrusion signal and fault signal is preferable, as this requires fewer connections between CIE and detector. If multiple events overlap there will be some signal combinations that may be ambiguous. To overcome this ambiguity it is suggested that detectors should not signal 'intrusion' and 'fault' at the same time except to indicate masking. This implies that the detector should prioritise signals, e.g. 1 Intrusion, 2 Fault, 3 Masking. IEC 62642-2-73:2015 https://standards.iec.org/catalog/standards/sist/c45923c2-dced-4819-8515-56c20698a27/iec-62642-2-73-2015			
When, in Table 1, an event may optionally generate signals or messages, they shall be as shown in this table.			

4.2 Operational requirements

4.2.1 Time interval between intrusion signals or messages

Wired detectors shall be able to provide an intrusion signal or message not more than 15 s after the end of the preceding intrusion signal or message.

Wire free detectors shall be able to provide an intrusion signal or message after the end of the preceding intrusion signal or message within the following times:

Grade 1	300 s
Grade 2	180 s
Grade 3	30 s
Grade 4	15 s

4.2.2 Switch on delay

The detector shall meet all functional requirements within 180 s of the power supply reaching its nominal voltage as specified by the manufacturer.

4.2.3 Self tests

4.2.3.1 Local self test

The detector shall automatically test itself at least once every 24 h according to the requirements of Tables 1 and 2. If normal operation of the detector is inhibited during a local self-test, the detector inhibition time shall be limited to a maximum of 30 s in any period of 2 h.

4.2.3.2 Remote self test

A detector shall process remote self tests and generate signals or messages in accordance with Tables 1 and 2 within 10 s of the remote self test signal being received, and shall return to normal operation within 30 s of the remote test signal being received.

4.3 Detection

4.3.1 Detection performance

4.3.1.1 General

The detector shall generate an intrusion signal or message when a simulated or real glass breakage according to the corresponding requirements of Table 3 is performed.

Table 3 – Performance test requirements

Requirement	Grade 1	Grade 2	Grade 3	Grade 4
Verification of detection performance	M	M	M	M
Performance test: hole drilling with diamond hole saw	Op	Op	Op	M
Performance test: glass cutting	Op	Op	Op	M
M = Mandatory Op = Optional				

4.3.1.2 Verification of detection performance

This test will verify the detection performance for sensitivity and a break through the glass according to the supported conditions claimed by the manufacturer. It will verify the maximum covering range (sensitivity performance test) and the break through detection (breakage performance test), according to Annex A for different glass types and sizes claimed to be supported (types and dimensions) by the manufacturer. A number of standard glass types and sizes need to be passed by this test according to the corresponding test section.

4.3.1.3 Performance test for hole drilling with a diamond hole saw

This test will verify the detection performance by drilling a hole using a diamond hole saw on different glass types and dimensions according to the supported conditions claimed by the manufacturer and Annex A. It will verify if the detector is able to identify and signal the change of the integrity of the monitored side of the glass pane.

4.3.1.4 Performance test for glass cutting

This test will verify the detection performance by cutting the glass using a standard glass cutter on different glass types and dimensions according to the supported conditions claimed by the manufacturer and Annex A. It will verify if the detector is able to identify and signal the change of the integrity of the monitored side of the glass pane.

4.3.2 Indication of detection

Powered detectors at grades 3 and 4 that include processing capabilities shall provide an indicator at the detector to indicate when an intrusion signal or message has been generated.

At grades 3 and 4 this indicator shall be capable of being enabled and disabled remotely at access level 2.

4.4 Immunity to false alarm sources

4.4.1 General

The detector shall have sufficient immunity to false alarm sources if the following requirements have been met. No intrusion signal or message shall be generated as a result of the false alarm sources according to each individual test clause.

The tests for this clause will be performed on the standard immunity test glass pane as defined in 3.1.7, wherever a glass pane is required.

4.4.2 Immunity to small objects hitting the glass

The detector shall not generate an intrusion signal or message when small objects such as hail, sand, gravel etc. hit the outside of the monitored glass. The tests are described in 6.7.2.

4.4.3 Immunity to soft objects hitting the glass

The detector shall not generate an intrusion signal or message when soft objects (e.g. a human fist) hit the outside of the monitored glass. The tests are described in 6.7.3.

4.4.4 Immunity to hard objects hitting the glass

The detector shall not generate an intrusion signal or message when hard objects (e.g. handlebars of a bicycle) hit the outside of the monitored glass. The tests are described in 6.7.4.

4.4.5 Immunity to static pressure

The detector shall not generate an intrusion signal or message when permanent pressure changes applied to the monitored glass. The tests are described in 6.7.5.

4.4.6 Immunity to dynamic pressure

The detector shall not generate an intrusion signal or message when dynamic pressure changes (due to wind, etc.) applied to the monitored glass. The tests are described in chapter 6.7.6.

4.4.7 Immunity to wide band noise

The detector shall not generate an intrusion signal or message when a wide band of frequencies at the same time, which are close to the frequency of a glass breakage (e.g. branches of a tree moving against the window) are applied to the detector. The tests are described in 6.7.7 and 6.7.8.

4.5 Tamper security

4.5.1 General

Tamper security requirements for each grade of a detector are shown in Table 4.