

Loss prevention standards

Security

Intruder Alarms: European Standards

Providing general guidance on the harmonised
European Standards for the design and
installation of intruder alarm systems



Intruder Alarms: European Standards



Introduction

To help ensure that alarms are designed, installed and maintained reliably, most UK alarm suppliers and installers have previously adhered to a series of British Standards or Codes of Practice (CoP).

However, in 2004 the process of withdrawing some long-established British Standards began, their place being taken by new European Standards for Intruder and Hold-up Alarm Systems - usually referred to as the Euro Standards.

The European Standards only apply to new systems. Existing systems remain subject to the British Standards or CoP applying at the time of their installation; but exceptionally may need to comply with the European Standards if they require such extensive re-design or equipment replacement that they effectively become a new system.

This Loss Prevention Standard only provides general guidance on the European Standards. Detailed guidance documents are available from the [RISCAuthority](#) (UK insurers' technical advice body) and other organisations.



British Standards/Codes of Practice

From 1 March 2004 documents entirely or partly withdrawn include:

- BS 4737 (Intruder alarm systems in buildings)
- BS 7042 and BS DD242 (High security intruder alarm systems in buildings)
- BS 6799 and BS DD244 (Wire-free intruder alarm systems in buildings)

European Standards

The Euro Standards, as termed, comprise of a suite of documents published under two document numbers, as shown:

- EN 50131 - Intruder and Hold-up Alarm Systems
- EN 50136 - Alarm Transmission Systems (ATS) – also known as 'Notification' or 'Signalling'

Means of Introduction

Because some parts of the full suite of Euro Standards were not at the time published, and the Euro Standards do not cover some issues that alarms may be required to meet in the UK to satisfy the police or insurers, a UK enabling standard was prepared. This is called PD 6662 – Scheme for the application of European Standards for intruder and hold-up alarm systems. An updated UK scheme PD 6662: 2017 for adoption of the latest BS EN 50131: 2017 was introduced in 2017 with a dual running period until 31 May 2019, and so only the new scheme has been implemented from 1 June 2019.

LOSS PREVENTION STANDARDS

Grading and the European Standards

The key feature of the Euro Standards is a system of grading.

Four grades of alarm system exist, based on increasing levels of resilience against attack by intruders with anticipated levels of alarm knowledge and tools as shown below:

Grade	Intruders expected to have:
1	Little knowledge and limited tools
2	Limited knowledge and some tools
3	Knowledge and full range of tools
4	Sophisticated knowledge and tools

In reality, Grade 1 is a low (below the old BS 4737 Standard) level of system that is not acceptable for police response and Grade 4 equipment **isn't** widely available, so effectively the choice is between Grade 2 and Grade 3.

In a similar vein, any connected ATS have to meet increasing levels of performance based on the grade of alarm system they are connected to. Although ATS do not technically have an official grade designation, in common parlance the alarm industry has referred to the various types of ATS **and their performance as 'grades' of signalling.**

Who Decides the Grade of Alarm?

Whilst an organisation/individual will naturally take an interest in and help determine the type of alarm system they want to be installed, the main role of determining graded performance will usually lie with the following two parties:

Alarm Companies (Installers)

Installers are required to carry out a formal assessment of the theft risk to determine a suitable grade of alarm and a type/grade of ATS. To do so they will consider the items at risk, existing security arrangements and any previous thefts, etc. Before they proceed, they will (ideally) encourage the customer to seek any interested insurers' approval.

Insurers

Depending on the risk exposure, insurers may require an intruder alarm system to be installed before providing certain insurance covers, e.g. theft. As the grade of an alarm cannot be readily changed after installation, it makes sense to check a proposed alarm system specification with any interested insurer before proceeding. When it comes to any ATS, it's grade can often be retrospectively changed, but it may involve extra cost that is best avoided by meeting an insurers' requirement at the outset.

Insurers may respond to a request to approve an intruder alarm system by visiting the premises, making a decision based on information already held by them, or by agreeing with an installer's risk assessment.

As a general guide the following reflects insurers likely stance on Euro Standards Systems and ATS:

Detection and Control System

- Grade 2 - most domestic and some lower-risk commercial premises, e.g. those without public access and/or low values at risk
- Grade 3 - most commercial premises

Notification Options

- **Site only notification** ('audible only' signalling) isn't recognised in the Euro Standards but is recognised within the UK via PD 6662 which created a Grade 2 Notification Option X (Grade 2X) – now called Grade 2E within the latest version of PD6662
- Remote notification has historically either been stated as a specific make of ATS with a known level of single or dual path performance, or by the confusing reference to grade of ATS. The updated BS EN 50131 standard contains several notification options for each grade of alarm, and these are now shown as single path or dual path categories, such as SP3, DP2, etc.

If police response is required (usually meaning the system has to provide confirmed activations), a dual path (DP) ATS, i.e. with two separate transmission paths to the Alarm Receiving Centre (ARC), is likely to be required - whatever the grade of detection and control system.

Other Features of the European Standards

Whilst the Euro Standards contain a lot of complex detail/requirements, the following are key features:

General

With regards to the four grades of alarm systems mentioned earlier, equipment suppliers will mark each piece of alarm equipment as being suitable for use at a particular grade and also its environmental class, i.e. its suitability for use in dry, wet and/or hot, cold conditions.

Installers will generally use equipment of the same grade across a system but mixing equipment of differing grades may sometimes be appropriate. In such cases the official grade of the alarm system will follow that of the lowest graded piece of equipment used within it.

Detection and Control System – Grading

Apart from increasing event memories, length of battery back-up power and levels of recommended detection, the key difference between Grades 2, 3 and 4 relates to movement sensors:

- Grade 3 movement sensors must be able to detect ‘masking’, i.e. something being placed over the sensor lens, and either prevent, or detect, attempts to re-orientate a sensor, e.g. by a person moving it to point in a different direction

Note: Grade 3 movement sensors are particularly useful in premises where the public or employees have unsupervised business hours access, i.e. where they could possibly access and interfere with movement sensors unnoticed. They are also suitable within premises where accidental ‘masking’/re-orientation could occur.

- Grade 4 movement sensors must also be able to detect ‘range reduction’, i.e. blocking of part of the sensor’s field of view. Active infra-red beams would typically be able to satisfy this requirement.

Note: Notwithstanding the above, and as mentioned earlier, Grade 4 equipment is not generally widely available.

Notification ‘Grading’

Each grade of system has a subset of notification options showing acceptable combinations of alarm signalling, e.g. an audible site siren (warning device) and/or links to an ARC via an ATS. Those most likely to be used in the UK are as follows:

Grade	Option	Signalling Type
2	E	Siren at premises
	B	Siren + single link to ARC
	C	Two links to ARC
3	B	Siren + single link to ARC
	C	Two links to ARC
4	B	Siren + single link to ARC
	C	Two links to ARC

The performance of the link to the ARC varies between the notification options, the most notable difference being in the times taken for any lost signalling link (path) to be noted and reported to the ARC. For example:

- ATS category SP2 must report failure within 25 hours
- ATS category DP2 must report failure within 60 minutes
- ATS category DP3 must report failure within 6 minutes

In a dual path (option C) ATS where two signalling paths are installed (one historically landline based but increasingly now using the customer's broadband, and one mobile network based), the primary path will have a reporting time as above, and the secondary path, when not in use, will have a lower performance - which insurers will expect to 'step-up' to match that of the primary path once it is in use.

Maintenance

Maintenance requirements are:

Grade	Option	Maintenance
2	E	1 site visit per annum
	B	2 site visits per annum or 1 site and 1 remote check
	C	2 site visits per annum or 1 site and 1 remote check
3	B	2 site visits per annum or 1 site and 1 remote check
	C	2 site visits per annum or 1 site and 1 remote check
4	B	2 site visits per annum
	C	2 site visits per annum

Police Response

The availability of police response is governed by the Police Security Systems Policy which requires new alarms to comply with the Euro Standards. Refer to the Aviva Loss Prevention Standard Police Response to Security Systems for more information.

Checklist

An Intruder Alarms: European Standards Checklist noting key action steps when considering a new intruder alarm system is presented in Appendix 1 which can be tailored to your own organisation.

Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services via our network of Specialist Partners who are reputable companies offering agreed discounted rates for Aviva customers.

For more information please visit:

[Aviva Risk Management Solutions – Specialist Partners](#)

Sources and Useful Links

- [National Security Inspectorate \(NSI\)](#) - Tel: 01628 637512
- [Security Systems and Alarms Inspection Board \(SSAIB\)](#) - Tel: 0191 296 3242
- [British Security Industry Association \(BSIA\)](#) - Tel: 01905 342020
- [The RISC Authority](#)
- [S9 Document: Security – Intrusion and hold-up alarm systems \(I&HAS\): considerations for installers and other stakeholders](#) - RISC Authority

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

Email us at riskadvice@aviva.com or call 0345 366 6666.*

*Calls may be recorded and/or monitored for our joint protection.

Appendix 1 – Intruder Alarms: European Standards Checklist



Location	
Date	
Completed by (name and signature)	

	Intruder Alarms: European Standards	Y/N	Comments
1.	Is the proposed or selected installer required to comply with any standards, i.e. an alarm company subject to inspection by the National Security Inspectorate (NSI) or the Security Systems and Alarms Inspection Board (SSAIB)?		
2.	Have discussions taken place with the proposed installer, or any organisations asked to prepare a quotation for an intruder alarm, about the use of the premises and the nature of contents (in order to decide the grade of alarm)?		
3.	<p>Has your insurer reviewed and agreed with the proposed alarm system grade and notification option?</p> <p>Has a formal system design proposal noting the proposed level of detection and response been submitted to and accepted by your insurer?</p> <p>Has this been formally reviewed and confirmed in writing by your insurer?</p>		

LOSS PREVENTION STANDARDS

	Intruder Alarms: European Standards Contd.	Y/N	Comments
4.	<p>Where a confirmation system is required, e.g. to obtain police response, have you verified that the proposed system has:</p> <ul style="list-style-type: none"> a) Appropriate detection to provide a 'confirmed activation'? b) Adequate detection in the earliest stages of most conceivable break-ins? c) A 'means of un-setting' the system that should a break-in occur via an alarm entry/exit door, does not prevent or unduly delay the ARC contacting the police? d) A dual path ATS, ideally performing at category DP3? 		
5.	<p>Have arrangements been made with any ARC regarding response to alarm activations by your nominated keyholders and where appropriate, the police?</p>		
6.	<p>Is there a formal contract in place for the required inspection, testing, preventative and any corrective maintenance, etc. of the alarm system with the installation company?</p>		
7.	<p>Additional comments:</p>		

Please Note

This document contains general information and guidance only and may be superseded and/or subject to amendment without further notice. Aviva has no liability to any third parties arising out of ARMS' communications whatsoever (including Loss Prevention Standards), and nor shall any third party rely on them. Other than liability which cannot be excluded by law, Aviva shall not be liable to any person for any indirect, special, consequential or other losses or damages of whatsoever kind arising out of access to, or use of, or reliance on anything contained in ARMS' communications. The document may not cover every risk, exposure or hazard that may arise and Aviva recommend that you obtain specific advice relevant to the circumstances.

02/07/20 V1.0

Aviva Insurance Limited, Registered in Scotland Number 2116. Registered Office: Pitheavlis, Perth PH2 0NH.
Authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.

LOSS PREVENTION STANDARDS