TECHNICAL BULLETIN 0001

CLARIFICATION OF CERTAIN ASPECTS OF THE PD 6662: 2004 SCHEME FOR INTRUDER AND HOLD-UP ALARM SYSTEMS

1. Selection of the Grade of the I&HAS

Some questions have been asked about the selection of the grade for the Intruder and Hold-up Alarm System (I&HAS), and in particular when Grade 1 can be selected.

The grade of an I&HAS is determined by carrying out a risk assessment in accordance with DD CLC/TS 50131-7, and in general terms Grade 1 is used for low risk, Grade 2 is used for low to medium risk, Grade 3 is used for medium to high risk and Grade 4 is used for high risk.

Companies are reminded that all I&HAS need to be graded and that they need to comply with the requirements of the PD 6662:2004 scheme for the grade that has been selected. With the exception of the tamper arrangements described in clauses 8 and 10 of this document, the grade of an I&HAS will be the same as the grade of the lowest graded component within the system. The grade of an I&HAS, together with the chosen notification option, will be recorded on the NSI Certificate of Compliance.

Wherever possible, the insurer should be asked to specify the required grade. Where guidance from the insurer is not available, companies are encouraged to include a statement in their system design proposals advising customers to ensure that the recommended grade of I&HAS will be acceptable to their insurer. Companies may like to include the following text in their system design proposals to help avoid misunderstandings:

> *Customers are advised that European Standards for Intruder and Hold-up Alarm Systems specify FOUR grades of system. Each is intended to address an assessed level of risk as follows:*
>
> | | | |
> |---|---|---|
> | *Grade 1* | - | *Lowest risk* |
> | *Grade 2* | - | *Low to medium risk* |
> | *Grade 3* | - | *Medium to high risk* |
> | *Grade 4* | - | *Highest risk* |
>
> ***The system described in this proposal is a Grade…….*** *(insert agreed Grade)* ***system.***
>
> *You are advised to ensure that this grade will meet any requirements of your insurer.*

Companies may install and certificate Grade 1 I&HAS. However, Grade 1 is unlikely to be acceptable to insurers and customers should be made aware of this position.

2. Authorisation Code Requirements

BSI Committee GW/1/2 has advised recently that the numbers of differs for physical keys used to gain access to the functions of an I&HAS can be lowered with immediate effect to align with the values given in the proposed new edition of EN 50131-1, which is expected to be published during 2006.

Therefore, the following Table replaces Table 3 of prEN 50131-1: 2004:

Table 3 - Authorisation Code Requirements

Access levels 2, 3 & 4	Grade 1 Differs	Grade 2 Differs	Grade 3 Differs	Grade 4 Differs
Logical key	1,000	10,000	100,000	1,000,000
Physical key	300	3,000	15,000	50,000
NOTE Reference to physical and logical keys in the above table does not exclude the use of other means of authorisation, e.g. biometrics.				

3. Physical Keys Used to Disable All Means of Confirmation under 6.4.3 of DD 243

When the unsetting option described in 6.4.3 of DD 243: 2004 is chosen, users are prevented from gaining entry to the supervised premises before all means of confirmation have been disabled. This is through the use of a lock with an electrical connection to the I&HAS.

Either unlocking the initial entry door causes confirmation to be disabled or disabling confirmation permits the initial entry door to be unlocked (see DD 243).

BSI Committee GW/1/2 has advised recently that the number of differs for physical keys used to operate the lock that disables confirmation can be lowered from 3,000 differs to 1,000 differs in Grade 2 and from 15,000 differs to 1,000 differs in Grade 3.

When the initial entry door is unlocked and opened normally, an entry timer needs to start. The number of differs needed for keys used to complete the unsetting of the I&HAS remains as specified in Table 3 in Section 2 above in this Technical Bulletin for the type of key and the Grade of I&HAS (e.g. 15,000 differs in Grade 3).

4. I&HAS with Wire-Free Interconnections

Companies are advised that BSI Committee GW/1/2 has recently agreed an amendment to PD 6662: 2004 calling up the recently published European Standard BS EN 50131-5-3: 2005 *"Alarm systems – intrusion systems, Part 5-3: Requirements for interconnections equipment using radio frequency techniques".*

BS EN 50131-5-3 is primarily intended for manufacturers and is to be added to the list of component standards under 3.2 of PD 6662: 2004.

Companies should now select equipment that complies with prEN 50131-1: 2004 and BS EN 50131-5-3: 2005 when specifying PD 6662 I&HAS with wire-free interconnections.

5. Housings of Door Contact Terminals

Sub-clause 8.7.1 of prEN 50131-1: 2004 calls for all terminals and means of mechanical adjustment to be located within component housings.

Door contacts (e.g. roller shutter contacts, contacts on hinged doors, etc) are clearly component parts of the I&HAS and so their terminals need to comply with the above.

However, the I&HAS is judged in its installed (fitted) condition. Thus, the material to which the door contact is fitted (installed) may be regarded as part of the housing. In other words, the terminals of a door contact are regarded as fully enclosed if the attachment of the door contact to the fabric of the building has rendered the terminals inaccessible.

For example, where a "flush contact" sits in a recess cut into a timber frame, the recess in the timber may be considered as part of the door contact housing. As a further example, a "surface contact" would be screwed to the surface of the timber and when installed the terminals would not be accessible; the timber to the rear of the door contact may be regarded as part of the housing of the door contact.

This is (of course) on the basis that door contacts are always installed such that (when installed) their terminals are inaccessible.

On this basis, it is not necessary to source door contacts that, when they are supplied, are fully enclosed within a housing.

6. Tamper Detection of Door Contacts

Table 12 of prEN 50131-1: 2004 calls for intrusion detectors to include tamper detection in Grades 2, 3 and 4. The type of tamper detection required is "opened by normal means" – see Table 13.

However, it is important to remember that there is a NOTE that follows Table 12, stating: "It is accepted that it may be impracticable to provide tamper detection to magnetically or mechanically actuated switches".

At the present time, there appears to be relatively limited choice of door contacts in the market place that are manufactured with means for providing tamper detection. For some specific applications, there may not be any door contacts available that are manufactured with means for providing tamper detection.

Further, it has been common practice that installers do not always connect tamper detection, even where means for provision of tamper detection is provided. This may be because there has not been full confidence and assurance that the means of tamper detection provided in particular makes and types of door contacts is fully reliable in terms of lack of susceptibility to false alarms.

It would be extremely unfortunate if insistence upon tamper detection was to force installers into connecting poorly designed and manufactured tamper detection features, thus increasing susceptibility to false alarms.

The whole matter of tamper detection for door contacts and of the problems potentially arising is being referred to the BSI Committee responsible for PD 6662, with a request that consideration be given to requesting an Amendment of the EN and/or of introducing in the UK an Amendment into PD 6662.

For the time being, however, having regard to all the circumstances, and in view of the wording of the NOTE that follows Table 12, an I&HAS will not at present be "marked down" for lack of tamper detection on door contacts.

7. Protection of Door Contacts Against Interference By Magnets Etc.

The NOTE that follows Table 12 of prEN 50131-1: 2004 states: "It may be necessary to protect magnetically actuated devices against tampering with an external magnet or electro-magnetic source".

However, this is short of saying that protection against this form of tampering is required. There is no actual requirement in prEN 50131-1: 2004 for this form of tamper detection/protection.

NOTE: There is such a requirement for Grades 3 and 4 in DD CLC/TS 50131-2-6: 2004, but this DD document is not yet one of the standards called-up by the UK PD 6662 Scheme and so its use is not mandatory at this time.

The provision of protection against this form of tampering therefore stands as a suggestion, but not as something that has to be provided at the present time.

8. Grading of Door Contacts

Some I&HAS component manufacturers are producing graded door contacts with tamper detection. Some door contacts are also provided with protection against tampering with an external magnet or electro-magnetic source. NSI encourages companies to use such graded door contacts whenever they are best suited to the application and provided of course that they are unlikely to give rise to false alarms.

In the absence of graded door contacts best suited to the application, and given that NSI will not at present be regarding tamper detection on door contacts as essential, NSI accepts that some door contacts used in I&HAS will be not be graded.

The absence of tamper detection on door contacts does not lead to the I&HAS becoming graded as Grade 1.

9. Tamper Detection of Junction Boxes

It is important to remember that the second paragraph of 8.7.2 of prEN 50131-1: 2004 states: "In grades 1, 2 and 3, when an I&HAS includes protection against the substitution of signals, messages or components, junction boxes need not be provided with tamper detection". However, it may be unlikely that such protection against

substitution is normally included in these Grades of I&HAS and therefore tamper detection of junction boxes would be a requirement in Grades 2, 3.

NOTE: Tamper detection of junction boxes is a requirement in Grade 4 even though protection against substitution is provided in Grade 4 I&HAS.

However, it is widely recognised and understood that there would be a practical problem and risk (of false alarms) in applying this provision at the present time, in that it is reported that some makes of junction boxes on the market and commonly in use are provided with tamper detection facilities that may be less than fully reliable in terms of susceptibility to false alarms.

BSI Committee GW/1/2 has recently agreed to tamper detection on junction boxes being optional for the time being in Grades 2 and 3, but expects that new product lines may resolve this issue in due course.

For the time being, therefore, owing to the widely perceived practical problem and risk of false alarms, an I&HAS will not be "marked down" for lack of tamper detection on junction boxes.

10. Grading of Junction Boxes

There is no standard for junction boxes called up in the PD 6662 scheme. Given also that for the time being NSI will not be regarding tamper detection on junction boxes as essential, there is no need at present to grade junction boxes.

The absence of tamper detection on junction boxes does not lead to the I&HAS becoming graded as Grade 1.

11. Audible Warning Devices (WDs)

In the absence of a specific European Standard for WDs, Annex C of PD 6662: 2004 specifies provisions for WDs installed in the UK that are additional to the requirements for WDs given in prEN 50131-1: 2004.

NOTE: When reading Annex C of PD 6662: 2004, the phrase "audible alarm" should be read as meaning "audible WD".

Some companies have asked for clarification of the meanings of the terms "self-powered audible WD" and "remotely-powered audible WD" and also the requirements that are applicable to these two types of WD.

11.1 Self-Powered Audible WDs

A self-powered audible WD has an internal source of energy such as a primary or secondary (rechargeable) battery so that it is capable of generating sound if its connection to the Control and Indicating Equipment (CIE) is lost.

Self-powered WDs need to comply with Annex C of PD 6662: 2004 and with all the other provisions of prEN 50131-1: 2004 relevant to WDs.

11.2 Remotely Powered Audible WDs

A remotely powered audible WD has no internal source of power and can only generate sound when the power needed to do so is available from the CIE (i.e. the WD is remotely powered).

For this reason, when remotely powered audible WDs are installed, there must be at least two of them (see Table 10 of prEN 50131-1: 2004).

BSI Committee GW/1/2 has interpreted that remotely powered audible WDs need to comply with Annex C of PD 6662: 2004 and with all the other provisions of prEN 50131-1: 2004 relevant to WDs – except for the need for the WD to house a battery as described in C.3.4 and C.4.4 of PD 6662: 2004.

12. Wiring-Up Two Standby Batteries in Parallel

NSI has been asked to comment on the acceptability of wiring-up two standby batteries in parallel instead of using one larger standby battery to provide the alternative power source for the I&HAS. This is usually in the context of the batteries that are housed with the CIE and are recharged by the prime power source.

Sub-clause 8.1.4 of prEN 50131-1:2004 requires that means shall be provided to recognise a fault condition in the alternative power source (see Table 1 of prEN 50131-1: 2004).

When standby batteries are wired-up in parallel, a good battery may hide the existence of a failed battery depending on the method used in power supplies to monitor for faults. Therefore, unless the I&HAS is so designed and configured that it provides means for the two batteries to be tested independently (in which case this issue does not arise), standby batteries should not be wired-up in parallel because a failed battery may not be detected by the I&HAS.

Other good practice engineering reasons exist as to why standby batteries should preferably not be wired-up in parallel. For example, if internal impedances are dissimilar the discharge and recharge characteristics are likely to become unbalanced. Also, there is a risk that batteries might be accidentally connected in reverse polarity, which can create a hazard.

Footnote

The clarifications in this Technical Bulletin are closely aligned with those of the SSAIB and it is understood that SSAIB will also issue written advice to this effect.

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