



BSI Standards Publication

## Guidance for the selection, installation and use of vehicle security barrier systems

**Publishing and copyright information**

The BSI copyright notice displayed in this document indicates when the document was last issued.

© The British Standards Institution 2013. Published by BSI Standards Limited 2013.

ISBN 978 0 580 81203 3

ICS 93.080.30

*No copying without BSI permission except as permitted by copyright law.*

**Publication history**

First published December 2006

Second (current) edition August 2013

**Amendments issued since publication**

Date	Text affected
------	---------------

---

Currently in preview, click buy full version

## Contents

Foreword	<i>iii</i>
Introduction	1
1	Scope 1
2	Normative references 1
3	Terms and definitions, and abbreviations 2
4	Vehicle restraint measure (VRM) 3
5	Types of VSB system 4
6	Selection and installation of VSB systems for HVM 10
7	Critical asset assessment 11
8	Threat assessment 12
9	Site assessment 17
10	Vehicle access control, VSB system implementation and usage 24
11	VSB system construction and removal 34
12	Procurement strategy 36

### Bibliography 39

#### List of figures

Figure 1	– “V” ditch profile 6
Figure 2	– “V” ditch with bund 6
Figure 3	– Commonalities between an active VSB system and machinery 9
Figure 4	– Key chicane dimensions 23
Figure 5	– Single line perimeter with VSB system control gate 28
Figure 6	– Interlock VSB control enforced by VSB systems 29
Figure 7	– Final denial vehicle access control solution 30

#### List of tables

Table 1	– Vehicle access control methods 27
---------	-------------------------------------

#### Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 39, an inside back cover and a back cover.

Currently in preview, click buy full version

## Foreword

This PAS was sponsored by the UK Government's Centre for the Protection of National Infrastructure (CPNI). Its development was facilitated by BSI Standards Limited and published under licence from the British Standards Institution. It came into effect on 31 August 2013.

Acknowledgement is given to the following organizations that were involved in the development of this guide as members of the steering group.

- Allen Fencing Limited
- ATG Access
- Bavak Security Group
- Building Research Establishment (BRE)
- Centre for the Protection of National Infrastructure (CPNI)
- D.J. Goode and Associates Limited
- MFD International Limited
- MIRA Limited
- Perimeter Security Suppliers Association (PSSA)
- Transport Research Laboratory (TRL).

Acknowledgement is also given to the valuable contribution made by those organizations that reviewed the working draft of PAS 69 and who submitted comments for consideration.

### Supersession

This PAS supersedes PAS 69:2007, which will be withdrawn on publication of this PAS.

### Information about this document

PAS 69 has been updated and extended in the light of recent industry developments and changes to good practice for the installation, selection and use of vehicle security barriers.

The British Standards Institution retains ownership and copyright of this PAS. BSI Standards Limited as the publisher of the PAS reserves the right to withdraw or amend any PAS on receipt of authoritative advice that it is appropriate to do so. This PAS will be reviewed at intervals not exceeding two years, and any amendments arising from the review will be published as an amended PAS and publicized in Update Standards.

This PAS is not to be regarded as a British Standard. It will be withdrawn upon publication of its content in, or as, a British Standard.

The PAS process enables a document to be rapidly developed in order to fulfil an immediate need in industry. A PAS may be considered for further development as a British Standard, or constitute part of the UK input into the development of a European or International Standard.

### Relationship with other publications

PAS 68 was originally developed alongside PAS 69 and is an impact test specification for vehicle security barriers.

An international workshop agreement (IWA) is currently in development for the International Organization for Standardization (ISO) that covers similar content to PAS 68 and PAS 69. However, both PAS 68 and PAS 69 are well-established in the UK and they are being revised to meet immediate industry requirements and developments in the vehicle secure barrier (VSB) industry since their last publication.

### **Presentational conventions**

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

### **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 PAS cannot confer immunity from legal obligations.**

Particular attention is drawn to the following specific Acts:

- The Data Protection Act 1998 [1];
- The Equality Act 2010 [2].

## Introduction

The purpose of PAS 69 is to provide guidance on the effective specification and implementation of vehicle security barrier (VSB) systems. It has been developed with the intention of being used by security practitioners such as project managers, planners, architects, civil engineers, VSB designers, installers, security managers and facilities managers within the public and private sectors.

PAS 69 has been developed to complement PAS 68, *Impact test specifications for vehicle security barriers*, which addresses the needs of organizations requiring VSB systems with a specific level of resistance to hostile vehicle impact.

PAS 69 highlights the numerous issues to be addressed when considering the implementation of VSB systems as part of a holistic security system. The topics considered are by no means exhaustive, and the practitioner is encouraged to consider additional questions and responses to cater for specific requirements.

A holistic security system is likely to require integration of a VSB system with one or more security features including: pedestrian perimeter barriers, building fabrics, perimeter intruder detection systems (PIDS), intruder detection systems (IDS), access control, CCTV and security lighting. All of these features require appropriate management throughout their life cycle and are directed by clearly defined security procedures.

The mitigation of all vehicle-borne threats whilst maintaining all other needs can be difficult, especially when numerous project constraints are applied. Competing needs and the requirement to ensure fully integrated security can compromise the effectiveness of individual elements. In order to achieve an integrated system it is imperative from the outset to define the requirements of the site in terms of security and operational performance. This is where careful thought and production of an operational requirements document (OR) can add significant value to the whole process, from specification through to installation, commissioning, implementation and planning for future threats.

This edition of PAS 69 introduces the concept of a VSB system scoping document, based on the OR, which can be used by security practitioners to analyse and compare the proposed design and functionality of each proposed VSB system.

## 1 Scope

PAS 69 provides information and guidance for the selection, installation and use of vehicle security barrier (VSB) systems deployed to mitigate threats from vehicle-borne attack as part of a holistic security system.

*NOTE* The detailed process of producing operational requirements is given in the CPNI documents, *Guide to producing operational requirements for security measures* [3] and *Level 2 operational requirements for hostile vehicle mitigation measures* [4]. A VSB scoping document that can be used by security practitioners to compare and contrast proposed VSB solutions from suppliers is given in the CPNI document, *Vehicle security barrier scoping document* [5].

## 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.

PAS 68, *Impact test specifications for vehicle security barrier systems*