

PUBLICLY AVAILABLE SPECIFICATION

Guidance for the selection, installation and use of vehicle security barriers

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Foreword

This Publicly Available Specification has been developed for the UK Government's National Security Advice Centre (NSAC) by the Transport Research Laboratory (TRL) in collaboration with the British Standards Institution (BSI). Acknowledgement is given to the following organizations that were involved in the development of this specification.

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Introduction

This Publicly Available Specification (PAS 69) provides guidance on the selection, installation and use of vehicle security barriers to ensure that they are selected and placed as effectively as possible. This PAS is intended to be used by designers, planners, architects, security managers and facilities managers within the public and private sectors.

PAS 69 complements PAS 68:2007, *Specification for vehicle security barriers*, which describes methods for the classification of various barrier types in terms of their ability to resist dynamic impacts by vehicles.

PAS 69 highlights the issues to be addressed when considering the use of traffic calming and vehicle restraint systems as part of an overall security regime. The topics considered are by no means exhaustive, and the user is encouraged to consider additional questions and responses to cater for specific issues.

If changes are subsequently proposed for the security package that has been designed, decisions based on this PAS should be used to confirm why the original security decisions were made and how they will be affected by any changes. Decisions should be recorded and records retained for audit purposes and periodic review.

Vehicle security barriers, by virtue of their basic design, may not be intended to provide any blast resistance but may be affected by any explosives that detonate following the impact or arrest of a threat vehicle. Vehicle security barriers might increase the level of hazard created by an explosion. Specifiers should confirm whether this risk is acceptable.

Vehicle security barriers should not be considered in isolation but as part of an integrated security solution which may include, adjacent perimeter protection, CCTV, alarm monitoring and guard force activity.

1 Scope

This Publicly Available Specification (PAS) provides guidance for the selection, installation and use of vehicle security barriers.

General guidance is given in Annex A and Annex B.

2 Terms and definitions

For the purposes of this PAS, the terms and definitions in PAS 68:2007 and the following apply.

2.1 operational requirement

statement of needs based upon a thorough and systematic assessment of the problems to be solved and the desired solutions

2.2 traffic management

segregation, guidance and diversion of vehicles to mitigate potential hazards, marshal traffic and enhance the safety of road users and personnel working close to or on the highway

2.3 traffic calming

use of self enforcing physical measures to produce road alignments that require a reduction in vehicle speed in order to be successfully negotiated

2.4 standoff

distance from threat vehicle, load or component, including any potential explosive effect that may be allowed to encroach upon an asset

2.5 vehicle airlock system

system created by using two active barriers of any type across the vehicle path of approach, with a secure sterile area between the barriers

3 Site assessment

3.1 Identify and quantify the threat

3.1.1 Review any previous terrorist, criminal or malicious incidents and consider their relevance regarding the target and attack methods used.

NOTE Contact local police who will refer you to the appropriate adviser, such as Counter Terrorism Security Advisers (CTSAs), Architectural Liaison Officer (ALO) and Crime Prevention Design Advisers (CPDAs).

3.1.2 If the perceived threat is expected to be vehicle borne and there is a need to mitigate that threat, it will be necessary to consider how such a vehicle might be used in terms of:

- a) whether it is parked outside or inside the security perimeter;
- b) whether it is driven towards a security perimeter;
- c) whether an explosive device is carried;
- d) the potential size of vehicle (both largest and smallest);
- e) whether it is articulated or rigid;
- f) its corresponding height, width, weight and possible cargo.

3.1.3 Determine the required standoff from critical assets bearing in mind that the barrier could move or debris from the vehicle could be projected beyond the barrier's final resting position.

3.2 Identify the critical assets

3.2.1 Identify the assets to be protected, i.e. a building, group of buildings, an area, event, or personnel.

3.2.2 Confirm whether there is a defensible security perimeter, either permanent or temporary, or whether one will need to be established.

3.2.3 Identify the most critical buildings/assets (including neighbours). Consider their vulnerabilities. If more than one point is identified, they should be ranked in order of priority.

3.2.4 Outline the consequences of a successful attack and estimate the likely disruption in terms of loss of life, damage, delays, perception and cost.

3.3 Consider collateral damage

3.3.1 Identify locations which might suffer collateral damage from a successful attack, e.g.:

- a) areas where there are high concentrations of people;
- b) underground tunnels, basements and subways;
- c) vent shafts;
- d) bridges;
- e) major communication networks (above and below ground);
- f) electricity, water and gas lines (above and below ground);
- g) control rooms.

3.3.2 Identify other locations which might become alternative targets if the security strategy is effective.

3.3.3 Assess the possibility of coordinating a physical vehicle security barrier strategy with adjacent interested parties.

3.4 Consider the requirements for security measures

3.4.1 Define the period for which security measures will be required.

3.4.2 Assess whether the measures will be *operational continually, occasionally or infrequently*. Decide whether a permanent, semi-permanent or temporary installation is required. Identify the level of protection that the measure will be required to provide.

NOTE A permanent installation is a physical measure, usually requiring significant civil engineering works that is intended to remain in-situ and operate extensively over a lengthy period of time.

A temporary installation is the term given to physical measures that are deployed on the basis that they will remain in-situ for a short period of time and the extent of the remedial measures required upon removal are kept to a minimum.

A semi-permanent installation is typically a hybrid installation that incorporates some transitory elements that can be easily retracted or removed leaving any permanent foundation or anchorage in-situ.

3.4.3 Assess whether the measures need to be adaptable to changing threats.

3.4.4 The following should be determined.

- a) Whether the security need will be met if a single line of active barriers/bollards is provided to form a continuous perimeter.
- b) Whether an airlock system should be considered in order to form an effective access control system.

Consider if advance traffic calming would reduce the approach speed of vehicles to within the performance capability of the chosen access control system. Account should be taken of any need to provide early warning of an errant or hostile vehicle by the use of a “soft closure” (using signage, cones, etc.) ahead of the vehicle security perimeter.

3.5 Survey the site

3.5.1 Identify all possible approach routes along which a hostile vehicle could challenge a vehicle security barrier or secure perimeter. Ensure that all footpaths, footways, cycle paths, open spaces, and gaps have been considered together with the likelihood of hostile vehicles travelling against the expected direction of traffic.

3.5.2 Identify existing features that could be integrated into the vehicle security barrier systems, such as resilient street furniture and traffic management measures. Consideration should be given to the effect on security of possible future changes to these features.

3.5.3 Identify any open or secluded area that could allow access within the determined standoff distance from the protected asset.

3.5.4 List any unfavourable environmental conditions that might arise throughout the year, such as flooding, leaf mulch, tree foliage, frost, snow or ice.

3.5.5 Consider the existing road surface, kerbs and verges, gradients, camber or crossfall, at and in advance of, any proposed barrier location.

3.5.6 Confirm through the local planning office and highways department if there are any existing, or proposed road improvements or other works in the immediate area.

3.5.7 Consider the need for a wider area traffic management plan. Consider what the impact of a security scheme will be on traffic locally and beyond.

3.5.8 If the potential threat exceeds the barriers’ known capability, consider additional protective measures.

3.6 Identify stakeholders

Identify and obtain contact information for all stakeholders who may be affected by the proposed security measures. Include staff, deliveries, local authorities, public transport, emergency services, utility companies, neighbours and landlords.