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# Prevention of crime - Urban planning and building design - Part 8: Protection of buildings and sites against criminal attacks with vehicles

## S.R. CEN/TR 14383-8:2009

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## Prevention of crime - Urban planning and building design - Part 8: Protection of buildings and sites against criminal attacks with vehicles

Prévention de la malveillance - Urbanisme et conception des bâtiments - Partie 8 : Protection de bâtiments et de sites contre l'utilisation malveillante de véhicules

Vorbeugende Kriminalitätsbekämpfung - Stadt- und Gebäudeplanung - Teil 8: Schutz von Gebäuden und Anlagen vor Angriffen unter Verwendung von Fahrzeugen

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## **Foreword**

This document (CEN/TR 14383-8:2009) has been prepared by Technical Committee CEN/TC 325 "Prevention of crime by urban planning and building design", the secretariat of which is held by SNV.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document is one of a series for "Prevention of crime - Urban planning and building design" that consists of the following parts:

Part 1: Definitions of specific terms

Part 2: Urban planning

Part 3: Dwellings

Part 4: Shops and offices

Part 5: Petrol stations

Part 6: Schools (document in progress)

Part 7: Design and management of public transport facilities

Part 8: Protection of buildings and sites against criminal attacks with vehicles (this document)

## Introduction

Vehicles are often used for criminal actions. Offenders use the vehicle as a means to perform their criminal deed. The vehicle does not only serve the getaway and transportation purposes, it is also used for the violent breakthrough of security facilities like fences, doors, windows or façades.

The physical protection of a building or a site against the use of vehicles for a criminal purpose is not limited to the sole application of access control through physical obstacles.

The design of such devices in urban environment must be subject to an approach that takes into account various parameters including:

- the goal to be reached (deterrence, prevention, delay or limitation of the consequences of such criminal act and, not least, allowing an alarm <sup>1</sup>),
- the cost-benefit ratio,
- the technical requirements,
- the policy carried out in the fields of urban planning, road planning and the protection of sensitive sites,
- the general visual aspect so that the town, the neighbourhood, the site or the building does not look like a military fortified camp.

Any preventive approach in the field of security/safety requires first of all an analysis aiming to highlight the real nature of the threat. The next step shall be a study of the consequences of the various elements that can be implemented to lead to the validation of technical recommendations set out.

Generally, and whatever the type of criminal act, the major concern of the person in charge of security/safety of a building or of a public or private site shall be the following:

- keep the potential vector of the risk as far as possible from its target.

To reduce the risk, the traffic flow in the direction of the target should, if possible, be influenced as follows:

- the speed parameter (winding road, use of zigzag, other speed reducer),
- preventing the frontal impact (vertical incidence direction) on the target by considering the design of access roads,
- prohibiting parking in the immediate neighbourhood and the basement of the considered building, except for buildings with trained staff in charge of strictly checking authorized vehicles (underneath, car boot, loading area, etc.),
- limiting the dimensions of vehicles with authorized access by means of size control devices.

The security strategy may take into account not only the direct consequences of an attack but also the consequential damage on persons and real values, which is the result of:

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<sup>1</sup> The alarm function is generally ensured by anti-intrusion devices or CCTV, see EN standards. It will not be reviewed in the present document devoted to the mechanical protection of a building or a site.

- the movement of the vehicle itself or the crashed element,
- the more or less fast projection of sometimes primary fragments coming from the bomb or the vehicle itself or secondary fragments from the crashed element or other objects in the danger area,
- the scattering of flammable materials or the projection of flames,
- the consequences of an explosion (blast, fire ball, primary and secondary fragments),
- etc.

**NOTE** Please remember that the set of protective elements mentioned in the present document should meet the relevant requirements of the documents of national implementation or European recommendations quoted in the references, see bibliography.

## 1 Scope

The purpose of this document is to describe the consequences and risks of the criminal use of motor vehicles against buildings or sites in order to better assess the threats and to establish a security analysis:

- a) identification of possible attack methods,
- b) recommendation of technical elements in the field of protection,
- c) description of a set of physical protective measures to reinforce the security of public and private buildings,
- d) recommendation of organizational measures.

This document contains information for the professional implementation and application of preventive measures against the unauthorised access of vehicles into buildings or areas. It is necessary to achieve one of the four following protection levels:

- a) **Traffic control**  
Regulating the use of the different spaces where vehicles occur: traffic lanes, car parks and parking areas, delivery places, pedestrian areas, access routes, etc. The delinquent uses his own vehicle and wants to avoid any damage on it.
- b) **Protection against criminal attacks with vehicles**  
Protection against burglary, robbery, vandalism, etc. The delinquent uses stolen vehicles to commit criminal acts. He accepts the destruction of the vehicle but wants to preserve his integrity.
- c) **Protection against urban violence and heavy vandalism**  
Protection against ramming and burning cars used against private and public buildings and police enforcement or intervention forces. The delinquent uses any available vehicles. He shows no consideration for the life of other persons. He fights against institutions, authorities and their representatives and wants to destroy the social network of an area.
- d) **Mitigation of the effect of explosives in combination with vehicles**  
Mitigation of the effect of gas trucks, car bombs, etc.

Security requirements on doors, windows, façades and their accessories are defined by CEN in normative documents. The characteristics of the components which are burglar resistant, bullet resistant and resistant to the effects of explosives are taken into account. Also electric and electronic security components are covered by normative CEN/CENELEC documents.

Up to the present, the special topic of protection against ramming has not been taken into account in European standardization. The protection against unauthorised access of vehicles already starts at municipal car-free zones. Large underground car parks in residential areas have equal requirements; only authorized vehicles should be granted access. The driveways to office buildings, storehouses, authority buildings, prisons and further vulnerable infrastructures also need to be protected.

The protection level offers a wide spectrum and has to meet different requirements. The spectrum ranges from simple access control devices to prevent unauthorised parking up to systems to stop ram raiding and bomb attacks. Permanent or automatic blocks with or without human or technical access control can be used. Provisory blocks or mobile jamming elements can also be applied.

To take the different dangerous situations into account, corresponding load values must be defined. This serves both the interpretation and the assembly of the security elements.

This document contains notes for protective measures against offences and criminal attacks with vehicles. This document is not suitable for protective measures against terrorist attacks.



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