

GGF Datasheet: Windows and Doorsets - Security - Dwellings

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1. Introduction

This datasheet provides background, guidance and direction related to the Statutory Regulations and Standards which must be complied with when placing windows and doorsets on the UK and ROI markets.

It is also important to recognise that customers may need, or expect performance and/or functionality in addition to these requirements. The relationship between statutory obligations and customer desires has to be understood when aiming to provide products and installations that result in satisfied customers.

The background and supplementary information in this datasheet should assist in understanding these issues and provide the necessary information to support negotiations and agreements.

It should be noted that the requirements for windows and doorsets can be quite different when being supplied for replacement within an existing building aperture than those for windows and doorsets in an extension to an existing dwelling or for a complete new-build.

This datasheet is not a comprehensive set of instructions of how to meet all obligations, statutory or regulatory, and should not be relied upon as such. The responsibility lies with the building owner to ensure that the work carried out is safe and complies with the relevant regulations. A risk assessment should be carried out prior to works starting. GGF member companies will be able to assist with additional guidance on

safe working practices and regulation compliance.

There is no intent to reproduce here all the data contained in standards, statutes or regulations as these are subject to regular review and amendment and are easily accessible. The user is advised to ensure that they are always referring to the most up-to-date version of any document being relied upon.

2. Scope

This document describes aspects of performance relating to the resistance of doors and windows to attack by an intruder intent upon gaining access to a building for criminal purposes. It applies to windows and doors made from any material and intended for installation within the building envelope of dwellings.

3. Definitions

Building Envelope - All elements of the outer shell of a building that maintain a dry, heated or cooled indoor environment.

Manual Attack - A process that involves using hand based tools in an attempt to force entry.

Mechanical Attack - A process that involves using mechanical pressure for a consistent repeatable test, e.g. air rams, to attempt to force entry.

Defined Performance Level - A specification for a level of performance that has been proven by test. It should include a full list of hardware and fabrication method.

Easily Accessible - Either a window or a doorway, any part of which is 2m vertically of an accessible level surface, or a window within 2m vertically of a flat or sloping roof (with a pitch of less than 30°) that is within 3.5m of ground level.



4. Guidance

4.1 Design

The design of windows and doors affects the security and wellbeing of building occupants. As well as providing the means of entering/leaving a building, they must also have the capability to resist entry by unauthorised persons and/or be robust enough to withstand reasonable force during an attempt to gain unauthorised access to the building.

It must be accepted that given sufficient uninterrupted time and suitable tools, a skilled burglar will succeed in breaking into any building. It is impossible for any window or door to provide complete protection against forced entry. The normal aim of window and door product design is to deter the opportunistic intruder by providing enough resistance against attack to increase the chance of discovery and provide some resistance to known methods of intrusion.

The level of security required by a building occupant will depend upon their desire to protect themselves and their belongings, whether they are in the building or away from it. This may require additional performance over and above minimum requirements.

Regulations describe the minimum level of security to be provided and standards define test methods designed to simulate forced entry with a variety of tools and give classifications which can be derived from the force required or the tools needed to defeat the product and gain entry to the building.

Insurance providers may also define requirements as a condition of cover. Other factors such as physical location of products and their vulnerability may also be taken into consideration.

4.2 Hardware

The performance of components cannot necessarily be replicated between window and door designs as the fixings and profile design can have an influence upon how well they contribute to the resistance of the product under test.

As the security performance of products are determined by test, it is extremely important that products sold as having a defined performance level are fabricated exactly as tested. Any variation in position or substitution of component can result in a product not performing to the level required. Some hardware is made specifically for enhanced security and displays markings to show it has a level of resistance to attack. These markings can act as a

deterrent to opportunistic burglars.

4.3 Glazing

Regulation and standards define the type/performance of glazing to be used in certain locations. Glass is both an invitation and a deterrent to intrusion and should be considered carefully in order to protect from attempted forced entry.

4.4 Considerations

It is important to consider where security requirements can have an impact upon other characteristics. The requirement to unlock windows and doors with a key can be an impediment to quick and easy escape from the building should it be needed (fire) and a risk assessment is suggested. The selection of thicker or laminated glazing will reduce the amount of light transmittance and therefore have a detrimental impact on Window Energy Rating (WER) performance. Laminated glazing can also be an impediment to quick and easy escape if the need to break the glass arises.

4.5 Installation

It is important to consider installation, products should always be installed in line with the manufacturers' guidelines and BS 8213-4 Code of practice for the survey and installation of windows and doorsets, where applicable. Failure to do so could reduce the product performance.

Annex A - Additional Information

Design

Window and door product in domestic locations can be designed to have either basic security as detailed in BS 6375-3 or enhanced security as detailed in PAS 24. Both specifications are proven by test to each of the relevant standards. To design product for enhanced security special attention needs to be paid to several elements, including but not limited to the frame jointing method and availability and type of hardware to be used.

When manufacturing to enhanced security specifications (eg PAS 24) there are a number of certification schemes available to ensure performance and ongoing compliance. These include the BSI Kitemark, BM Trada Q mark, the Winmark from Wintech and the CEN Solutions CMS Mark among others. Approved Document Q of the Building Regulations in England and Wales requires product to be manufactured to a design that meets the requirements of PAS 24.

For further guidance on Approved Document Q please

refer to GGF publication 9.1A-A guide to Building Regulations England and Wales. Secured By Design is a police initiative that aims to design out the risk of crime. The scheme is widely recognised throughout refurbishment, new build and commercial projects. It requires certification to PAS 24 and not just test evidence.

Hardware

When basic security is needed then most hardware options available on the market today will meet the requirements for basic security as set out in BS 6375-3. For enhanced security there are lots of upgraded hardware options available.

The finished product including hardware is tested as a complete unit so it is important to note that hardware that has been tested to PAS 24 does not guarantee a pass on a finished product. The hardware may perform slightly different from system to system. Enhanced security to PAS 24 can only be claimed when 3rd party certified to a recognised UKAS approved scheme. Ongoing surveillance audits will ensure the same hardware and window/door system configuration is installed that was tested.

It is generally found that shoot bolt locking mechanisms offer a higher security. But more recently there have been new espag locking mechanisms released that are also capable of achieving enhanced security to PAS 24. TS 008 and TS 007 parts 1 and 2 are standards for enhanced security letter plates and cylinders. Cylinders tested to TS 007 part 1 or 2 will carry either 1 or 3 star markings, with 3 being the highest rating. These cylinders offer a high resistance to attack.

Letter plates tested to TS 008 will offer various security upgrades including stronger fixings to prevent it being prised off and a limited opening angle that will not allow an intruder to reach inside the property. Enhanced security windows and doors will sometimes need extra ancillary hardware such as hinge guards.

Glazing

Standard security products can be installed with standard glass, unless there is a need to resist impact in which case different glazing options may be required.

To comply with Approved Document Q easily accessible doors, and windows coupled to, or within 400mm of a door need to have laminated glass rated to BS EN 356:2000 P1A standard. The most widely used glass for this is 6.8mm laminated. The rest of the windows can be standard glass unless they are easily accessible and do not have locking handles such as fire egress windows above a flat roof. An easily accessible window or doorset

is defined as those which are installed within 2m vertically of a flat surface such as the ground or basement level or within 2m vertically of a flat or sloping roof (with a pitch of less than 30 degrees) that is within 3.5m of ground level.

For Secured by Design the same detail applies in most cases, but the Designing Out Crime Officer (DOCO) from Secured By Design may specify laminated glass to P1A standard throughout the ground floor based on a specific risk to the development. Some window systems will require security glazing clips or adhesive to ensure the glass is not removed during the PAS 24 test.

Packing of the glass is critical to achieving PAS 24 and special care should be taken to follow the manufacturers' guidelines.

BIBLIOGRAPHY

The latest edition of the referenced document applies.

Approved Document Q - Security. England and Wales

PAS 24 - Enhanced security performance requirements for doorsets and windows in the UK

BS 6375-3 Performance of window and doors. Classification of additional performance characteristics and guidance on selection and specification

BS EN 356 Glass in building. Security glazing. Testing and classification of resistance against manual attack

TS 007 parts 1 and 2 - Enhanced security performance requirements for replacement cylinders and/or associated security hardware

TS 008 Enhanced security and general requirements for letter plate assemblies and slide through boxes

BS 8213-4 Code of practice for the survey and installation of windows and external doorsets

GGF 9.1A - A guide to Building Regulations. England and Wales