

GUIDANCE NOTE: USE OF ANTI-SHATTER FILM (ASF) AND BOMB BLAST NET CURTAINS (BBNC)

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Introduction

This guidance note replaces HOSDB 11A/08: Guidance Note: Use of Anti-Shatter Film (ASF) and Bomb Blast Net Curtains (BBNC) 11 June 2008 (Edition 1) and provides updated guidance on the use of ASF and BBNC. It summarises recommended mitigation measures for use in existing buildings where there is a need to reduce the potential of flying glass entering the building, following an explosion. This is normally the case for heritage or Government buildings where replacement of existing windows is not permitted.

Where specially designed protection measures are required, such as for new buildings or when windows are being replaced, the use of laminated glass (or other appropriately designed glazing) is recommended. Further information can be found in CPNI Guidance Note: Glazing Enhancement to Improve Blast Performance, CPNI EBP 02/13. In such instances the glazing should be specified by engineers competent in the field of blast design (see Note 1).

Note 1: Suitable engineers may be members of the Register of Security Engineers and Specialists (RSES) (www.rses.org.uk) or will be able to demonstrate that they have the training and experience to meet the appropriate RSES competence of Protection Against the Effects of Blast.

Background information

The level of mitigation provided by the application of ASF, sometimes referred to as Fragment Retention Film (FRF), will depend upon the following factors: size of window; thickness of ASF; thickness of glass; and the type of glass. In addition the guidance below assumes that the ASF is 'daylight' fixed to annealed glass (sometimes referred to as float glass). Daylight fixed means that the ASF does not extend into the rebates of the window pane surround.

BBNC are particularly recommended for wood framed windows with small panes (e.g. 300mm across) such as Georgian style frames. If it is decided not to use BBNC behind such windows there is little point in increasing the film thickness beyond 100 micron.

The guidance does not cover the use of anchoring systems which may be used to increase the performance of ASF and help to retain the ASF in the frame. Where such systems are specified, the strength of the frame, fixings and structure needs to be assessed by a qualified engineer (see Note 1).

ASF shall comply with the appropriate classes of BS EN 12600:2002 Glass in building. Pendulum test. Impact test method and classification for flat glass. i.e. Class 2(B)2

Basic recommendations (pane area <3.0m² / < 6mm thick)

The recommendations in Table 1 should be applied to windows with panes of area up to 3.0m² and for annealed glass up to 6mm thick and relate to the classes described in BS EN 12600:2002.

| Threat ⁱ | Car bomb ⁱ | Van bomb ⁱ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------|
| Ground to 1 st floor | Class 1(B)1 ASF or Class 2(B)2 ASF + BBNC (see note below) | |
| 2 nd to 5 th floor | Class 1(B)1 ASF or Class 2(B)2 ASF + BBNC | |
| 6 th to 11 th floor | Class 2(B)2 ASF Only | Class 1(B)1 ASF or Class 2(B)2 ASF + BBNC |
| Above 11 th floor | No mitigation measures required | Class 2(B)2 ASF Only |
| Note: For medium to large panes (1.8m ² to 3.0m ²) in Ground and 1st Floor windows the use of Class 1(B)1 ASF should be considered even if BBNC are fitted to provide additional mitigation. | | |

Table 1 – Basic Recommendations for glazing with pane area <3.0m² / < 6mm thick

Film identified as Class 2(B)2 shall be at least 100 micron thick and shall be certificated to comply with the BS EN 12600 Class 2(B)2 standard. Where BBNC are omitted, except for very small panes, Class 1(B)1 ASF should be substituted for Class 2(B)2 ASF. This may equate to films of approximately 175 micron thickness but can include thinner or multi-layer films with enhanced properties.

Basic recommendations (pane area >3.0m² / > 6mm thick)

The recommendations in Table 2 should be applied to windows with panes of area greater than 3.0m² and with glass thicker than 6mm:

| Threat ⁱ | Car bomb ⁱ | Van bomb ⁱ |
|---------------------|---------------------------------|-----------------------|
| Ground to 1st floor | Class 1(B)1 ASF + BBNC | |
| 2nd to 5th floors | Class 1(B)1 ASF | |
| 6th to 11th floors | Class 2(B)2 ASF | Class 1(B)1 ASF |
| Above 11th floor | No mitigation measures required | Class 2(B)2 ASF |

Table 2 – Basic Recommendations for glazing with pane area >3.0m² / > 6mm thick

For Ground and 1st Floor windows 250–350 micron ASF should be used if BBNC are not fitted.

Internal glazing

Class 2(B)2 ASF should be applied to all internal glass on floors up to and including the 11th floor unless it is safety glazing (i.e. laminated or toughened glass).

Related guidance

The following guidance notes provide additional information relating to ASF and BBNC:

CPNI 09/13: Specification of daylight fixed ASF

CPNI 10/13: Peel Adhesion Testing and Assessment of ASF

¹Contact your local Counter Terrorism Security Adviser (CTSA) for threat information. Details of device sizes have not been included so that the Guidance Note can be published as Not Protectively Marked.