

Recognition and guidance to SAP assessors for the Flutter Shutter unit in RdSAP10

Technology

The Flutter Shutter system consists of a transparent blind and a tight shutter, which can be applied to existing windows to improve their energy performance. This note refers to the use of both the Flutter Shutter transparent blind and the associated shutter applied together.

The shutter component is normally open during the day and closed at night while the transparent blind is closed except for cleaning and maintenance.

Flutter Shutter's transparent blind is of high emissivity, and it is opaque to infrared radiation, but in terms of energy performance it is equivalent to certain standard glazing options, including, in some cases, low-emissivity glazing options.

Recognition

Where the RdSAP software permits U-values to be inserted, the following approach should be adopted:

- The Flutter Shutter transparent blind alone is modelled as generic secondary glazing.
- The FS shutter alone is modelled as an R-value of 0.16 m²K/W in order to include the effect of curtains, similar to the approach shown at the bottom of Table 24 of the RdSAP10 document (published 9 June 2025) i.e. using the formula $U = 1 / (0.16 + (1 / U_0))$ where U is the U-value with the shutter and U₀ is the U-value of the existing window with the transparent blind but without the shutter. RdSAP10 states that "for curtains and blinds no additional adjustment is required as curtains and blinds [are] already accounted for in formula (2) §3.2 in SAP10.2 by adding resistance R=0.04 m²K/W, however: if a window is fitted with uninsulated shutters use [a] R=0.13 m²K/W in formula (2) §3.2 in SAP10.2 [b] if a window is fitted within insulated shutters use R=0.16 m²K/W in formula (2) §3.2 in SAP10.2".

SAP Assessor Instructions

The methodology given below can be applied to installations involving any existing single-glazed, double-glazed or triple-glazed windows, but it is most likely to be used for retrofits involving existing single-glazing or old double-glazing.

Where the RdSAP software allows the input of U-values for windows...

- Determine the value U₀, the U-value of the existing window with secondary glazing, in W/m²K
- Incorporate the R-value of the shutter into the overall U-value by using the formula:
 $U = 1 / (0.16 + (1 / U_0))$
- Use this resulting U-value when calculating RdSAP10 etc.

Where the SAP or RdSAP software does not allow the input of U-values of windows...

Where the Flutter Shutter system is to be entered as an equivalent energy measure, as opposed to direct insertion of U-values, the equivalent energy measures in Table 1 below can be used. The glazing in the left column of Table 1 represents the existing glazing prior to the installation of Flutter Shutter. The middle column of the table represents the existing glazing and the Flutter Shutter transparent blind together. This is the glazing description that should be inserted into the software to allow for the Flutter Shutter transparent blind. The column on the right of this table is the shutter

option which should be adopted when using the RdSAP software whenever Flutter Shutter is installed.

Table 1. Glazing replacements to be considered equivalent to the application of Flutter Shutter

Existing glazing present at property prior to Flutter Shutter being added	The glazing to enter into the software tool if Flutter Shutter is present in order to take the impact of transparent blind into account	Shutter option to enter into the RdSAP software tool
Single Glazed	Secondary Glazing (not low-e)	Insulated Permanent Shutters
Double Glazed - pre-2002	Double Glazed - between 2002 – 2021 [1]	Insulated Permanent Shutters
Double Glazed - between 2002 - 2021 [1]	Double Glazed - post or during 2022 [1]	Insulated Permanent Shutters
Double Glazed - post or during 2022 [1]	Double Glazed - post or during 2022 [1]	Insulated Permanent Shutters
Double Glazed - unknown install date	Double Glazed – unknown install date [1]	Insulated Permanent Shutters
Triple Glazed - pre-2002	Triple Glazed - between 2002 – 2021	Insulated Permanent Shutters
Triple Glazed - between 2002 - 2021	Triple Glazed - post or during 2022	Insulated Permanent Shutters
Triple Glazed - post or during 2022	Triple Glazed - post or during 2022	Insulated Permanent Shutters
Triple Glazed - unknown install date	Triple Glazed – unknown install date	Insulated Permanent Shutters

Source: Elmhurst Energy

[1] As a general rule, pre-2002 double glazing (or double glazing of unknown install date) is likely to be of high emissivity and post-2002 double glazing is likely to be of low emissivity.

The age bands in the above table apply to England. For other parts of the UK, the age bands might differ slightly, which is due to the different years that the relevant building regulations were introduced in different parts of UK.