

EGOLF RECOMMENDATION 010-2017

Subject of Agreement	SBI test for non flat products
Related test standard	EN 13823
Date of issue	2017-03-10
Reference original query	Helpdesk 2016-02
Previous publication number (if applicable)	N623rev2
Keywords (max. 20)	non flat product, sandwich panel, reshaping

Problem

For curved, domed, and generally non-flat products (e.g. curved sandwich panels), the SBI test could be carried out according to clause 5.2.2.h of the EN 13823:2002.

But, when the "30% rule" cannot be fulfilled, we propose to test a flat product of the same material and with the same thickness.

There are other specific items on plastic roof lights (EN 1873) or flexible air ducts, but it's better to use always the same interpretation of clause 5.2.2 h) for « **Non-flat products may be reshaped** »

Recommendation

For the purpose of this document the following terms and definitions apply.

non –flat product: a non-flat product could be a product with an irregular surface (wavy, with holes, etc.) that lies on a plane parallel to the backing board or a curved product such as curved sandwich panels, dome roof lights. Air ducts, pipes, chimneys and other products with a circular/oval cross-section are excluded from the definition of non-flat products, since there are a lot of resolutions and standards that explain how to test in the SBI (e.g. as they are, if the overall diameter is smaller than 200 mm, or as flat product if greater);

re-shape: flatten the product by plastic deformation or modify the original product edge, to extend part of the specimen over the U-profile, in order to have no more than 30 % of a representative area of 250 mm by 250 mm of the exposed surface area with more than 10 mm behind the vertical plane through the rear side of the U-profile. This modification may be done by the manufacturer or by the laboratory. As alternative, when this requirement cannot be fulfilled anyway (e.g. the part extending over the U-Profile is greater than 40 mm), or when the shape of the product does not allow to mount the specimen in the SBI (e.g. curved panels) an identical flat version, provided by the manufacturer, may be used as test specimen;

representative area of 250 mm by 250 mm of the exposed surface: projected area of 250 mm by 250 mm of the tested product in the most critical case. The specimen shall be cut in the middle of the most distant area from the U- Profile, as shown in figure 1, and mounted in the SBI in order to show the greatest exposed surface, with no more than 30 % of area (e.g. 75 mmx 250 mm) with more than 10 mm behind the vertical plane through the rear side of the U-profile, in any area of the wings.

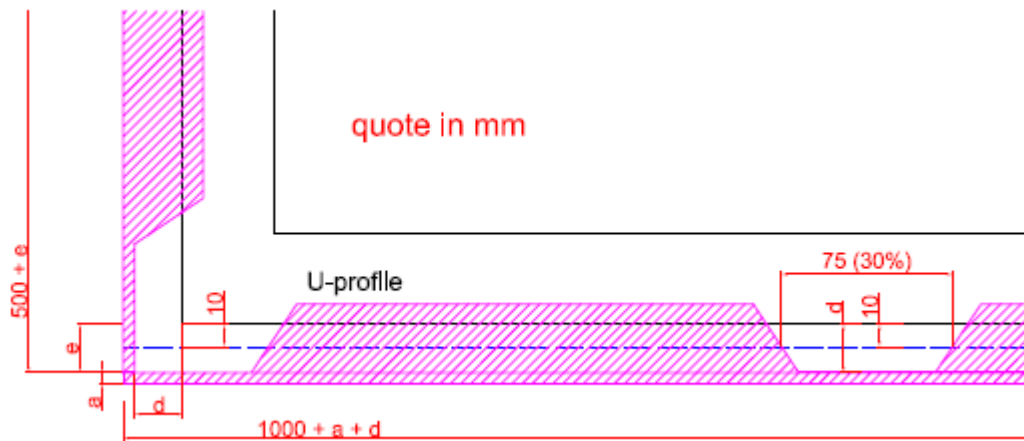


Figure 1: e.g. cutting of a corrugated panel (view from the top).

The long wing shall have the following dimension $1000 \text{ mm} + a$ (minimum thickness of the product) $+ d$ (maximum distance from the U-profile to the product). The Short wing shall have the following dimension $500 \text{ mm} + e$ (distance from the U-profile to the long wing with $e \leq d$)

The non-flat product may be reshaped and tested in “normal” position, against the U-Profile at the bottom and/or partly extend over the U-profile to the side of the burner in order to fulfil the requirement. For this second alternative, it's important to take care of protecting the lower edge of the product that extends over the U profile, in order to avoid the flame reaching the rear side of the product. A metal flashing could be used in order to cover the product 20 mm from the top edge of the U profile, as shown in photo 1.



Photo 1

When the product extends over the U-Profile, also the upper edge shall be modified in order to fit in the SBI, and it could be done by reducing the overall length of the specimen (from 1500 mm to 1480 mm) or by reshaping the upper edge as the lower. The part extends over the U-Profile could lead to an unexpected chimney effect, therefore only the upper edge, from the calcium silicate, shall be covered (fig. 2 and photo 2,3) by means of an aluminium tape, mineral wool or other inorganic materials. The way used to cover and protect the specimen shall be described in the test report.

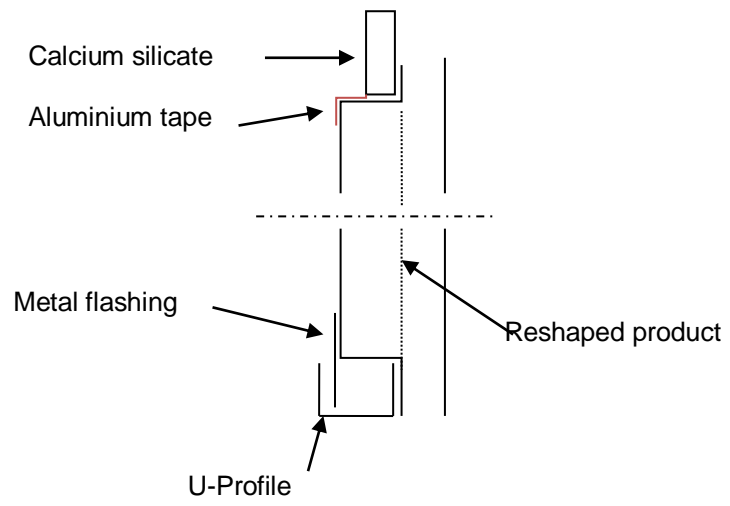


Figure 2: Cut-back of a non-flat product over the U profile



Photo 2: upper part of the corner



Photo 3