



**SLOVENSKI STANDARD**  
**SIST EN 845-1:2013/kFprA1:2015**  
**01-december-2015**

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**Specifikacija za dodatne komponente zidovja - 1. del: Vezna stremena, sidrni trakovi, obešala in konzole**

Specification for ancillary components for masonry - Part 1: Wall ties, tension straps, hangers and brackets

Festlegungen für Ergänzungsbauteile für Mauerwerk - Teil 1: Maueranker, Zugbänder, Auflager und Konsolen

Spécification pour composants accessoires de maçonnerie - Partie 1: Attaches, brides de fixation, étriers de support et consoles

**Ta slovenski standard je istoveten z: EN 845-1:2013/FprA1:2015**

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**ICS:**

91.060.10      Stene. Predelne stene.      Walls. Partitions. Facades  
Fasade

91.080.30      Zidane konstrukcije      Masonry

**SIST EN 845-1:2013/kFprA1:2015      en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**FINAL DRAFT**  
**EN 845-1:2013**

**FprA1**

October 2015

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ICS 91.080.30

English Version

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maçonnerie - Partie 1: Attaches, brides de fixation,  
étriers de support et consoles

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This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 125.

This draft amendment A1, if approved, will modify the European Standard EN 845-1:2013. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **European foreword**

This document (EN 845-1:2013/FprA1:2015) has been prepared by Technical Committee CEN/TC 125 “Masonry”, the secretariat of which is held by BSI.

This document is currently submitted to the Unique Acceptance Procedure.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

## EN 845-1:2013/FprA1:2015 (E)

**1 Modification to Table 1**

Replace the existing Table 1 with the new one.

**"Table 1 — Information to be provided**

Information reference number	Information to be supplied <sup>a</sup>	Cavity wall ties	Shear ties	Slip ties	Tension straps	Joist hangers	Brackets
1	Material/coating specification in accordance with Table A.1 and steel grade relevant to product type.	✓	✓	✓	✓	✓	✓
2	Dimensions in accordance with 5.2 in mm	✓	✓	✓	✓	✓	✓
3	Declared minimum embedment length in mm	✓	✓	✓	-	✓	
4	Declared value of tensile load capacity in N and failure mode	✓	✓	-	✓	-	-
5	Declared value of compressive load capacity in N and failure mode	✓	✓	-	-	-	-
6	Declared value of shear load capacity and failure mode in N	-	✓	✓	-	-	-
7	Declared value of vertical load capacity in N and failure mode	-	-	-	-	✓	✓
8	Declared mean displacement/deflection in mm	✓	✓	✓	✓	✓	✓
9	Whether the component is symmetrical or asymmetrical	✓	✓	✓	✓	-	-
10	Whether the component is slope-tolerant, and if it is, the range of difference in level from the outer leaf down to the inner leaf, over which it may be used in mm	✓	-	-	-	-	-
11	Whether the component is movement tolerant together with the maximum permissible movement range in mm	✓		-	-	-	-
12	Whether a component is intended to be resistant to water crossing the cavity	✓					
13	Specification for use, including limiting requirements on compressive strength and types of masonry units and mortars, the type, size, number and location of any fixings and any particular assembly or installation instructions	✓	✓	✓	✓	✓	✓
14	Product identity (see Clause 7 c))	✓	✓	✓	✓	✓	✓
15	Minimum mortar joint thickness in mm for which the component is suitable (where relevant)	✓	✓	✓	✓	✓	-
16	The specification of any fixing devices not provided by the manufacturer and not packaged with the product	✓	✓	✓	✓	✓	✓

<sup>a</sup> Additional information may include sound attenuation, thermal characteristics and instructions regarding safety during installation.

✓ To be provided

- Not required

"

## 2 Modification to Clause 8

*Delete Clause 8 entirely and replace it with the following:*

### **"8 Assessment and verification of constancy of performance - AVCP**

#### **8.1 General**

The compliance of wall ties, tension straps, hangers and brackets with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

- determination of the product type;
- factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performance(s).

NOTE The assignment of tasks to the notified body(ies) and the manufacturer is shown in Table ZA.2.

#### **8.2 Type testing**

##### **8.2.1. General**

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

Note: Same AVCP system means testing by an independent third party, under the responsibility of a notified product certification body

For the purposes of assessment, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristic for all products within that same family

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

- at the beginning of the production of a new or modified wall tie, tension strap, hanger and bracket (unless a member of the same product range), or
- at the beginning of a new or modified method of production (where this may affect the stated properties);

or

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- they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the wall tie, tension strap, hanger and bracket design, in the raw material or in the supplier of the components, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of assessment methods of other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the wall tie, tension strap, hanger and bracket manufacturer to ensure that the wall tie, tension strap, hanger and bracket as a whole is correctly manufactured and its component products have the declared performance values.

**8.2.2 Test samples, testing and compliance criteria**

The minimum sample size for a single test shall be as given in Table 2 and shall be drawn at random. For initial type testing, the batch from which the sample is drawn shall be of a size of at least 100 times the number of specimens taken. Pre-production samples may be used for initial type tests where it is possible to demonstrate that the characteristics of performance are representative of products from the full production process.

**Table 2 — Sampling - Number of specimens**

<b>Product<sup>a</sup></b>	<b>Minimum number per single test</b>
Wall ties designed to link two leaves of a cavity wall or cladding to a frame	10 <sup>a,b</sup>
Shear ties	10 <sup>b</sup>
Slip ties	10 <sup>b</sup>
Joist hangers	5
Brackets	5
Tension-straps	5 per end
<sup>a</sup> For testing organic coatings, see sampling requirements of EN 846-13. <sup>b</sup> These quantities will be doubled where both ends of asymmetrical wall ties are tested separately.	

In the event of the need to check the compliance of a lot or consignment of a product supplied to site or installed, a sample shall be taken at random from the lot or consignment and tested. The sample sizes shall be not less than those given in Table 2.



### 8.2.3 Test reports

The results of the determination of the product type shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the wall tie, tension strap, hanger and bracket to which they relate.

### 8.2.4 Shared other party results

NOTE The sharing of other party results is in principle applicable to all systems of assessment and evaluation of constancy of performance.

A manufacturer may use the results of the product type determination obtained by someone else (e.g. by another manufacturer, as a common service to manufacturers, or by a product developer), to justify his own declaration of performance regarding a product that is manufactured according to the same design (e.g. dimensions) and with raw materials, constituents and manufacturing methods of the same kind, provided that:

- the results are known to be valid for products with the same essential characteristics relevant for the product performance;
- in addition to any information essential for confirming that the product has such same performances related to specific essential characteristics, the other party who has carried out the determination of the product type concerned or has had it carried out, has expressly accepted<sup>1</sup> to transmit to the manufacturer the results and the test report to be used for the latter's product type determination, as well as information regarding production facilities and the production control process that can be taken into account for FPC;
- the manufacturer using other party results accepts to remain responsible for the product having the declared performances and he also:
  - ensures that the product has the same characteristics relevant for performance as the one that has been subjected to the determination of the product type, and that there are no significant differences with regard to production facilities and the production control process compared to that used for the product that was subjected to the determination of the product type; and
  - keeps available a copy of the determination of the product type report that also contains the information needed for verifying that the product is manufactured according to the same design and with raw materials, constituents and manufacturing methods of the same kind.

## 8.3 Factory production control (FPC)

### 8.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the essential characteristics.

The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures.

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This factory production control system documentation shall ensure a common understanding of the evaluation of the constancy of performance and enable the achievement of the required product performances and the effective operation of the production control system to be checked. Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the compliance of the product with the declared performances of the essential characteristics.

In case the manufacturer has used shared product type results, the FPC shall also include the appropriate documentation as foreseen in 8.2.4.

**8.3.2 Requirements****8.3.2.1 General**

The manufacturer is responsible for organizing the effective implementation of the FPC system in line with the content of this product standard. Tasks and responsibilities in the production control organization shall be documented and this documentation shall be kept up-to-date.

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product constancy, shall be defined. This applies in particular to personnel that need to initiate actions preventing product non-constancies from occurring, actions in case of non-constancies and to identify and register product constancy problems.

Personnel performing work affecting the constancy of performance of the product shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

In each factory the manufacturer may delegate the action to a person having the necessary authority to:

- identify procedures to demonstrate constancy of performance of the product at appropriate stages;
- identify and record any instance of non-constancy;
- identify procedures to correct instances of non-constancy.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control. The manufacturer's documentation and procedures should be appropriate to the product and manufacturing process. The FPC system should achieve an appropriate level of confidence in the constancy of performance of the product. This involves:

- the preparation of documented procedures and instructions relating to factory production control operations, in accordance with the requirements of the technical specification to which reference is made;
- the effective implementation of these procedures and instructions;
- the recording of these operations and their results;
- the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the FPC to rectify the cause of non-constancy of performance.

Where subcontracting takes place, the manufacturer shall retain the overall control of the product and ensure that he receives all the information that is necessary to fulfil his responsibilities according to this European Standard.