



**SLOVENSKI STANDARD**  
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**Specifikacija za dodatne komponente zidovja - 3. del: Jeklene mreže za armiranje  
naležnih reg**

Specification for ancillary components for masonry - Part 3: Bed joint reinforcement of  
steel meshwork

Festlegungen für Ergänzungsbauteile für Mauerwerk - Teil 3: Lagerfugenbewehrung aus  
Stahl

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EUROPEAN STANDARD  
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**prEN 845-3**

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English Version

## Specification for ancillary components for masonry - Part 3: Bed joint reinforcement of steel meshwork

Festlegungen für Ergänzungsbauteile für Mauerwerk - Teil  
3: Lagerfugenbewehrung aus Stahl

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 125.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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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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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (prEN 845-3:2010) 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 CEN Enquiry.

This document will supersede EN 845-3:2003+A1:2008.

This European standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of the EU Construction Products Directive (89/106/EEC).

For relationship with EU Directives, see informative Annex ZA which is an integral part of this standard.

In this European Standard the Annex A is normative.

This Part has been modified, including the introduction of additional requirements, taking into account the detailed answer by CEN/TC 125 to EC mandate M116 for masonry as well as details of the relationship of this new harmonized European standard with the EU Directives.

EN 845 “*Specification for ancillary components for masonry*” consists of the following Parts:

- *Part 1: Wall ties, tension straps, hangers and brackets.*  
[oSIST prEN 845-3:2010](https://standards.iteh.ai/catalog/standards/sist/365a8d10-adbe-411e-aa00-8b6be4bcda44/osist-pren-845-3-2010)
- *Part 2: Lintels.* <https://standards.iteh.ai/catalog/standards/sist/365a8d10-adbe-411e-aa00-8b6be4bcda44/osist-pren-845-3-2010>
- *Part 3: Bed joint reinforcement of steel meshwork.*

**prEN 845-3:2010 (E)****1 Scope**

This European Standard specifies the requirements for masonry bed joint reinforcement for structural use (see 5.2.1) and for non-structural use (see 5.2.2).

Where products are intended for use in cavity wall construction, this European Standard covers only the performance of the meshwork as reinforcement in bed joints and not its performance as wall ties across the cavity.

This European Standard is not applicable to:

- a) products in the form of individual bars or rods;
- b) products formed from materials other than specified grades of austenitic stainless steel or zinc pre-coated steel sheet or zinc coated steel wire with or without organic coating.

NOTE Annex ZA refers only to welded wire meshwork intended for structural use for structural use referred to in 5.2.1 as there are no known regulated requirements for products of this family for non structural use.

**2 Normative reference**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

<https://standards.iteh.ai/catalog/standards/sist/365a8d10-adbe-411e-aa00-8b6be4bcda44/osist-pren-845-3-2010>

EN 846-2, *Methods of test for ancillary components for masonry — Part 2: Determination of bond strength of prefabricated bed joint reinforcement in mortar joints.*

EN 846-3, *Methods of test for ancillary components for masonry — Part 3: Determination of shear load capacity of welds of prefabricated bed joint reinforcement.*

EN 10020, *Definition and classification of grades of steel.*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels.*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes.*

EN 10088-3, *Stainless steels — Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes.*

EN 10143, *Continuously hot-dip coated steel sheet and strip — Tolerances on dimensions and shape.*

EN 10244-1, *Steel wire and wire products-Non-ferrous metallic coatings on steel wire — Part 1: General principles.*

EN 10244-2, *Steel wire and wire products-Non-ferrous metallic coatings on steel wire — Part 2: Zinc and zinc alloy coatings.*

EN 10245-1, *Steel wire and wire products — Organic coatings on steel wire — Part 1: General rules.*

EN 10245-2, *Steel wire and wire products — Organic coatings on steel wire — Part 2: PVC finished wire.*

EN 10245-3, *Steel wire and wire products — Organic coatings on steel wire — Part 3: PE coated wire.*

EN 10326, *Continuously hot-dip coated strip and sheet of structural steels — Technical delivery conditions.*

EN 10327, *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming — Technical delivery conditions*

EN ISO 15630–1, *Steel for the reinforcement and prestressing of concrete — Test methods — Part 1: Reinforcing bars, wire rod and wire*

EN ISO 15630–2, *Steel for the reinforcement and prestressing of concrete — Test methods — Part 2: Welded fabric*

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 9513, *Metallic materials — Calibration of extensometers used in uniaxial testing*

### 3 Terms, definitions and symbols

#### 3.1 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

##### 3.1.1

##### **bed joint**

mortar layer between the bed faces of masonry units

##### 3.1.2

##### **bed joint reinforcement**

steel reinforcement that is prefabricated for building into a bed joint

##### 3.1.3

##### **bond strength**

tensile load that can be resisted by a specified length of reinforcement in a masonry bed joint

##### 3.1.4

##### **characteristic yield strength**

the value of the yield strength above which 95 % of all the individual test results occur

##### 3.1.5

##### **cross-wires**

wires which connect longitudinal wires

##### 3.1.6

##### **declared value**

value for a product property, determined in accordance with this standard, that a manufacturer is confident of achieving bearing in mind the variability of the manufacturing process

##### 3.1.7

##### **element**

complete length of bed joint reinforcement either in straight cut lengths or in a roll

**prEN 845-3:2010 (E)****3.1.8****lap length**

minimum length of a piece of bed joint reinforcement running parallel with the next piece in order to maintain the full effectiveness of the reinforcement in the masonry bed joint

**3.1.9****longitudinal wire**

wire placed parallel to the length of the masonry

**3.1.10****meshwork**

network created with welded or woven wires or as a result of expanding a strip with a series of parallel slits

**3.1.11****profile height**

maximum overall height (distance between the upper and lower surfaces at right angles to the length and width of the joint) of the embedded portion of the bed joint reinforcement

**3.1.12****shear load capacity**

mean value for sample of product specimens of the failure loads at the junction between two wires loaded in the direction of the longitudinal axis in the plane of the bed joint reinforcement

**3.1.13****width**

overall dimension in the plane of the bed joint reinforcement measured perpendicular to the longitudinal axis

**3.1.14****wire**

longitudinal cold drawn metal of any cross-sectional shape

**3.1.15****wire size**

diameter in millimetres of a circle with an area equal to the cross-sectional area of the wire

**3.2 Symbols**

- $A_c$  is the cross-sectional area of deformed plain wire, in  $\text{mm}^2$ ;
- $A_e$  is the cross-sectional area of bed joint reinforcement, in  $\text{mm}^2$ ;
- $A_{gt}$  is the percentage total elongation at maximum force ( $F_m$ ), in %;
- $a$  is the width of the bed joint reinforcement, in mm;
- $b$  is the pitch of the cross-wire, in mm;
- $c$  is the wire size of the longitudinal wires, in mm;
- $d$  is the wire size of the cross-wires, in mm;
- $e$  is the pitch of the longitudinal wires in woven wire meshwork, in mm;
- $f$  is the aperture length of the expanded metal meshwork (centre to centre), in mm;
- $F_m$  is the maximum force in the tensile test, in N;



- $g$  is the aperture width of the expanded metal meshwork (centre to centre), in mm;
- $l_s$  is the length of a specimen of deformed plain wire or expanded metal meshwork, in mm;
- $l$  is the length of an element of bed joint reinforcement as delivered by the manufacturer, in m;
- $m$  is the mass of a specimen of deformed plain wire or expanded metal meshwork, in g;
- $\rho$  is the nominal density of the material, in kg/m<sup>3</sup>;
- $R_m$  is the tensile strength, in N/mm<sup>2</sup>;
- $R_e$  is the yield strength, in N/mm<sup>2</sup>;
- $R_{eH}$  is the upper yield strength, in N/mm<sup>2</sup>;
- $R_{p0,2}$  is the 0,2 % proof strength, non-proportional extension, in N/mm<sup>2</sup>;
- $R_{e0,5}$  is the proof strength at a total extension of 0,5 %, in N/mm<sup>2</sup>;
- $t$  is the profile height, in mm;

## 4 Materials and types of products

### 4.1 Materials

Materials for the manufacture of bed joint reinforcement and their protective coatings shall be selected from those given in Table 1. Within a product, stainless steel shall not be mixed with other types of steel.

Unless otherwise chosen by the manufacturer, the bed joint reinforcement should be tested using masonry units conforming to EN 771 with a normalized compressive strength of not greater than 5 N/mm<sup>2</sup> and general purpose mortar conforming to EN 998-2 with a compressive strength not greater than 1,5 N/mm<sup>2</sup>.

**Table 1 — Materials and corrosion protection systems for bed joint reinforcement**

Material	Specification for body material <sup>a</sup>	Coating specification				Material coating reference <sup>e</sup>
		Mass per one side <sup>b</sup> g/m <sup>2</sup>	Mass per two sides <sup>c</sup> g/m <sup>2</sup>	Thickness per side µm	Organic coating thickness mm	
Austenitic stainless steel (molybdenum chrome nickel alloys)	EN 10088	—	—	—	—	R1
Austenitic stainless steel (chrome nickel alloys)	EN 10088	—	—	—	—	R3
Zinc coated steel wire	EN 10020 with EN 10244 zinc coating	265	—	—	—	R13
Zinc coated steel wire with organic coating over all surfaces of finished component	EN 10020 with EN 10244 zinc coating and EN 10245 organic coating : Part 2 – Class 2a or 2b or Part 3- Type 3	60 <sup>f</sup>	—	—	min. 80 mean 100	R18
Zinc coated steel wire	EN 10020 with EN 10244 zinc coating	105	-	-	-	R19
Zinc coated steel wire	EN 10020 with EN 10244 zinc coating	60 <sup>f</sup>	-	-	-	R20
Zinc pre-coated steel strip or sheet	EN 10326/10327: zinc coated steel	-	275	20 <sup>d</sup>	-	R21

<sup>a</sup> Except where specified an appropriate grade of steel conforming to EN 10020 for zinc-coated products may be chosen.

<sup>b</sup> Coating weight is of zinc and is given for one side for wire and post fabrication coatings.

<sup>c</sup> Coating weight is of zinc and given for two sides for pre-galvanized sheet products. The mean one side figure will be 50 % of the two side figure but not necessarily evenly distributed.

<sup>d</sup> Coating thickness refers to the average thickness of metallic protective coating on any uncut surface of a product or any surface of a post-fabrication galvanized product.

<sup>e</sup> This number is given to allow unambiguous materials specification and gives no indication of relative performance or quality.

<sup>f</sup> On round wire before any subsequent processing.

## 4.2 Types of products

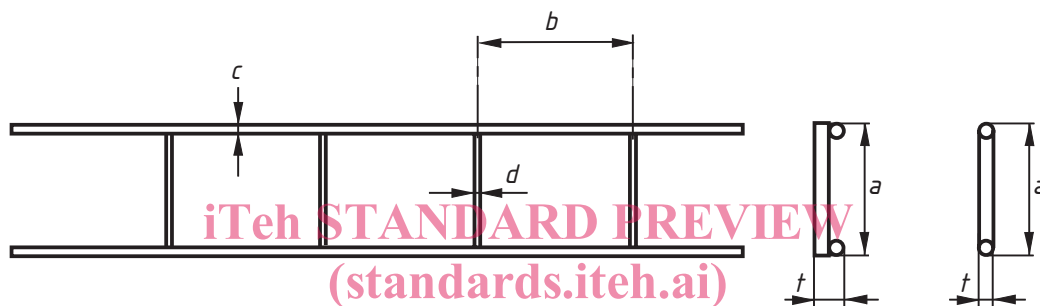
### 4.2.1 General

Welded wire meshwork and woven wire meshwork shall be manufactured from smooth, indented or ribbed wire, round or flattened wire, either of low carbon steel protected against corrosion or of a corrosion resistant steel. Expanded metal meshwork shall be manufactured from strip steel of the appropriate thickness and corrosion resistance.

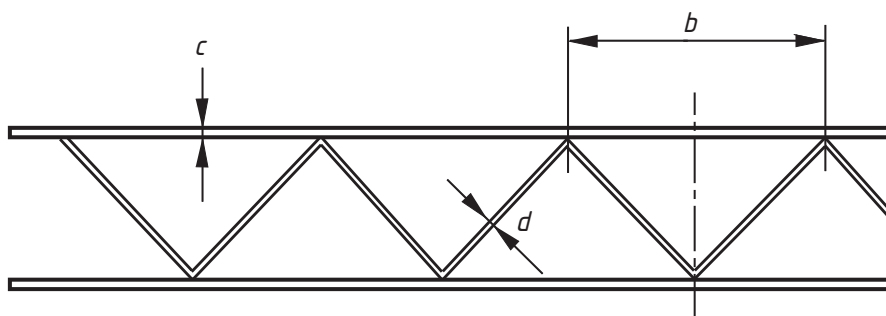
### 4.2.2 Welded wire meshwork

The reinforcing element produced shall consist of longitudinal wires welded to cross-wires (ladder type) or to a continuous wire diagonal (truss type).

NOTE Examples of products for structural applications are shown in Figures 1 and 2.



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 Figure 1 — Example of ladder type - plan and sections  
<https://standards.iteh.ai/catalog/standards/sist/845-3-2010/8b6be4bcda44/osist-pren-845-3-2010>



NOTE Cross section not shown.

Figure 2 — Example of truss type - plan

### 4.2.3 Woven wire meshwork

The meshwork shall be made by winding wire around longitudinal wires following a repetitive pattern.

NOTE An example of woven wire meshwork is given in Figure 3.