



SLOVENSKI STANDARD

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Specifikacija za dodatne komponente zidovine - 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: Lagerfugengewehrung aus Stahl

Spécifications pour composants accessoires de maçonnerie - Partie 3 : Treillis d'armature en acier pour joints horizontaux

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EUROPEAN STANDARD

EN 845-3

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

Spécifications pour composants accessoires de
maçonnerie - Partie 3 : Treillis d'armature en acier pour
joints horizontaux

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

This European Standard was approved by CEN on 21 March 2013.

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EN 845-3:2013 (E)**Foreword**

This document (EN 845-3:2013) has been prepared by Technical Committee CEN/TC 125 "Masonry", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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.

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

This part has been modified to take into account the comments made in the five-year review on the 2003 version. In view of their widespread use, austenitic stainless steel has been added to the materials that may be used.

EN 845, *Specification for ancillary components for masonry*, consists of the following parts:

- *Part 1: Wall ties, tension straps, hangers and brackets*
- *Part 2: Lintels*
- *Part 3: Bed joint reinforcement of steel meshwork*

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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, austenitic ferritic stainless steel, 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 referred to in 5.2.1 as there are no known regulated requirements for products of this family for non-structural use.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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*

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

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

EN 10088 (all parts), *Stainless steels*

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

EN 10244 (all parts), *Steel wire and wire products — Non-ferrous metallic coatings on steel wire*

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 10346, *Continuously hot-dip coated steel flat products — Technical delivery conditions*

EN ISO 15630 (all parts), *Steel for the reinforcement and prestressing of concrete — Test methods*

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3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, 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

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

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3.1.7

element

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

3.1.8

anchorage length

minimum embedment of a length of bed joint reinforcement in mortar in order to achieve the full effectiveness of the reinforcement

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 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 mm^2 ;
A_e	is the cross-sectional area of bed joint reinforcement, in mm^2 ;
A_{gt}	is the percentage total elongation at maximum force, 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;
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;
ρ	is the nominal density of the material, in kg/m^3 ;
R_m	is the tensile strength, in N/mm^2 ;
R_e	is the yield strength, in N/mm^2 ;
R_{eH}	is the upper yield strength, in N/mm^2 ;
$R_{p0,2}$	is the 0,2 % proof strength, non-proportional extension, in N/mm^2 ;
$R_{e0,5}$	is the proof strength at a total extension of 0,5 %, in N/mm^2 ;
t	is the profile height, in mm.

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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.

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

Material	Specification for body material ^a	Coating specification				Material coating reference ^e
		Mass per one side ^b g/m ²	Mass per two sides ^c g/m ²	Thickness per side ^d µm	Organic coating thickness µm	
Austenitic stainless steel (molybdenum chrome nickel alloys)	EN 10088 (all parts)	—	—	—	—	R1 ^g
Austenitic stainless steel (chrome nickel alloys)	EN 10088 (all parts)	—	—	—	—	R3 ^g
Zinc coated steel wire	EN 10244 (all parts) zinc coating	265 ^f	—	—	—	R13
Zinc coated steel wire with organic coating over all surfaces of finished component	EN 10244-2 zinc coating and EN 10245-1 organic coating: <ul style="list-style-type: none"> – Part 1 (EN 10245-1) – Part 2 (EN 10245-2) – Class 2a or 2b – Part 3 (EN 10245-3) – Class 3 	60 ^f	—	—	min. 80 mean 100	R18
Zinc coated steel wire	EN 10020 with EN 10244 (all parts) zinc coating	105 ^f	-	-	-	R19

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Zinc coated steel wire	EN 10020 with EN 10244 (all parts) zinc coating	60 ^f	-	-	-	R20
Zinc pre-coated steel strip or sheet	EN 10346: zinc coated steel	-	275	20 ^d	-	R21
Zinc coated steel wire with bonded epoxy coating over all surface of finished component	EN 10020 with EN 10244-2 zinc coating and bonded epoxy coating according to EN 10245-1, <i>Part 1 – General rules</i>	60 ^f	-	-	min. 80 mean 100	R22
Austenitic-ferritic stainless steel	EN 10088 (all parts)	-	-	-	-	R23 ^g

^a Except where specified, an appropriate grade of steel conforming to EN 10020 for zinc-coated products may be chosen.

^b Coating weight is of zinc and is given for one side for wire and post fabrication coatings.

^c Coating weight is of zinc and given for two sides for pre-galvanised (sheet products). The mean one side figure will be 50 % of the two side figure but not necessarily evenly distributed.

^d 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 galvanised product.

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

^f On round wire before any subsequent processing.

^g Treatment of stainless steels after fabrication is necessary in relation to welds etc., in order to maintain corrosion resistance of the steel.