



# SLOVENSKI STANDARD

## SIST EN 1263-1:2015

01-marec-2015

Nadomešča:  
SIST EN 1263-1:2002

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**Začasne konstrukcije za gradnjo - Varovalne mreže - 1. del: Varnostne zahteve, preskusne metode**

Temporary works equipment - Safety nets - Part 1: Safety requirements, test methods

Temporäre Konstruktionen für Bauwerke - Schutznetze (Sicherheitsnetze) - Teil 1: Sicherheitstechnische Anforderungen, Prüfverfahren

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Équipements temporaires de chantiers - Filets de sécurité - Partie 1 : Exigences de sécurité, méthodes d'essai

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**ICS:**

13.340.60	Zaščita pred padci in zdrsi	Protection against falling and slipping
91.220	Gradbena oprema	Construction equipment

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EUROPEAN STANDARD

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## Temporary works equipment - Safety nets - Part 1: Safety requirements, test methods

Équipements temporaires de chantiers - Filets de sécurité -  
Partie 1 : Exigences de sécurité, méthodes d'essai

Temporäre Konstruktionen für Bauwerke - Schutznetze  
(Sicherheitsnetze) - Teil 1: Sicherheitstechnische  
Anforderungen, Prüfverfahren

This European Standard was approved by CEN on 8 November 2014.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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**EN 1263-1:2014 (E)****Foreword**

This document (EN 1263-1:2014) has been prepared by Technical Committee CEN/TC 53 “Temporary works equipment”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by June 2015.

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 supersedes EN 1263-1:2002.

This European Standard is one of a series of standards as listed below:

- EN 1263-1, *Temporary works equipment — Safety nets — Part 1: Safety requirements, test methods*
- EN 1263-2, *Temporary works equipment — Safety nets — Part 2: Safety requirements for the erection of safety nets*

The significant changes incorporated in this revision are:

- a) replacement of Figure 4;
- b) addition of a new rope denominated “W” in Table 2;
- c) deletion of designation for nets;
- d) change of designation for ropes;
- e) complete revision of Clause 7 (test methods), incorporation of the description of a new vertical test rig and new figures for the mash samples;
- f) revision of dimensional inspection of the mesh size;
- g) replacement of Figure 9 and Figure 10 with new figures in 7.7.4.2 (interpretation of the results).

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

## Introduction

Safety nets for use in construction and other assembly work, e.g. as devices to catch falling persons during the construction of halls and bridges, in open line construction as side protection, as anti-fall devices or devices to catch falling persons on working scaffolds, as side protection for safety scaffolds at roofs and in tunnelling can be chosen as a technically suitable and economic solution to catch persons falling from a height. They serve to protect from deeper falls even when large areas in plan occur.

In contrast to being secured by personal protective equipment against falls from heights the mobility of persons working above the area protected by safety nets is not impaired during all work activity. Moreover, the use of safety nets has the advantage to catch persons falling from a height more softly than lanyards caused by large plastic deformations of the net.

Attention should be paid to the fact that the ageing sensitivity of safety nets due to exposure to UV requires that they are exposed to open air condition a limited time only and then be withdrawn from service. For the evaluation of the ageing behaviour tests have been carried out over a period between 6 months and 24 months which apply to the most commonly used materials polyamide and polypropylene. The specifications of the limit values of breaking energy are based on these tests and on drop tests with articulated dummies and test spheres. After having been subjected to respective loading by persons falling from height the safety nets should be replaced, if appropriate.

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**EN 1263-1:2014 (E)****1 Scope**

This European Standard applies to safety nets and their accessories for use in construction and assembly work to protect from deeper fall. It specifies safety requirements and test methods and is based on the performance characteristics of polypropene and polyamide fibres. Materials used in nets should have no significant reduction in mechanical properties between  $-10\text{ }^{\circ}\text{C}$  and  $+40\text{ }^{\circ}\text{C}$ .

This European Standard is not applicable to the installation of safety nets. For a European Standard covering the installation of safety nets, see EN 1263-2.

**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 1263-2:2014, *Temporary works equipment — Safety nets — Part 2: Safety requirements for the erection of safety nets*

EN ISO 1806, *Fishing nets — Determination of mesh breaking force of netting (ISO 1806)*

EN ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties (ISO 2307)*

EN ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance (ISO 4892-1)*

EN 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 7500-1)*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

**3 Symbols and terms and definitions****3.1 Symbols**

The mainly used symbols are given in Table 1.



Table 1 — Main symbols

Number	Symbol	Denomination	Unit
1	$\gamma_1$	general safety factor for production and handling of the material; $\gamma_1 = 1,5$	—
2	$\gamma_2$	specific coefficient for the deterioration due to ageing, see 7.7 or 7.8, $\gamma_2$ never less than 1 and shows at least 12 months service life	—
3	$l_M$	mesh size	mm
4	$E_A$	action value of energy for a net of class A (characteristic value)	kJ
5	$E_B$	action value of energy for a net of class B (characteristic value)	kJ
6	$E_0$	value of breaking energy under reference conditions obtained from the recorded data of a net sample in the as new state	kJ
7	$E_{12}$	calculated value of breaking energy under reference conditions of a net sample after 12 months of ageing	kJ
8	$E_6$	calculated value of breaking energy as of a net sample after six month of ageing	kJ
9	$E_{vi}$	from recorded test data calculated value of energy capacity of the mesh sample $i$ subjected to ageing adjacent to the maximum tensile force $F_{vi}$	J
10	$E_{oj}$	from recorded test data calculated value of energy capacity of the mesh sample $j$ in the as new state adjacent to the maximum tensile force $F_{vj}$	J
11	$A_{vi}$	definite integral in the interval $0 \leq \Delta v \leq \Delta v_{vi}$ obtained from the recorded data of the breaking test with the mesh sample $i$ subjected to ageing, see Figure 12	cm <sup>2</sup>
12	$A_{oj}$	definite integral in the interval $0 \leq \Delta v \leq \Delta v_{oj}$ obtained from the recorded data of the breaking test with the mesh sample $j$ in the as new state, see Figure 13	cm <sup>2</sup>
13	$F_{vi}$	recorded maximum tensile force of the mesh sample $i$ subjected to ageing	N
14	$F_{oj}$	recorded maximum tensile force of the mesh sample $j$ in the as new state	N
15	$\Delta v_{vi}$	extension at maximum tensile force $F_{vi}$ of the mesh sample $i$ ( $i = 1, \dots, 10$ ) subjected to ageing	m
16	$\Delta v_{oj}$	extension at maximum tensile force $F_{oj}$ of the mesh sample $j$ ( $j = 1, \dots, 10$ ) in the as new state	m
NOTE "as new state" means: of the same properties as a new one.			

**EN 1263-1:2014 (E)****3.2 Terms and definitions**

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

**3.2.1****mesh**

series of ropes arranged in a basic geometric pattern (either in squares or diamonds) with four knots or connecting points, forming a net

**3.2.2****net**

connection of meshes

**3.2.3****safety net**

net supported by a border rope, other supporting elements or a combination of these designed to catch persons falling from a height

**3.2.4****mesh size**

distance between two knots or connections of mesh rope measured from the centre to the centre of these connections

**3.2.5****mesh rope**

rope from which the meshes of a net are manufactured

**3.2.6****border rope**

rope which passes through each mesh at the perimeter of a net and determines the perimetric dimensions of the safety net

**3.2.7****tie rope**

rope used for securing the border rope to a suitable support

**3.2.8****coupling rope**

rope that joins two or more safety nets together

**3.2.9****test mesh**

section of mesh which is attached into the safety net and which can be removed to determine any deterioration due to ageing without impairing the performance of the net

Note 1 to entry: The test mesh should consist of at least three meshes.

**3.2.10****supporting framework**

structure to which nets are attached and which contributes to the absorption of kinetic energy in case of dynamic actions

**3.2.11****class**

classification for the net respective to energy absorption capacity and mesh size

### 3.2.12 system

assembly of safety net components, which forms an equipment to be used in accordance with the instruction manual

## 4 Classification

### 4.1 Nets

This standard specifies four classes of net with maximum mesh sizes ( $l_M$ , see Figure 6) and nominated values of energy which may act on the net ( $E_A$  and  $E_B$ ) as follows:

- Class A 1:  $E_A = 2,3$  kJ;  $l_M = 60$  mm
- Class A 2:  $E_A = 2,3$  kJ;  $l_M = 100$  mm
- Class B 1:  $E_B = 4,4$  kJ;  $l_M = 60$  mm
- Class B 2:  $E_B = 4,4$  kJ;  $l_M = 100$  mm

NOTE The above values  $E_A$  and  $E_B$  represent the characteristic values of energy and do not include the general safety factor  $\gamma$ , and not the specific coefficient  $\gamma_2$  for the deterioration due to ageing. These coefficients are described in 6.3.

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### 4.2 Safety nets

Four systems of safety net shall be identified:

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- 1) System S: Safety net with border rope (for example, see Figure 1); the smallest size shall be at least 35 m<sup>2</sup>. For rectangular safety nets the length of the shortest side shall be at least 5,0 m;

Small safety nets (less than 35 m<sup>2</sup> and 5,0 m on the shortest side) are not part of this standard and should be determined by national regulations where applicable.

- 2) System T: Safety net attached on brackets for horizontal use (for example, see Figure 2);
- 3) System U: Safety net attached to supporting framework for vertical use (for example, see Figure 3);
- 4) System V: Safety net with border rope attached to a gallow type support (for example, see Figure 4).

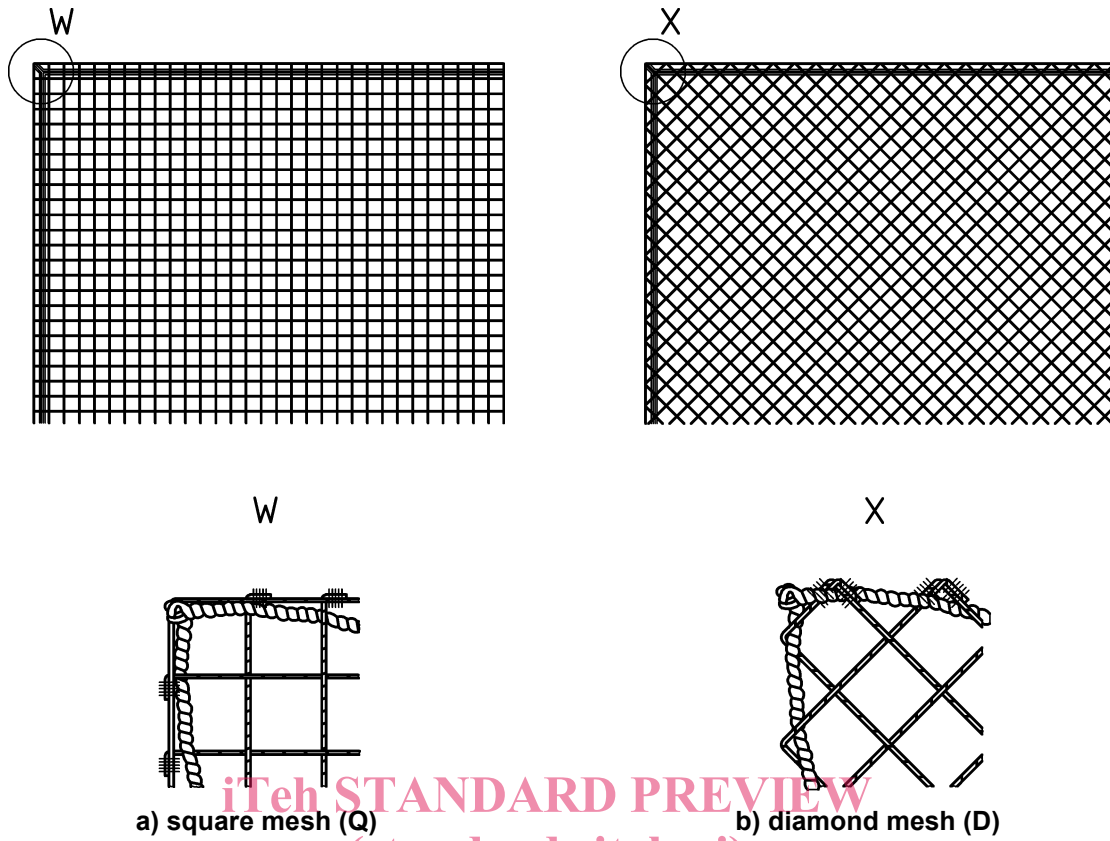


Figure 1 — Safety net System S (net with border rope)

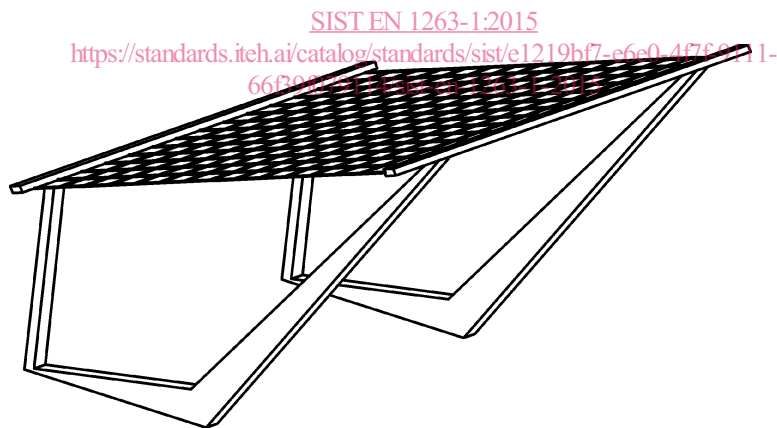


Figure 2 — Safety net System T (net attached on brackets for horizontal use)

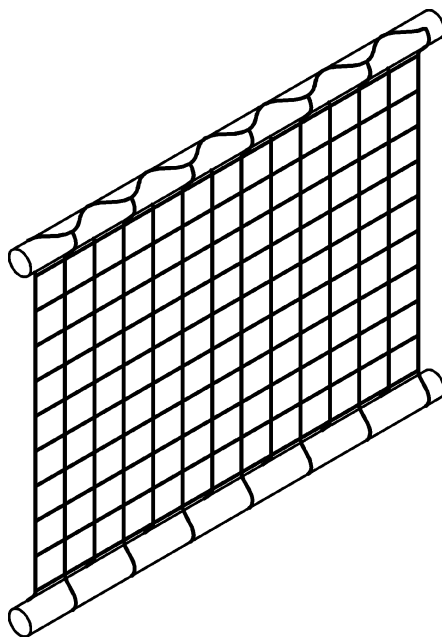


Figure 3 — Safety net system U attached to supporting framework for vertical use

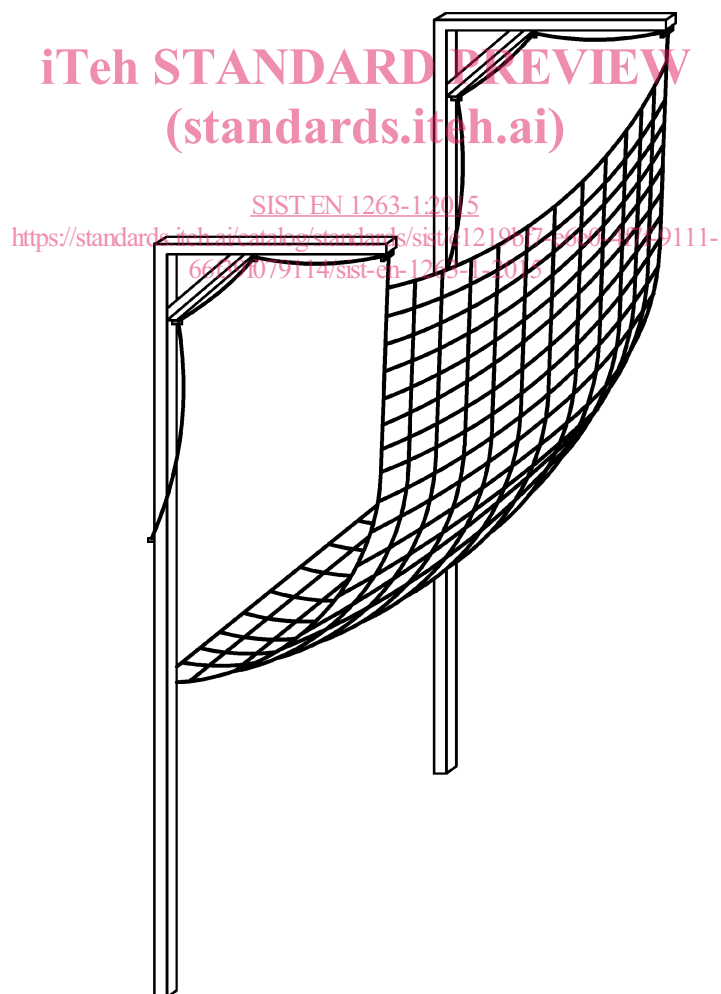


Figure 4 — Safety net System V (net with border rope attached to a gallow type support)