

Aluminium-clad steel wires for electrical purposes

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EESTI STANDARDI EESSÜNA

NATIONAL FOREWORD

Kõnelev Eesti standard EVS-EN 61232:2008 sisaldab Euroopa standardi EN 61232:1995 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 19.08.2008 kiskirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 16.06.1995.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 61232:2008 consists of the English text of the European standard EN 61232:1995.

This standard is ratified with the order of Estonian Centre for Standardisation dated 19.08.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 16.06.1995.

The standard is available from Estonian standardisation organisation.

ICS 29.060.10

Võttesnäd:

Standardite reprodutseerimis- ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
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Descriptors: Electric conductor, bare conductor, metallic wire, steel, aluminium covering, electrical property, mechanical property, test

English version

Aluminium-clad steel wires for electrical purposes
(IEC 1232:1993, modified)

Fils d'acier revêtus d'aluminium pour
usages électriques
(CEI 1232:1993, modifiée)

Aluminium-ummantelte Stahldrähte für
die Elektrotechnik
(IEC 1232:1993, modifiziert)

This European Standard was approved by CENELEC on 1994-12-06. CENELEC 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 Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 1232:1993, prepared by IEC TC 7, Bare aluminium conductors, together with common modifications prepared by the Technical Committee CENELEC TC 7, was submitted to the formal vote and was approved by CENELEC as EN 61232 on 1994-12-06.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1995-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1995-12-01

For products which have complied with the relevant national standard before 1995-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-12-01.

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annex ZA is normative and annexes A and B are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 1232:1993 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

Table 5 - Tensile and resistivity requirements of wires [before stranding]

Replace the existing table 5 by the following:

Table 5 - Tensile and resistivity requirements of wires (before stranding)

1	2	3		4	5	6	7	
Class	Type	Nominal diameter		Tensile stress	Stress at 1% extension	Resistivity at 20%	Endurance tensile stress*	
		Over	Up to and including	Min.	Min.	Max.	Min.	
20SA	A	mm	mm	MPa	MPa	nΩ.m	MPa	
		1,24	3,25	1 340	1 200	84,80 [corresponding to 20,3% IACS conductivity]	1 230	
		3,25	3,45	1 310	1 180		1 200	
		3,45	3,65	1 270	1 140		1 170	
		3,65	3,95	1 250	1 100		1 150	
		3,95	4,10	1 210	1 100		1 110	
		4,10	4,40	1 180	1 070		1 080	
		4,40	4,60	1 140	1 030		1 050	
		4,60	4,75	1 100	1 000		1 010	
		4,75	5,50	1 070	1 000		980	
		B	1,24	5,50	1 320		1 100	---
	27SA	-	2,50	5,00	1 080	800	63,86 [corresponding to 27% IACS conductivity]	990
	30SA	-	2,50	5,00	880	650	57,47 [corresponding to 30% IACS conductivity]	810
40SA	-	2,50	5,00	680	500	43,10 [corresponding to 40% IACS conductivity]	620	

* The endurance tensile stress is taken as 92 % of the tensile stress value of the wire before stranding, as specified in column 4. This requirement is used in some countries to calculate the endurance tensile stress of a stranded conductor which is the maximum, constantly held tensile stress which can be withstood for one year without fracture.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

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.

NOTE : When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
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468	1974	Method of measurement of resistivity of metallic materials	-	-

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FILS D'ACIER REVÊTUS D'ALUMINIUM POUR USAGES ÉLECTRIQUES

1 Domaine d'application

La présente Norme internationale est applicable aux fils d'acier revêtus d'aluminium pour usages électriques, nus, écrouis, de section circulaire, ayant différentes propriétés mécaniques et électriques. Elle spécifie les propriétés mécaniques et électriques des fils avant câblage dans la gamme des diamètres donnés au tableau 5.

Elle est destinée à couvrir les applications suivantes: renforcement des conducteurs en aluminium et réalisation des conducteurs câblés à partir de ces fils.

Elle ne concerne pas les fils destinés à être retréfilés.

2 Références normatives

Le document normatif suivant contient des dispositions qui, par suite de la référence qui y est faite, constitue des dispositions valables pour la présente Norme internationale. Au moment de la publication, l'édition indiquée était en vigueur. Tout document normatif est sujet à révision et les parties prenantes aux accords fondés sur la présente Norme internationale sont invitées à rechercher la possibilité d'appliquer l'édition la plus récente du document normatif indiqué ci-après. Les membres de la CEI et de l'ISO possèdent le registre des Normes internationales en vigueur.

CEI 468: 1974, *Méthode de mesure de la résistivité des matériaux métalliques*.

3 Définitions

Pour les besoins de la présente Norme internationale, les définitions suivantes s'appliquent.

3.1 fil d'acier revêtu d'aluminium: Fil rond consistant en une âme d'acier ronde recouverte d'aluminium de manière consistante et uniforme.

3.2 diamètre: Moyenne de deux mesures prises à angle droit dans la même section droite.

3.3 classe: La classe des fils d'acier revêtus d'aluminium est définie par «20SA», «27SA», «30SA» et «40SA», correspondant à leur niveau de conductivité de 20,3 %, 27 %, 30 % et 40 % IACS*.

3.4 type: Les fils d'acier revêtus d'aluminium de classe 20SA sont classés en deux types, A et B, selon leurs caractéristiques de résistance à la traction.

* IACS: International Annealed Copper Standard.

ALUMINIUM-CLAD STEEL WIRES FOR ELECTRICAL PURPOSES

1 Scope

This International Standard applies to bare, hard-drawn, round, aluminium-clad steel wires of different electrical and mechanical properties, in the diameter ranges shown in table 5, for electrical purposes, before stranding.

It is intended to cover applications, for reinforcement in aluminium conductors and for all aluminium-clad steel stranded conductors.

It does not cover the wires for redrawing purposes.

2 Normative references

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 468: 1974, *Method of measurement of resistivity of metallic materials*.

3 Definitions

For the purpose of this International Standard, the following definitions apply:

3.1 aluminium-clad steel wire: Round wire consisting of a round steel core with a uniform and continuous aluminium covering.

3.2 diameter: Mean of two measurements at right angles taken at the same cross-section.

3.3 class: Aluminium-clad steel wires defined as "20SA", "27SA", "30SA" and "40SA", corresponding to their conductivity grades of 20,3 %, 27 %, 30 % and 40 % IACS*.

3.4 type: Aluminium-clad steel wires of class 20SA are divided into two types, A and B, according to their tensile strength characteristics.

* IACS: International Annealed Copper Standard.