

**Specifications for particular types of winding wires -
Part 56: Solderable fully insulated (FIW) zero-defect
polyurethane enamelled round copper wire with nominal
conductor diameter of 0,040 mm to 1,600 mm, class 180**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60317-56:2012 sisaldab Euroopa standardi EN 60317-56:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 60317-56:2012 consists of the English text of the European standard EN 60317-56:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 29.06.2012.	Date of Availability of the European standard is 29.06.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.060.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

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

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

**Specifications for particular types of winding wires -
Part 56: Solderable fully insulated (FIW) zero-defect polyurethane
enamelled round copper wire with nominal conductor diameter
of 0,040 mm to 1,600 mm, class 180
(IEC 60317-56:2012)**

Spécifications pour types particuliers
de fils de bobinage -
Partie 56: Fil brasable de section
circulaire, isolé en continu, en cuivre
émaillé avec polyuréthane sans défaut
d'isolation électrique, avec diamètre
nominal de conducteur compris
entre 0,040 mm et 1,600 mm, classe 180
(CEI 60317-56:2012)

Technische Lieferbedingungen für
bestimmte Typen von Wickeldrähten -
Teil 56: Isolationsfehlerfreie Runddrähte
(FIW) aus Kupfer, verzinnbar, lackisoliert
mit Polyurethan, mit Nenndurchmesser
von 0,040 mm bis 1,600 mm, Klasse 180
(IEC 60317-56:2012)

This European Standard was approved by CENELEC on 2012-06-19. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 55/1311/FDIS, future edition 1 of IEC 60317-56, prepared by IEC/TC 55 "Winding wires" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60317-56:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-03-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-06-19

This standard is to be read in conjunction with EN 60317-0-7:2012.

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

Endorsement notice

The text of the International Standard IEC 60317-56:2012 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

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.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-0-7	2012	Specifications for particular types of winding wires - Part 0-7: General requirements - Fully insulated (FIW) zero-defect enamelled round copper wire with nominal conductor diameter of 0,040 mm to 1,600 mm	EN 60317-0-7	2012

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions, general notes and appearance	6
4 Dimensions	7
5 Electrical resistance	7
6 Elongation	7
7 Springiness	7
8 Flexibility and adherence.....	7
9 Heat shock	7
10 Cut-Through	7
11 Resistance to abrasion (for nominal diameters of 0,250 mm up to and including 1,000 mm).....	7
12 Resistance to solvents.....	8
13 Breakdown voltage	8
14 Continuity of insulation	8
15 Temperature index	8
16 Resistance to refrigerants.....	8
17 Solderability	9
18 Heat or solvent bonding.....	9
19 Dielectric dissipation factor.....	9
20 Resistance to transformer oil	9
21 Loss of mass	9
23 Pin-hole test.....	9
30 Packaging	9
Table 1 – Resistance to abrasion.....	8

INTRODUCTION

This part of IEC 60317 is one of a series which deals with insulated wires used for windings in electrical equipment. The series has three groups describing:

- 1) winding wires – Test methods (IEC 60851);
- 2) specifications for particular types of winding wires (IEC 60317);
- 3) packaging of winding wires (IEC 60264).

SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 56: Solderable fully insulated (FIW) zero-defect polyurethane enamelled round copper wire with nominal conductor diameter of 0,040 mm to 1,600 mm, class 180

1 Scope

This part of IEC 60317 specifies the requirements of solderable fully insulated (FIW) zero-defect enamelled round copper wire, class 180, with a single coating based on polyurethane resin, which may be modified providing it retains its chemical identity and satisfies all the required technical specifications.

The range of nominal conductor diameters of the wires covered by this standard is as follows:

- Grade of FIW 3 to FIW 08: 0,040 mm up to and including 0,067 mm;
- Grade of FIW 3 to FIW 09: 0,071 mm up to and including 0,355 mm;
- Grade of FIW 3 to FIW 08: 0,375 mm up to and including 0,475 mm;
- Grade of FIW 3 to FIW 07: 0,500 mm up to and including 0,750 mm;
- Grade of FIW 3 to FIW 06: 0,800 mm up to and including 1,000 mm;
- Grade of FIW 3 to FIW 05: 1,060 mm up to and including 1,600 mm.

The nominal conductor diameters are specified in IEC 60317-0-7.

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.

IEC 60317-0-7:2012, *Specifications for particular types of winding wires – Part 0-7: General requirements – Fully insulated (FIW) zero-defect enamelled round copper wire with nominal conductor diameter of 0,040 mm to 1,600 mm*

3 Terms and definitions, general notes and appearance

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in 3.1 of IEC 60317-0-7:2012 apply.

3.2 General notes

3.2.1 Methods of test

Subclause 3.2 of IEC 60317-0-7:2012 applies.

In case of inconsistencies between IEC 60317-0-7 and this standard, IEC 60317-56 shall prevail.