SLOVENSKI STANDARD
SIST EN 61788-6:2008

01-september-2008

Superprevodnost - 6. del: Meritve mehanskih lastnosti - Natezni preskus pri sobni temperaturi za superprevodnike iz kompozita Cu/Nb-Ti (IEC 61788-6:2008)

Superconductivity - Part 6: Mechanical properties measurement - Room temperature tensile test of Cu/Nb-Ti composite superconductors

Supraleitfähigkeit - Teil 6: Messung der mechanischen Eigenschaften - Messung der Zugfestigkeit von Cu/NbTi-Verbundsupraleitern bei Raumtemperatur

Supraconductivité - Partie 6: Mesure des propriétés mécaniques - Essai de traction à température ambiante des composites supraconducteurs de Cu/Nb-Ti

Ta slovenski standard je istoveten z: **EN 61788-6:2008**

ICS:

29.050	Superprevodnost in prevodni materiali	Superconductivity and conducting materials
77.040.10	Mehansko preskušanje kovin	Mechanical testing of metals

SIST EN 61788-6:2008 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61788-6

May 2008

ICS 29.050; 77.040.10

Supersedes EN 61788-6:2001

English version

Superconductivity - Part 6: Mechanical properties measurement - Room temperature tensile test of Cu/Nb-Ti composite superconductors (IEC 61788-6:2008)

Supraconductivité -
Partie 6: Mesure des propriétés mécaniques -
Essai de traction à température ambiante des composites supraconducteurs de Cu/Nb-Ti
(CEI 61788-6:2008)

Supraleitfähigkeit -
Teil 6: Messung der mechanischen Eigenschaften -
Messung der Zugfestigkeit von Cu/NbTi-Verbundsupraleitern bei Raumtemperatur
(IEC 61788-6:2008)

This European Standard was approved by CENELEC on 2008-04-01. 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, Bulgaria, 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 and the 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

Ref. No. EN 61788-6:2008 E

Foreword

The text of document 90/207/FDIS, future edition 2 of IEC 61788-6, prepared by IEC TC 90, Superconductivity, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61788-6 on 2008-04-01.

This European Standard supersedes EN 61788-6:2001.

EN 61788-6:2008 includes the following significant technical changes with respect to EN 61788-6:2001:

– the minimum distance between grips was changed from 100 mm to 60 mm;

– accuracy and precision statement were converted to uncertainty statements.

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)	2009-01-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2011-04-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61788-6:2008 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61788-5 NOTE Harmonized as EN 61788-5:2001 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. 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.

Publication	Year	Title	EN/HD	Year
IEC 60050-815	-[1)]	International Electrotechnical Vocabulary (IEV) - Part 815: Superconductivity	-	-
ISO 376	-[1)]	Metallic materials - Calibration of force-proving instruments used for the verification of uniaxial testing machines	EN ISO 376	2004[2)]
ISO 6892	-[1)]	Metallic materials - Tensile testing at ambient temperature	-	-
ISO 7500-1	-[1)]	Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Verification and calibration of the force-measuring system	EN ISO 7500-1	2004[2)]
ISO 9513	-[1)]	Metallic materials - Calibration of extensometers used in uniaxial testing	EN ISO 9513	2002[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

IEC 61788-6

Edition 2.0 2008-01

INTERNATIONAL STANDARD

Superconductivity –
Part 6: Mechanical properties measurement – Room temperature tensile test of Cu/Nb-Ti composite superconductors

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SUPERCONDUCTIVITY –

Part 6: Mechanical properties measurement – Room temperature tensile test of Cu/Nb-Ti composite superconductors

FOREWORD

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International Standard IEC 61788-6 has been prepared by IEC technical committee 90: Superconductivity.

This second edition cancels and replaces the first edition published in 2000. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

– the minimum distance between grips was changed from 100 mm to 60 mm;
– accuracy and precision statement were converted to uncertainty statements.

The text of this standard is based on the following documents:

FDIS	Report on voting
90/207/FDIS	90/209/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61788 series, published under the general title *Superconductivity,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this standard may be issued at a later date.

INTRODUCTION

The Cu/Nb-Ti superconductive composite wires currently in use are multifilamentary composite material with a matrix that functions as a stabilizer and supporter, in which ultrafine superconductor filaments are embedded. A Nb-40~55 mass % Ti alloy is used as the superconductive material, while oxygen-free copper and aluminium of high purity are employed as the matrix material. Commercial composite superconductors have a high current density and a small cross-sectional area. The major application of the composite superconductors is to build superconducting magnets. While the magnet is being manufactured, complicated stresses are applied to its windings and, while it is being energized, a large electromagnetic force is applied to the superconducting wires because of its high current density. It is therefore indispensable to determine the mechanical properties of the superconductive wires, of which the windings are made.