

**Takistuskeevitusseadmed. Osa 1: Projekteerimise, valmistamise ja paigaldamise ohutusnõuded**

Resistance welding equipment — Part 1: Safety requirements for the design, manufacture and the installation

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 62135-1:2008 sisaldab Euroopa standardi EN 62135-1:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 05.12.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 13.11.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 62135-1:2008 consists of the English text of the European standard EN 62135-1:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 05.12.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 13.11.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English version

**Resistance welding equipment -  
Part 1: Safety requirements for design, manufacture and installation  
(IEC 62135-1:2008)**

Matériels de soudage par résistance -  
Partie 1: Exigences de sécurité  
pour la conception,  
la fabrication et l'installation  
(CEI 62135-1:2008)

Widerstandsschweißeinrichtungen -  
Teil 1: Sicherheitsanforderungen  
für die Konstruktion,  
Herstellung und Errichtung  
(IEC 62135-1:2008)

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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 document 26/377/FDIS, future edition 1 of IEC 62135-1, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62135-1 on 2008-10-01.

This European standard supersedes EN 50063:1989 + corrigendum August 1990.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
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- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2011-10-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 62135-1:2008 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60085	NOTE Harmonized as EN 60085:2008 (not modified).
IEC 60112	NOTE Harmonized as EN 60112:2003 (not modified).
IEC 60364	NOTE Harmonized in HD 384 / HD 60364 series (modified).
IEC 60990	NOTE Harmonized as EN 60990:1999 (not modified).

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## 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60204-1 (mod)	- <sup>1)</sup>	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	EN 60204-1	2006 <sup>2)</sup>
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41 + corr. July	2007 2007
IEC 60364-6 (mod)	- <sup>1)</sup>	Low voltage electrical installations - Part 6: Verification	HD 60364-6	2007 <sup>2)</sup>
IEC 60439-1	- <sup>1)</sup>	Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies	EN 60439-1	1999 <sup>2)</sup>
IEC 60529	- <sup>1)</sup>	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 <sup>2)</sup> 1993
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	- <sup>1)</sup>	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003 <sup>2)</sup>
IEC 61140	- <sup>1)</sup>	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2002 <sup>2)</sup>
ISO 669	- <sup>1)</sup>	Resistance welding - Resistance welding equipment - Mechanical and electrical requirements	-	-
ISO 5828	- <sup>1)</sup>	Resistance welding equipment - Secondary connecting cables with terminals connected to water-cooled lugs - Dimensions and characteristics	EN ISO 5828	2001 <sup>2)</sup>
ISO 8205-1	- <sup>1)</sup>	Water-cooled secondary connection cables for resistance welding - Part 1: Dimensions and requirements for double-conductor connection cables	EN ISO 8205-1	2002 <sup>2)</sup>

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 8205-2	- <sup>1)</sup>	Water-cooled secondary connection cables for resistance welding - Part 2: Dimensions and requirements for single-conductor connection cables	EN ISO 8205-2	2002 <sup>2)</sup>
ISO 12100-1	- <sup>1)</sup>	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology	EN ISO 12100-1	2003 <sup>2)</sup>
ISO 12100-2	- <sup>1)</sup>	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles	EN ISO 12100-2	2003 <sup>2)</sup>
ISO 13849-1	- <sup>1)</sup>	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	2006 <sup>2)</sup>
ISO 14121-1	- <sup>1)</sup>	Safety of machinery - Risk assessment - Part 1: Principles	EN ISO 14121-1	2001 <sup>2)</sup>

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## RESISTANCE WELDING EQUIPMENT –

### Part 1: Safety requirements for design, manufacture and installation

#### 1 Scope

This part of IEC 62135 applies to equipment for resistance welding and allied processes and includes single and multiple welding stations which may be manually or automatically loaded and/or started.

This standard covers stationary and portable equipment.

It specifies safety requirements for design, manufacture and installation.

To comply with this standard, all safety risks involved in loading, feeding, operating and unloading the equipment, where applicable, should be assessed and the requirements of related standards should be observed.

#### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 62135. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60204-1, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-6, *Low-voltage electrical installations – Part 6: Verification*

IEC 60439-1, *Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

ISO 669, *Resistance welding – Resistance welding equipment – Mechanical and electrical requirements*

ISO 5828, *Resistance welding equipment – Secondary connecting cables with terminals connected to water-cooled lugs – Dimensions and characteristics*

ISO 8205-1, *Water-cooled secondary connection cables for resistance welding – Part 1: Dimensions and requirements for double-conductor connection cables*

ISO 8205-2, *Water-cooled secondary connection cables for resistance welding – Part 2: Dimensions and requirements for single-conductor connection cables*

ISO 12100-1, *Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology*

ISO 12100-2, *Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles*

ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

ISO 14121-1, *Safety of machinery – Risk assessment – Part 1: Principles*

### **3 Terms and definitions**

For the purposes of this document, the following terms and definitions, together with those given in ISO 669, IEC 60664-1 and IEC 60204-1, apply.

#### **3.1**

##### **equipment for resistance welding and allied processes**

equipment associated with carrying out the processes of resistance welding or allied processes consisting of, for example, power source, electrodes, tooling and associated control equipment

NOTE 1 It may be a separate unit or part of a complex machine.

NOTE 2 The term "resistance welding equipment" is used in the following text.

#### **3.2**

##### **processes allied to resistance welding**

processes carried out on machines comparable to resistance welding equipment considered as allied to resistance welding, for example, resistance brazing, soldering or heating

#### **3.3**

##### **type test**

test of one or more devices made to a given design, to check if these devices comply with the requirements of the standard concerned

[IEV 851-02-09]

#### **3.4**

##### **routine test**

test made on each individual device during or after manufacture to check if it complies with the requirements of the standard concerned or the criteria specified

[IEV 851-02-10]

#### **3.5**

##### **welding circuit**

conductive material through which the welding current is intended to flow