



NSAI
Standards

Irish Standard
I.S. EN 62135-2:2015

Resistance welding equipment - Part 2: Electromagnetic compatibility (EMC) requirements

I.S. EN 62135-2:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document is based on:

EN 62135-2:2015

Published:

2015-05-08

*This document was published
under the authority of the NSAI
and comes into effect on:*

2015-05-26

ICS number:

25.160

NOTE: If blank see CEN/CENELEC cover page

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EUROPEAN STANDARD

EN 62135-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2015

ICS 25.160

Supersedes EN 62135-2:2008

English Version

**Resistance welding equipment - Part 2: Electromagnetic
compatibility (EMC) requirements
(IEC 62135-2:2015)**

Matériels de soudage par résistance - Partie 2: Exigences
de compatibilité électromagnétique (CEM)
(IEC 62135-2:2015)

Widerstandsschweißeinrichtungen - Teil 2: Anforderungen
an die elektromagnetische Verträglichkeit (EMV)
(IEC 62135-2:2015)

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Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 26/555/FDIS, future edition 2 of IEC 62135-2, prepared by IEC/TC 26 "Electric welding" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62135-2:2015.

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) 2015-12-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-03-31

This document supersedes EN 62135-2:2008.

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 62135-2:2015 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 :

CISPR 14-1 NOTE Harmonised as EN 55014-1 (not modified).

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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here:

www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	-	International Electrotechnical Vocabulary (IEV) -- Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-851	-	International Electrotechnical Vocabulary - Part 851: Electric welding	-	-
IEC 61000-3-2	2014	Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN 61000-3-2	2014
IEC 61000-3-3	2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3	2013
IEC 61000-3-11	2000	Electromagnetic compatibility (EMC) -- Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN 61000-3-11	2000
IEC 61000-3-12	2011	Electromagnetic compatibility (EMC) -- Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase	EN 61000-3-12	2011
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) -- Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	-	-
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) -- Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	-
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	-

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IEC 61000-4-6	-	Electromagnetic compatibility (EMC) -- Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	-
IEC 61000-4-11	-	Electromagnetic compatibility (EMC) -- Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	-
IEC 61000-4-34	-	Electromagnetic compatibility (EMC) -- Part 4-34: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase	EN 61000-4-34	-
IEC 62135-1	-	Resistance welding equipment -- Part 1: Safety requirements for design, manufacture and installation	EN 62135-1	-
ISO 669	-	Resistance welding - Resistance welding equipment - Mechanical and electrical requirements	-	-
CISPR 11	-	Industrial, scientific and medical equipment -- Radio-frequency disturbance characteristics - Limits and methods of measurement - Fraction project f1: Supplement of CISPR 11 with emission requirements for Grid Connected Power Converters (GCPC)		-
CISPR 16-1-1	-	Specification for radio disturbance and immunity measuring apparatus and methods -- Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN 55016-1-1	-
CISPR 16-1-2	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurements	EN 55016-1-2	-
CISPR 16-1-4	-	Specification for radio disturbance and immunity measuring apparatus and methods -- Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements	EN 55016-1-4	-

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex I of the EC Directive 2004/108/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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IEC 62135-2

Edition 2.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Resistance welding equipment –
Part 2: Electromagnetic compatibility (EMC) requirements**

**Matériels de soudage par résistance –
Partie 2: Exigences de compatibilité électromagnétique (CEM)**



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IEC 62135-2

Edition 2.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Resistance welding equipment –
Part 2: Electromagnetic compatibility (EMC) requirements**

**Matériels de soudage par résistance –
Partie 2: Exigences de compatibilité électromagnétique (CEM)**

INTERNATIONAL
ELECTROTECHNICAL
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ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.160

ISBN 978-2-8322-2257-7

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RESISTANCE WELDING EQUIPMENT –

Part 2: Electromagnetic compatibility (EMC) requirements

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62135-2 has been prepared by IEC technical committee 26: Electric welding.

This second edition cancels and replaces the first edition published in 2007 and constitutes a technical revision.

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

- update of the applicable limits related to the updated reference to CISPR 11;
- exclusion of the use of narrow band relaxations for RF emission limits;
- update of the applicable limits for harmonics and flicker related to the updated reference to IEC 61000-3-11 and IEC 61000-3-12;
- update of the requirements for voltage dips related to the updated reference to IEC 61000-4-11 and IEC 61000-4-34;

- inclusion of symbols to indicate the RF equipment class and restrictions for use;
- inclusion of EM field immunity test for frequency from 1,4 GHz to 2,7 GHz;
- inclusion of emission limits for class B resistance welding equipment magnetic fields between 150 kHz and 30 MHz.

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

FDIS	Report on voting
26/555FDIS	26/557/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.

The list of all the parts of the IEC 62135 series, under the general title *Resistance welding equipment*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

RESISTANCE WELDING EQUIPMENT –

Part 2: Electromagnetic compatibility (EMC) requirements

1 Scope

This part of IEC 62135 is applicable to equipment for resistance welding and allied processes which are connected to mains supplies with rated voltages up to 1 000 V a.c. r.m.s. This standard does not define safety requirements.

Resistance welding equipment type tested in accordance with, and which has met the requirements of, this standard, is deemed to be in compliance for all applications.

The frequency range covered is from 0 Hz to 400 GHz.

This product EMC standard for resistance welding equipment takes precedence over all aspects of the generic standards and no additional EMC tests are required or necessary.

NOTE 1 Typical allied processes are resistance hard and soft soldering or resistance heating achieved by means comparable to resistance welding equipment.

NOTE 2 Limit values are specified for only part of the frequency range.

Resistance welding equipment are classified as class A and class B equipment.

This part of IEC 62135 specifies

- a) test methods to be used in conjunction with CISPR 11 to determine radiofrequency (RF) emission;
- b) relevant standards and test methods for harmonic current emission, voltage fluctuation and flicker.

NOTE 3 The limits in this standard cannot, however, provide full protection against interference to radio and television reception when the resistance welding equipment is used closer than 30 m to the receiving antenna(e).

NOTE 4 In special cases, when highly susceptible apparatus is being used in close proximity, additional mitigation measures are sometimes employed to further reduce the electromagnetic emissions.

This part of IEC 62135 also defines immunity requirements and test methods for continuous and transient, conducted and radiated disturbances including electrostatic discharges.

NOTE 5 These requirements do not, however, cover extreme cases which are extremely rare.

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 60050-161, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

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