



# SLOVENSKI STANDARD SIST EN 60204-31:2014

01-april-2014

---

## Varnost strojev - Električna oprema strojev - 31. del: Posebne zahteve za varnost in EMC za šivalne stroje, enote in sisteme

Safety of machinery - Electrical equipment of machines - Part 31: Particular safety and EMC requirements for sewing machines, units and systems

Sicherheit von Maschinen - Elektrische Ausrüstung von Maschinen - Teil 31: Besondere Sicherheits- und EMV-Anforderungen an Nähmaschinen, Nàheinheiten und Nàhanlagen

Sécurité des machines - Equipement électrique des machines - Partie 31: Exigences particulières de sécurité et de CEM pour machines à coudre, unités et systèmes de couture

<https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-c24a2d12c181/sist-en-60204-31-2014>

Ta slovenski standard je istoveten z: **EN 60204-31:2013**

---

### **ICS:**

|        |  |   |
|--------|--|---|
| 13.110 | Varnost strojev  | Safety of machinery   |
| 61.080 | Šivalni stroji in druga oprema za oblačilno industrijo | Sewing machines and other equipment for the clothing industry |

**SIST EN 60204-31:2014**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60204-31:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-c24a2d12c181/sist-en-60204-31-2014>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60204-31**

October 2013

ICS 13.110; 61.080

Supersedes EN 60204-31:1998

English version

**Safety of machinery -  
Electrical equipment of machines -  
Part 31: Particular safety and EMC requirements for sewing machines,  
units and systems  
(IEC 60204-31:2013)**

Sécurité des machines -  
Équipement électrique des machines -  
Partie 31: Exigences particulières de  
sécurité et de CEM pour machines à  
coudre, unités et systèmes de couture  
(CEI 60204-31:2013)

Sicherheit von Maschinen -  
Elektrische Ausrüstung von Maschinen -  
Teil 31: Besondere Sicherheits- und EMV-  
Anforderungen an Nähmaschinen,  
Näheinheiten und Nähanlagen  
(IEC 60204-31:2013)

**ITeh STANDARD PREVIEW  
(standards.iteh.ai)**

[SIST EN 60204-31:2014](https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-)

<https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d->

This European Standard was approved by CENELEC on 2013-05-28. 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, Former Yugoslav Republic of Macedonia, 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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 44/685/FDIS, future edition 4 of IEC 60204-31, prepared by IEC/TC 44 "Safety of machinery - Electrotechnical aspects" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60204-31:2013.

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) 2014-04-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-05-28

This document supersedes EN 60204-31:1998.

EN 60204-31:2013 includes the following significant technical changes with respect to EN 60204-31:1998:

- a) Alignment of the normative references;
- b) Alignment of titles and subtitles to the EN 60204-1;
- c) Revision of Annex AA to align this annex with the relevant European standards.

This European Standard is to be used in conjunction with EN 60204-1:2006 + A1:2009.

This part supplements or modifies the corresponding clauses in EN 60204-1 so as to convert that publication into the European standard dealing with requirements for the electrical equipment of sewing machines, units and systems.

Where a particular subclause of Part 1 is not mentioned in this part, that subclause applies as far as is reasonable. Where this part states "addition", "modification" or "replacement" the relevant text in Part 1 is adapted accordingly.

The annex which is additional to those in Part 1 is lettered AA.

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.

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 Directives see informative Annexes ZZA and ZZB, which are integral parts of this document.

### Endorsement notice

The text of the International Standard IEC 60204-31:2013 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 60335-2-28      NOTE   Harmonised as EN 60335-2-28.

IEC 61000-6-2:2005      NOTE   Harmonised as EN 61000-6-2:2005 (not modified).

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60204-31:2014](https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-c24a2d12c181/sist-en-60204-31-2014)

<https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-c24a2d12c181/sist-en-60204-31-2014>

## 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.

#### **Addition to Annex ZA of EN 60204-1:2006:**

| <u>Publication</u>        | <u>Year</u>  | <u>Title</u>   | <u>EN/HD</u>                           | <u>Year</u>          |
|---------------------------|--------------|--|--|----------------------|
| IEC 60204-1 (mod)<br>+ A1 | 2005<br>2008 | Safety of machinery - Electrical equipment of machines -<br>Part 1: General requirements   | EN 60204-1<br>+ corr. February<br>+ A1 | 2006<br>2010<br>2009 |
| IEC 60364-4-41            | -            | Low-voltage electrical installations -<br>Part 4-41: Protection for safety - Protection<br>against electric shock  | HD 60364-4-41                          | -                    |
| IEC 60664-1               | 2007         | Insulation coordination for equipment within<br>low-voltage systems -<br>Part 1: Principles, requirements and tests  | EN 60664-1                             | 2007                 |
| IEC 60721-3-3             | -            | Classification of environmental conditions -<br>Part 3: Classification of groups of<br>environmental parameters and their<br>severities -<br>Section 3: Stationary use at weatherprotected<br>locations  | EN 60721-3-3                           | -                    |
| IEC 60947-1<br>+ A1       | 2007<br>2010 | Low-voltage switchgear and controlgear -<br>Part 1: General rules  | EN 60947-1<br>+ A1                     | 2007<br>2011         |
| IEC 61000-3-2             | -            | Electromagnetic compatibility (EMC) -<br>Part 3-2: Limits - Limits for harmonic current<br>emissions (equipment input current $\leq$ 16 A per<br>phase)  | EN 61000-3-2                           | -                    |
| IEC 61000-3-3             | -            | Electromagnetic compatibility (EMC) -<br>Part 3-3: Limits - Limitation of voltage<br>changes, voltage fluctuations and flicker in<br>public low-voltage supply systems, for<br>equipment with rated current $\leq$ 16 A per phase<br>and not subject to conditional connection | EN 61000-3-3                           | -                    |
| IEC 61000-4-2             | -            | Electromagnetic compatibility (EMC) -<br>Part 4-2: Testing and measurement<br>techniques - Electrostatic discharge immunity<br>test  | EN 61000-4-2                           | -                    |
| IEC 61000-4-3             | -            | Electromagnetic compatibility (EMC) -<br>Part 4-3: Testing and measurement<br>techniques - Radiated, radio-frequency,<br>electromagnetic field immunity test   | EN 61000-4-3                           | -                    |
| IEC 61000-4-4             | -            | Electromagnetic compatibility (EMC) -<br>Part 4-4: Testing and measurement<br>techniques - Electrical fast transient/burst<br>immunity test  | EN 61000-4-4                           | -                    |

| <u>Publication</u>               | <u>Year</u>  | <u>Title</u>   | <u>EN/HD</u>     | <u>Year</u>  |
|----------------------------------|--------------|--|------------------|--------------|
| IEC 61000-4-5<br>+ corr. October | 2005<br>2009 | Electromagnetic compatibility (EMC) -<br>Part 4-5: Testing and measurement<br>techniques - Surge immunity test   | EN 61000-4-5     | 2006         |
| IEC 61000-4-6                    | -            | Electromagnetic compatibility (EMC) -<br>Part 4-6: Testing and measurement<br>techniques - Immunity to conducted<br>disturbances, induced by radio-frequency<br>fields | EN 61000-4-6     | -            |
| IEC 61000-4-11                   | -            | Electromagnetic compatibility (EMC) -<br>Part 4-11: Testing and measurement<br>techniques - Voltage dips, short interruptions<br>and voltage variations immunity tests | EN 61000-4-11    | -            |
| IEC 61058-1                      | -            | Switches for appliances -<br>Part 1: General requirements  | EN 61058-1       | -            |
| IEC 61558-1                      | -            | Safety of power transformers, power supplies,<br>reactors and similar products -<br>Part 1: General requirements and tests   | EN 61558-1       | -            |
| CISPR 11 (mod)<br>+ A1           | 2009<br>2010 | Industrial, scientific and medical equipment -<br>Radio-frequency disturbance characteristics -<br>Limits and methods of measurement                                   | EN 55011<br>+ A1 | 2009<br>2010 |
| ENV 50204                        | -            | Radiated electromagnetic field from digital<br>radio telephones - Immunity test  | -                | -            |

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 60204-31:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/d5de2586-e83e-47f1-bb8d-c24a2d12c181/sist-en-60204-31-2014>

## **Annex ZZA** (informative)

### **Coverage of Essential Requirements of EU Directive (2006/42/EC)**

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 only the following essential requirement out of those given in annex I of the EC Directive 2006/42/EC:

– 1.5.1

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

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

## **Annex ZZB** (informative)

### **Coverage of Essential Requirements of EU Directive (2004/108/EC)**

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.





IEC 60204-31

Edition 4.0 2013-04

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Safety of machinery – Electrical equipment of machines –  
Part 31: Particular safety and EMC requirements for sewing machines, units and  
systems**

**Sécurité des machines – Équipement électrique des machines –  
Partie 31: Exigences particulières de sécurité et de CEM pour machines à  
coudre, unités et systèmes de couture**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

T

ICS 13.110; 61.080

ISBN 978-2-83220-749-9

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

|  |    |
|--|----|
| FOREWORD.....  | 3  |
| 1 Scope.....   | 5  |
| 2 Normative references .....   | 5  |
| 3 Terms and definitions .....  | 6  |
| 4 General requirements.....  | 7  |
| 5 Incoming supply conductor terminations and devices for disconnecting and switching off ..... | 7  |
| 6 Protection against electric shock .....  | 8  |
| 7 Protection of equipment.....   | 8  |
| 8 Equipotential bonding .....  | 9  |
| 9 Control circuits and control functions .....   | 9  |
| 10 Operator interface and machine mounted control devices .....                                | 10 |
| 11 Controlgear: location, mounting and enclosures .....  | 11 |
| 12 Conductors and cables .....   | 12 |
| 13 Wiring practices.....   | 12 |
| 14 Electric motors and associated equipment.....   | 12 |
| 15 Accessories and lighting.....   | 13 |
| 16 Marking, warning signs and reference designations.....                                      | 13 |
| 17 Technical documentation.....  | 13 |
| 18 Verification .....  | 14 |
| Annex AA (normative) Electromagnetic compatibility requirements.....                           | 15 |
| Bibliography.....  | 22 |
| Figure AA.1 – Ports .....  | 15 |
| Figure AA.2 – Standard sewing unit for EMC tests .....   | 17 |
| Table AA.1 – Emission – Radiated (enclosure) and conducted (AC mains) .....                    | 18 |
| Table AA.2 – Immunity – Enclosure port .....   | 19 |
| Table AA.3 – Immunity – Ports for signal lines and data buses .....                            | 20 |
| Table AA.4 – Immunity – AC input and AC output power ports .....                               | 21 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY OF MACHINERY –  
ELECTRICAL EQUIPMENT OF MACHINES –****Part 31: Particular safety and EMC requirements  
for sewing machines, units and systems**

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60204-31 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

This fourth edition cancels and replaces the third edition, published in 2001. This edition constitutes a technical revision.

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

- a) Alignment of the normative references;
- b) Alignment of titles and subtitles to the IEC 60204-1;
- c) Revision of Annex AA to align this annex with the relevant IEC standards.

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

|             |                  |
|-------------|------------------|
| FDIS        | Report on voting |
| 44/685/FDIS | 44/687/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.

This International Standard is to be used in conjunction with IEC 60204-1:2005 and its Amendment 1:2008.

This part supplements or modifies the corresponding clauses in IEC 60204-1 so as to convert that publication into the IEC standard dealing with requirements for the electrical equipment of sewing machines, units and systems.

Where a particular subclause of Part 1 is not mentioned in this part, that subclause applies as far as is reasonable. Where this part states "addition", "modification" or "replacement" the relevant text in Part 1 is adapted accordingly.

The Annex which is additional to those in Part 1 is lettered AA.

A list of all the parts in the IEC 60204 series, published under the general title *Safety of machinery – Electrical equipment of machines* 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 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.