

# TECHNICAL SPECIFICATION

**Safety of machinery – Electrical equipment of machines –  
Part 34: Requirements for machine tools**



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# TECHNICAL SPECIFICATION

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**Safety of machinery – Electrical equipment of machines –  
Part 34: Requirements for machine tools**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY OF MACHINERY –  
ELECTRICAL EQUIPMENT OF MACHINES –****Part 34 : Requirements for machine tools**

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 60204-34, which is a technical specification, has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
44/735/DTS	44/748/RVC

Full information on the voting for the approval of this technical specification 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 part of IEC 60204 is intended to be used in conjunction with IEC 60204-1:—<sup>1</sup>.

This part supplements or modifies the corresponding clauses in IEC 60204-1.

The numbering system is based on IEC 60204-31:2013. Where a particular clause or subclause of Part 1 is not mentioned in this Part 34, that clause or subclause applies as far as is reasonable. Where this part states "addition", "modification" or "replacement", the relevant text, notes, figures, and tables in Part 1 are to be adapted accordingly.

Annexes which are additional to those in part 1 are lettered AA, BB, CC, DD, EE and FF.

A list of all 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.

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

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<sup>1</sup> Stage at the time of publication: IEC/FDIS 60204-1:2016.

## SAFETY OF MACHINERY – ELECTRICAL EQUIPMENT OF MACHINES –

### Part 34 : Requirements for machine tools

#### 1 Scope

*This clause of IEC 60204-1 is applicable except as follows:*

*Replacement:*

This part of IEC 60204 applies to electrical, electronic and programmable electronic equipment and systems of machine tools not portable by hand while working, including a group of machines working together in a co-ordinated manner.

In this part of IEC 60204, machine tools means all machines for the working of metal, wood, plastics and stone, operating by forming or removal of material. The following list includes examples of machine tools but not limited to:

- Turning machines (i.e. manually controlled turning machines without numerical control, manually controlled turning machines with limited numerically controlled capability, numerically controlled turning machines and turning centres, single- or multi-spindle automatic turning machines);
- Milling machines(including boring machines);
- Machining centres;
- Planing machines;
- Drilling machines;
- Grinding machines;
- Laser processing machines;
- Electro Discharge Machines(EDM) (except their power circuit for discharge);
- Sawing machines for cold metal;
- Guillotine shears;
- Hydraulic press brakes;
- Mechanical (or hydraulic, pneumatic) presses.

Power circuits where electrical energy is directly used as a working tool are excluded from this part of IEC 60204.

In addition to this document, the applicable C-standard for the machines listed in the examples can be referred for more information.

#### 2 Normative references

*This clause of IEC 60204-1 is applicable except as follows:*

*Additional references:*

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



IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 60825-4, *Safety of laser products – Part 4: Laser guards*

ISO 14119, *Safety of machinery – Interlocking devices associated with guards – Principles for design and selection*

### 3 Terms and definitions

*This clause of IEC 60204-1 is applicable except as follows:*

*Additional definitions:*

#### 3.101

##### **machine tool**

##### **MT**

machine, not portable as a whole during its operation, driven by an external electrical energy source and intended to work material in the solid state, with material removal (cutting processes as turning, milling, grinding, drilling, machining...) or without material removal (forming processes such as bending, forging, etc.)

Note 1 to entry: The machine tool is normally equipped with a power supply, an electrical and electronic assembly for power and control and one or more power drive systems for the movement of elements or parts.

[SOURCE: EN 50370-1:2005, 3.1, modified — “typically metal products” has been changed to “work material”. The last sentence has been changed to NOTE 1 to entry.]

#### 3.102

##### **numerical control**

##### **NC**

automatic control of process performed by a device that makes use of numerical data introduced while the operation is in progress

[SOURCE: ISO 2806:1994, 2.1.1]

#### 3.103

##### **computerized numerical control**

##### **CNC**

realization of NC(3.102) using a computer to control the machine functions

[SOURCE: ISO 2806:1994, 2.1.2]

#### 3.104

##### **safety integrity level**

##### **SIL**

discrete level (one out of a possible three), corresponding to a range of safety integrity values, where safety integrity level 3 has the highest level of safety integrity and safety integrity level 1 has the lowest

[SOURCE: IEC 61508-4:2010, 3.5.6, modified — The words "one out of a possible four" have been replaced by "one out of a possible three" and the words "safety integrity level 4" have been replaced by "safety integrity level 3".]

#### 3.105

##### **type test**

test made on one or more equipment representative of the production in order to confirm that the design fulfils certain specifications