

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Safety of machinery – Electrical equipment of machines –
Part 1: General requirements**

**Sécurité des machines – Equipement électrique des machines –
Partie 1: Règles générales**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF MACHINERY – ELECTRICAL EQUIPMENT OF MACHINES –

Part 1: General requirements

FOREWORD

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International Standard IEC 60204-1 has been prepared by technical committee 44: Safety of machinery – Electrotechnical aspects.

This edition constitutes a technical revision. It incorporates material from the fourth edition, amended to provide general requirements for machines, including mobile machines and complex (for example large) machine installations.

This consolidated version of IEC 60204-1 consists of the fifth edition (2005) [documents 44/494/FDIS and 44/502/RVD] and its amendment 1 (2008) [documents 44/575/CDV and 44/580/RVC].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 5.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

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

The following differences exist in some countries:

- 4.3.1: The voltage characteristics of electricity supplied by public distribution systems in Europe are given in EN 50160:1999.
- 5.1: Exception is not allowed (USA).
- 5.1: TN-C systems are not permitted in low-voltage installations in buildings (Norway).
- 5.2: Terminals for the connection of the protective earthing conductors may be identified by the colour green, the letters “G” or “GR” or “GRD” or “GND”, or the word “ground” or “grounding”, or with the graphical symbol IEC 60417-5019 (DB: 2002-10) or any combination (USA).
- 6.3.3 b), 13.4.5 b), 18.2.1: TT power systems are not allowed (USA).
- 7.2.3: Disconnection of the neutral conductor is mandatory in a TN-S system (France and Norway).
- 7.2.3: Third paragraph: distribution of a neutral conductor with an IT system is not allowed (USA and Norway).
- 9.1.2: Maximum nominal a.c. control circuit voltage is 120 V (USA).
- 12.2: Only stranded conductors are allowed on machines, except for 0,2 mm² solid conductors within enclosures (USA).
- 12.2: The smallest power circuit conductor allowed on machines is 0,82 mm² (AWG 18) in multiconductor cables or in enclosures (USA).
- Table 5: Cross-sectional area is specified in ANSI/NFPA 79 using American Wire Gauge (AWG) (USA). See Annex G.
- 13.2.2: For the protective conductor, the colour identification GREEN (with or without YELLOW stripes) is used as equivalent to the bicolour combination GREEN-AND-YELLOW (USA and Canada).
- 13.2.3: The colour identification WHITE or GREY is used for earthed neutral conductors instead of the colour identification BLUE (USA and Canada).
- 15.2.2: First paragraph: Maximum value between conductors 150 V (USA).
- 15.2.2: 2nd paragraph, 5th bullet: The full load current rating of lighting circuits does not exceed 15 A (USA).
- 16.4: Nameplate marking requirements (USA).

IEC 60204 consists of the following parts, under the general title *Safety of machinery – Electrical equipment of machines*:

- Part 1: General requirements
- Part 11: Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV
- Part 31: Particular safety and EMC requirements for sewing machines, units and systems
- Part 32: Requirements for hoisting machines
- Part 33: Particular requirements for semiconductor manufacturing equipment¹

¹ Under consideration.