

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Safety of machinery – Electrical equipment of machines –  
Part 32: Requirements for hoisting machines**

**Sécurité des machines – Équipement électrique des machines –  
Partie 32: Exigences pour les appareils de levage**

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## CONTENTS

FOREWORD.....	11
INTRODUCTION.....	14
1 Scope.....	17
2 Normative references .....	18
3 Terms, definitions and abbreviated terms .....	21
3.1 Terms and definitions.....	21
3.2 Abbreviated terms.....	31
4 General requirements .....	32
4.1 General considerations .....	32
4.2 Selection of equipment .....	33
4.2.1 General .....	33
4.2.2 Selection of power contactors.....	33
4.2.3 Switchgear .....	33
4.2.4 Selection of PDS .....	33
4.3 Electrical supply.....	33
4.3.1 General requirements .....	33
4.3.2 AC supplies .....	34
4.3.3 DC supplies.....	34
4.3.4 Special supply systems.....	34
4.4 Physical environment and operating conditions.....	34
4.4.1 General .....	34
4.4.2 Electromagnetic compatibility (EMC) .....	35
4.4.3 Ambient air temperature .....	35
4.4.4 Humidity .....	35
4.4.5 Altitude .....	35
4.4.6 Contaminants .....	35
4.4.7 Ionizing and non-ionizing radiation.....	35
4.4.8 Vibration, shock, and bump .....	36
4.5 Transportation and storage .....	36
4.6 Provisions for handling.....	36
4.7 Installation .....	36
5 Incoming supply conductor terminations and devices for disconnecting and switching off .....	36
5.1 Incoming supply conductor terminations.....	36
5.2 Terminal for connection of the external protective conductor.....	37
5.3 Supply disconnecting and switching devices .....	37
5.3.1 General .....	37
5.3.2 Type .....	37
5.3.3 Requirements .....	39
5.3.4 Operating means of the supply disconnecting device .....	39
5.3.5 Crane-supply-switch .....	40
5.3.6 Crane-disconnector .....	41
5.3.7 Crane-switch .....	42
5.3.8 Excepted circuits .....	43
5.4 Devices for removal of power for prevention of unexpected start-up.....	43
5.5 Devices for isolating electrical equipment .....	44
5.6 Protection against unauthorized, inadvertent and/or mistaken connection.....	45

6	Protection against electric shock .....	45
6.1	General.....	45
6.2	Basic protection .....	45
6.2.1	General .....	45
6.2.2	Protection by enclosures .....	45
6.2.3	Protection by insulation of live parts .....	46
6.2.4	Protection against residual voltages .....	47
6.2.5	Protection by barriers .....	47
6.2.6	Protection by placing out of reach or protection by obstacles .....	47
6.3	Fault protection.....	47
6.3.1	General .....	47
6.3.2	Prevention of the occurrence of a touch voltage .....	48
6.3.3	Protection by automatic disconnection of supply .....	48
6.4	Protection by the use of PELV .....	49
6.4.1	General requirements .....	49
6.4.2	Sources for PELV .....	50
7	Protection of equipment.....	50
7.1	General.....	50
7.2	Overcurrent protection .....	51
7.2.1	General .....	51
7.2.2	Supply conductors .....	51
7.2.3	Power circuits .....	51
7.2.4	Control circuits .....	51
7.2.5	Socket outlets and their associated conductors .....	52
7.2.6	Lighting circuits .....	52
7.2.7	Transformers .....	52
7.2.8	Location of overcurrent protective devices .....	52
7.2.9	Overcurrent protective devices .....	52
7.2.10	Rating and setting of overcurrent protective devices .....	53
7.3	Protection of motors against overheating .....	53
7.3.1	General .....	53
7.3.2	Overload protection .....	53
7.3.3	Over-temperature protection .....	54
7.4	Protection against abnormal temperature .....	54
7.5	Protection against the effects of supply interruption or voltage reduction and subsequent restoration .....	54
7.6	Motor overspeed protection.....	54
7.7	Additional earth fault/residual current protection .....	55
7.8	Phase sequence protection .....	55
7.9	Protection against overvoltages due to lightning and to switching surges .....	55
7.10	Short-circuit current rating .....	56
8	Equipotential bonding .....	56
8.1	General.....	56
8.2	Protective bonding circuit.....	58
8.2.1	General .....	58
8.2.2	Protective conductors .....	58
8.2.3	Continuity of the protective bonding circuit .....	59
8.2.4	Exclusion of switching devices from the protective bonding circuit .....	60
8.2.5	Parts that need not be connected to the protective bonding circuit.....	60

8.2.6	Protective conductor connecting points.....	60
8.2.7	Mobile hoisting machines.....	60
8.2.8	Additional requirements for electrical equipment having earth leakage currents higher than 10 mA AC or DC.....	61
8.3	Functional bonding.....	61
8.4	Measures to restrict the effects of high leakage current .....	62
9	Control circuits and control functions .....	62
9.1	Control circuits.....	62
9.1.1	General .....	62
9.1.2	Control circuit supply .....	62
9.1.3	Control circuit voltages .....	62
9.1.4	Protection.....	62
9.2	Control functions.....	63
9.2.1	General .....	63
9.2.2	Categories of stop functions .....	63
9.2.3	Operating modes .....	63
9.2.4	Suspension of safeguarding.....	63
9.2.5	Operation .....	64
9.2.6	Other control functions .....	66
9.2.7	Cableless control system (CCS).....	67
9.3	Protective interlocks.....	68
9.3.1	General .....	68
9.3.2	Reclosing or resetting of an interlocking safeguard.....	68
9.3.3	Exceeding operating limits.....	68
9.3.4	Operation of auxiliary functions.....	68
9.3.5	Interlocks between different operations and for contrary motions.....	68
9.3.6	Reverse current braking.....	69
9.4	Control functions in the event of failure.....	69
9.4.1	General requirements .....	69
9.4.2	Measures to minimize risk in the event of failure.....	70
9.4.3	Protection against malfunction of control circuits .....	71
9.4.4	Protection against maloperation of a motion control system.....	77
10	Operator interface and hoisting machine mounted control devices.....	77
10.1	General.....	77
10.1.1	General requirements .....	77
10.1.2	Location and mounting.....	77
10.1.3	Protection.....	78
10.1.4	Position sensors .....	78
10.1.5	Portable and pendant control stations.....	78
10.2	Actuators .....	78
10.2.1	Colours.....	78
10.2.2	Markings.....	79
10.3	Indicator lights, displays and audible devices.....	80
10.3.1	General .....	80
10.3.2	Colours.....	80
10.3.3	Flashing lights and displays.....	80
10.4	Illuminated push-buttons .....	81
10.5	Rotary control devices .....	81
10.6	Start devices.....	81

10.7	Emergency stop devices .....	81
10.7.1	Location of emergency stop devices .....	81
10.7.2	Types of emergency stop device .....	82
10.7.3	Colour of actuators .....	82
10.7.4	Local operation of the crane-supply-switch and the crane-disconnector to effect emergency stop .....	82
10.8	Emergency switching-off devices .....	82
10.8.1	Location of emergency switching-off devices .....	82
10.8.2	Types of emergency switching-off device .....	82
10.8.3	Colour of actuators .....	82
10.8.4	Local operation of the crane-supply-switch and the crane-disconnector to effect emergency switching-off.....	83
10.9	Enabling control device .....	83
11	Controlgear: location, mounting and enclosures.....	83
11.1	General requirements .....	83
11.2	Location and mounting.....	83
11.2.1	Accessibility and maintenance .....	83
11.2.2	Physical separation or grouping .....	84
11.2.3	Heating effects .....	84
11.3	Degrees of protection.....	85
11.4	Enclosures, doors and openings .....	85
11.5	Access to switchgear and to controlgear .....	86
11.5.1	General .....	86
11.5.2	Access to gangways .....	86
11.5.3	Gangways in front of switchgear and controlgear .....	87
12	Conductors and cables .....	87
12.1	General requirements .....	87
12.2	Conductors .....	87
12.3	Insulation .....	88
12.4	Current-carrying capacity in normal service .....	89
12.5	Conductor and cable voltage drop.....	90
12.6	Flexible cables.....	91
12.6.1	General .....	91
12.6.2	Mechanical rating .....	91
12.6.3	Current-carrying capacity of cables wound on drums .....	91
12.7	Conductor wires, conductor bars and slip-ring assemblies .....	92
12.7.1	Basic protection .....	92
12.7.2	Protective conductor circuit.....	94
12.7.3	Protective conductor current collectors .....	94
12.7.4	Removable current collectors with a disconnecter function .....	95
12.7.5	Clearances in air .....	95
12.7.6	Creepage distances .....	95
12.7.7	Conductor system sectioning .....	95
12.7.8	Construction and installation of conductor wire, conductor bar systems and slip-ring assemblies .....	95
13	Wiring practices.....	96
13.1	Connections and routing .....	96
13.1.1	General requirements .....	96
13.1.2	Conductor and cable runs.....	96

13.1.3	Conductors of different circuits .....	97
13.1.4	AC circuits – Electromagnetic effects (prevention of eddy currents) .....	97
13.1.5	Connection between pick-up and pick-up converter of an inductive power supply system .....	97
13.2	Identification of conductors .....	97
13.2.1	General requirements .....	97
13.2.2	Identification of the protective conductor / protective bonding conductor .....	98
13.2.3	Identification of the neutral conductor .....	98
13.2.4	Identification by colour .....	99
13.3	Wiring inside enclosures .....	99
13.4	Wiring outside enclosures .....	100
13.4.1	General requirements .....	100
13.4.2	External ducts .....	100
13.4.3	Connection to the hoisting machine and to moving elements on the hoisting machine .....	100
13.4.4	Interconnection of devices on the hoisting machine .....	101
13.4.5	Plug/socket combinations .....	101
13.4.6	Dismantling for shipment .....	102
13.4.7	Additional conductors .....	102
13.5	Ducts, connection boxes and other boxes .....	103
13.5.1	General requirements .....	103
13.5.2	Percentage fill of ducts .....	103
13.5.3	Rigid metal conduits and fittings .....	103
13.5.4	Flexible metal conduits and fittings .....	103
13.5.5	Flexible non-metallic conduits and fittings .....	103
13.5.6	Cable trunking systems .....	104
13.5.7	Hoisting machine compartments and cable trunking systems .....	104
13.5.8	Connection boxes and other boxes .....	104
13.5.9	Motor connection boxes .....	104
14	Electric motors and associated equipment .....	104
14.1	General requirements .....	104
14.2	Motor enclosures .....	105
14.3	Motor dimensions .....	105
14.4	Motor mounting and compartments .....	105
14.5	Criteria for motor selection .....	105
14.6	Protective devices for mechanical brakes .....	106
14.7	Electrically operated mechanical brakes .....	106
15	Socket-outlets and lighting .....	106
15.1	Socket-outlets for accessories .....	106
15.2	Local lighting of the hoisting machine and of the equipment .....	106
15.2.1	General .....	106
15.2.2	Supply .....	106
15.2.3	Protection .....	107
15.2.4	Fittings .....	107
16	Marking, warning signs and reference designations .....	107
16.1	General .....	107
16.2	Warning signs .....	107
16.2.1	Electric shock hazard .....	107
16.2.2	Hot surfaces hazard .....	108



16.2.3	Hazard from energy storage system .....	108
16.3	Functional identification .....	109
16.4	Marking of enclosures of electrical equipment.....	109
16.5	Reference designations .....	109
17	Technical documentation .....	109
17.1	General.....	109
17.2	Information related to the electrical equipment.....	110
18	Verification .....	111
18.1	General.....	111
18.2	Verification of conditions for protection by automatic disconnection of supply .....	111
18.2.1	General .....	111
18.2.2	Test 1 – Verification of the continuity of the protective bonding circuit .....	112
18.2.3	Test 2 – Fault loop impedance verification and suitability of the associated overcurrent protective device .....	112
18.2.4	Application of the test methods for TN-systems .....	112
18.3	Insulation resistance tests.....	114
18.4	Voltage tests.....	115
18.5	Protection against residual voltages.....	115
18.6	Functional tests .....	115
18.7	Retesting .....	115
Annex A (normative)	Fault protection by automatic disconnection of supply .....	116
A.1	Fault protection for machines supplied from TN-systems.....	116
A.1.1	General .....	116
A.1.2	Conditions for protection by automatic disconnection of the supply by overcurrent protective devices .....	116
A.1.3	Condition for protection by reducing the touch voltage below 50 V.....	117
A.1.4	Verification of conditions for protection by automatic disconnection of the supply.....	118
A.2	Fault protection for machines supplied from TT-systems .....	120
A.2.1	Connection to earth .....	120
A.2.2	Fault protection for TT systems .....	120
A.2.3	Verification of protection by automatic disconnection of supply using a residual current protective device (RCD).....	121
A.2.4	Measurement of the fault loop impedance ( $Z_S$ ).....	122
Annex B (informative)	Enquiry form for the electrical equipment of hoisting machines.....	124
Annex C (informative)	Current-carrying capacity and overcurrent protection of conductors and cables in the electrical equipment of machines.....	128
C.1	General.....	128
C.2	General operating conditions .....	128
C.2.1	Ambient air temperature .....	128
C.2.2	Methods of installation.....	128
C.2.3	Grouping .....	129
C.2.4	Classification of conductors .....	131
C.3	Co-ordination between conductors and protective devices providing overload protection.....	131
C.4	Overcurrent protection of conductors .....	132
Annex D (informative)	Conductor selection for intermittent duty .....	134
D.1	General.....	134
D.2	Intermittent duty with 10-min cycle .....	134

D.3	Intermittent duty with any cycle time .....	135
D.4	Calculation of thermal equivalent current .....	136
Annex E (informative)	Explanation of emergency operation functions.....	138
E.1	Emergency operations .....	138
E.2	Emergency stop .....	138
E.3	Emergency start.....	138
E.4	Emergency switching-off .....	138
E.5	Emergency switching-on .....	138
Annex F (informative)	Comparison of typical conductor cross-sectional areas.....	139
Annex G (informative)	Measures to reduce the effects of electromagnetic influences.....	141
G.1	General.....	141
G.2	Mitigation of electromagnetic interference (EMI) .....	141
G.2.1	General .....	141
G.2.2	Measures to reduce EMI.....	142
G.3	Separation and segregation of cables .....	142
G.4	Power supply of a machine by parallel sources .....	146
G.5	Supply impedance where a Power Drive System (PDS) is used .....	146
G.6	Emission levels for electrical equipment for PDS.....	146
G.7	Conducted disturbances.....	147
G.8	Immunity requirements – Performance criteria .....	148
Annex H (informative)	Documentation and information .....	149
Bibliography	.....	151
Figure 1	– Block diagram of combined working cranes in a typical material handling system in a seaport.....	15
Figure 2	– Block diagram of a typical crane and its associated electrical equipment.....	16
Figure 3	– Examples of electrical supply systems .....	38
Figure 4	– Disconnecter isolator .....	40
Figure 5	– Disconnecting circuit breaker .....	40
Figure 6	– Example of equipotential bonding for electrical equipment of a hoisting machine.....	57
Figure 7	– Symbol IEC 60417-5019: Protective earth .....	60
Figure 8	– Symbol IEC 60417-5020: Frame or chassis.....	61
Figure 9	– Method a) Earthed control circuit fed by a transformer .....	71
Figure 10	– Method b1) Non-earthed control circuit fed by transformer .....	72
Figure 11	– Method b2) Non-earthed control circuit fed by transformer .....	72
Figure 12	– Method b3) Non-earthed control circuit fed by transformer .....	73
Figure 13	– Method c) Control circuits fed by transformer with an earthed centre-tap winding .....	74
Figure 14	– Method d1a) Control circuit without transformer connected between a phase and the neutral of an earthed supply system.....	75
Figure 15	– Method d1b) control circuit without transformer connected between two phases of an earthed supply system .....	75
Figure 16	– Method d2a) Control circuit without transformer connected between phase and neutral of a non-earthed supply system.....	76
Figure 17	– Method d2b) control circuit without transformer connected between two phases of a non-earthed supply system .....	76

Figure 18 – Limit of arm’s reach in cases where the distance from the middle of the hoisting device-rail to the edge of the girder is less than 300 mm .....	93
Figure 19 – Limit of arm’s reach in cases where the distance from the middle of the hoisting device-rail to the edge of the girder is at least 300 mm .....	93
Figure 20 – Limit of arm’s reach in cases of using additional obstacles .....	94
Figure 21– Symbol IEC 60417-5019.....	98
Figure 22 – Symbol IEC 60417-5021.....	98
Figure 23 – Symbol ISO 7010-W012 .....	108
Figure 24 – Symbol ISO 7010-W017 .....	108
Figure 25 – Warning sign: energy storage system.....	108
Figure A.1 – Typical arrangement for fault loop impedance ( $Z_S$ ) measurement in TN systems .....	119
Figure A.2 – Typical arrangement for fault loop impedance ( $Z_S$ ) measurement for power drive system circuits in TN systems.....	119
Figure A.3 – Typical arrangement for fault loop impedance ( $Z_S$ ) measurement in TT systems .....	122
Figure A.4 – Typical arrangement for fault loop impedance ( $Z_S$ ) measurement for Power Drive System circuits in TT systems.....	123
Figure C.1 – Methods of conductor and cable installation independent of number of conductors/cables.....	129
Figure C.2 – Parameters of conductors and protective devices .....	131
Figure D.1 – An example of current and time of the segments of the operating cycle of a variable speed AC hoist drive .....	136
Figure G.1 – By-pass conductor for screen reinforcement.....	142
Figure G.2 – Examples of vertical separation and segregation .....	144
Figure G.3 – Examples of horizontal separation and segregation .....	144
Figure G.4 – Cable arrangements in metal cable trays .....	145
Figure G.5 – Connections between metal cable trays or cable trunking systems .....	145
Figure G.6 – Interruption of metal cable trays at fire barriers .....	146
Table 1 – Minimum cross-sectional area of protective copper conductors .....	37
Table 2 – Symbols for actuators (power).....	79
Table 3 – Symbols for actuators (machine operation).....	79
Table 4 – Colours for indicator lights and their meanings with respect to the condition of the hoisting machine .....	80
Table 5 – Minimum cross-sectional areas of copper conductors .....	88
Table 6 – Classification of conductors.....	88
Table 7 – Examples of current-carrying capacity ( $I_Z$ ) of PVC-insulated copper conductors or cables under steady-state conditions in an ambient air temperature of +40 °C for different methods of installation .....	90
Table 8 – Derating factors for cables wound on drums .....	92
Table 9 – Minimum permitted bending radii for the forced guiding of flexible cables .....	101
Table 10 – Application of the test methods for TN-systems .....	113
Table 11 – Examples of maximum cable length from each protective device to their loads for TN-systems .....	114
Table A.1 – Maximum disconnecting times for TN systems .....	116

Table A.2 – Maximum disconnecting time for TT-systems .....	121
Table C.1 – Correction factors .....	128
Table C.2 – Derating factors for $I_Z$ for grouping .....	130
Table C.3 – Derating factors for $I_Z$ for multi-core cables up to 10 mm <sup>2</sup> .....	130
Table C.4 – Classification of conductors .....	131
Table C.5 – Maximum allowable conductor temperatures under normal and short-circuit conditions .....	132
Table D.1 – Correction factor for 10 min cycle .....	135
Table D.2 – Thermal time constant of conductors.....	135
Table F.1 – Comparison of conductor sizes .....	139
Table G.1 – Minimum separation distances using metallic containment as illustrated in Figure G.2 .....	143
Table G.2 – Limits for the interference voltage for the environments / categories .....	146
Table G.3 – Limits for propagated electromagnetic disturbance .....	147
Table G.4 – Limits for conducted disturbances.....	147
Table G.5 – Immunity requirements – performance criteria .....	148
Table H.1 – Documentation and information that can be applicable.....	149

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY OF MACHINERY –  
ELECTRICAL EQUIPMENT OF MACHINES –****Part 32: Requirements for hoisting machines**

## FOREWORD

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IEC 60204-32 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects. It is an International Standard.

This third edition cancels and replaces the second edition published in 2008. This edition constitutes a technical revision.

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

- a) alignment to the IEC 60204-1 sixth edition (2016) especially for:
  - requirements for earthing and bonding;
  - requirements for circuit protection;
  - consideration of use of Power Drive Systems;
  - protective bonding requirements and terminology;
  - requirements pertaining to safe torque off for PDS, emergency stop, and control circuit protection;
  - symbols for actuators of control devices;
- b) reference for high voltage electrical equipment;
- c) cableless control system requirements;
- d) EMC requirements;
- e) technical documentation requirements;
- f) general updating to current special national conditions, normative standards, and bibliographical references.

The text of this International Standard is based on the following documents:

Draft	Report on voting
44/1000/FDIS	44/1005/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

[IEC 60204-32:2023](#)

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

The following differing practices of a less permanent nature exist in the countries indicated below:

- 4.3.1: The voltage characteristics of electricity supplied by public distribution systems in Europe are given in EN 50160:2010.
- 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 60417-519:2002-10 or any combination (USA).
- 5.3.1: Isolation of the neutral conductor is mandatory in TN-systems (Norway).
- 6.3.3 b),
- 13.4.5 b),
- 18.2.1: TT power systems are not allowed (USA).
- 6.3.3,
- 18.2,
- Annex A: TN systems are not used. TT systems are the national standard (Japan)

- 6.3.3 b) The use of residual current protective devices with a rated residual operating current not exceeding 1 A is mandatory in TT systems as a means for fault protection by automatic disconnection of supply (Italy).
- 7.2.3: Disconnection of the neutral conductor is mandatory in a TN-S system (France).
- 7.2.3: Third paragraph: distribution of a neutral conductor with an IT system is not allowed (USA and Norway).
- 7.10: For evaluation of short circuit ratings, the requirements of UL 508A Supplement SB may be used (USA).
- 8.2.2: See IEC 60364-5-54:2011, Annex E List of notes concerning certain countries. Maximum nominal AC control circuit voltage is 120 V (USA).
- 9.1.2: Only stranded wires are allowed on machines, except for 0,2 mm<sup>2</sup> solid conductors within enclosures (USA).
- 12.2: The smallest power circuit conductor allowed on machines is 0,82 mm<sup>2</sup> (AWG 18).
- Table 5: Cross-sectional area is specified in NFPA 79 using American Wire Gauge (AWG) (USA). See Annex F.
- 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: Second paragraph, fifth bullet: The full load current rating of lighting circuits does not exceed 15 A (USA).
- 16.4: Nameplate marking requirements (USA).
- A.2.2.2: The permissible maximum value of  $R_A$  is regulated (e.g. when  $U_0 > 300$  V,  $R_A$  shall be less than 10  $\Omega$ , when  $U_0 < 300$  V,  $R_A$  shall be less than 100  $\Omega$ ,  $U_0$  is the nominal AC line to earth voltage in volts (V) (Japan).
- A.2.2.2: The maximum permissible value of  $R_A$  is 83  $\Omega$  (Netherlands).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](https://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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