



BSI Standards Publication

Safety requirements for electrical equipment for measurement, control, and laboratory use — General requirements for equipment intended to be used in educational establishments by children

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National foreword

This Published Document is the UK implementation of IEC/TS 62850:2013. It supersedes DD 61010-100:2007 which is withdrawn.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

**Safety requirements for electrical equipment for measurement, control, and laboratory use –
General requirements for equipment intended to be used in educational establishments by children**

**Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire –
Règles générales pour appareils destinés à une utilisation dans les établissements scolaires par des enfants**

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CONTENTS

FOREWORD.....	10
INTRODUCTION.....	12
1 Scope and object.....	13
1.1 Scope.....	13
1.1.1 Equipment included in scope.....	13
1.1.2 Equipment excluded from scope.....	13
1.1.3 Computing equipment.....	14
1.2 Object.....	14
1.2.1 Aspects included in scope.....	14
1.2.2 Aspects excluded from scope.....	15
1.3 Verification.....	15
1.4 Environmental conditions.....	15
1.4.1 Normal environmental conditions.....	15
1.4.2 Extended environmental conditions.....	15
2 Normative references.....	16
3 Terms and definitions.....	18
3.1 Equipment and states of equipment.....	18
3.2 Parts and accessories.....	18
3.3 Quantities.....	19
3.4 Tests.....	20
3.5 Safety terms.....	20
3.6 Insulation.....	22
4 Tests.....	23
4.1 General.....	23
4.2 Sequence of tests.....	24
4.3 Reference test conditions.....	24
4.3.1 Environmental conditions.....	24
4.3.2 State of equipment.....	24
4.4 Testing in SINGLE FAULT CONDITION.....	26
4.4.1 General.....	26
4.4.2 Application of fault conditions.....	26
4.4.3 Duration of tests.....	29
4.4.4 Conformity after application of fault conditions.....	29
5 Marking and documentation.....	30
5.1 Marking.....	30
5.1.1 General.....	30
5.1.2 Identification.....	30
5.1.3 MAINS supply.....	30
5.1.4 Fuses.....	32
5.1.5 TERMINALS, connections and operating devices.....	32
5.1.6 Switches and circuit-breakers.....	33
5.1.7 Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION.....	33
5.1.8 Field-wiring TERMINAL boxes.....	34
5.2 Warning markings.....	34
5.3 Durability of markings.....	34
5.4 Documentation.....	35

5.4.1	General	35
5.4.2	Equipment RATINGS	35
5.4.3	Equipment installation	36
5.4.4	Equipment operation	36
5.4.5	Equipment maintenance and service	37
5.4.6	Integration into systems or effects resulting from special conditions	37
6	Protection against electric shock	38
6.1	General	38
6.1.1	Requirements	38
6.1.2	Exceptions	38
6.2	Determination of ACCESSIBLE parts	38
6.2.1	General	38
6.2.2	Examination	39
6.2.3	Not used Openings above parts that are HAZARDOUS LIVE	39
6.2.4	Not used Openings for pre-set controls	39
6.2.5	Additional determination for all openings except TERMINALS	40
6.3	Limit values for ACCESSIBLE parts	40
6.3.1	Levels in NORMAL CONDITION	40
6.3.2	Levels in SINGLE FAULT CONDITION	40
6.4	Primary means of protection	43
6.4.1	General	43
6.4.2	ENCLOSURES and PROTECTIVE BARRIER	43
6.4.3	BASIC INSULATION	43
6.4.4	Impedance	43
6.5	Additional means of protection in case of SINGLE FAULT CONDITIONS	43
6.5.1	General	43
6.5.2	PROTECTIVE BONDING	44
6.5.3	SUPPLEMENTARY INSULATION and REINFORCED INSULATION	47
6.5.4	PROTECTIVE IMPEDANCE	47
6.5.5	Automatic disconnection of the supply	48
6.5.6	Current- or voltage-limiting device	48
6.6	Connections to external circuits	48
6.6.1	General	48
6.6.2	TERMINALS for external circuits	49
6.6.3	Circuits with TERMINALS which are HAZARDOUS LIVE	49
6.6.4	TERMINALS for stranded conductors	49
6.7	Insulation requirements	50
6.7.1	The nature of insulation	50
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V	52
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	56
6.8	Procedure for voltage tests	61
6.8.1	General	61
6.8.2	Humidity preconditioning	62
6.8.3	Test procedures	63
6.9	Constructional requirements for protection against electric shock	63
6.9.1	General	63
6.9.2	Insulating materials	64

6.9.3	Colour coding	64
6.10	Connection to the MAINS supply source and connections between parts of equipment	64
6.10.1	MAINS supply cords	64
6.10.2	Fitting of non-detachable MAINS supply cords	65
6.10.3	Plugs and connectors	67
6.11	Disconnection from supply source	67
6.11.1	General	67
6.11.2	Exceptions	67
6.11.3	Requirements according to type of equipment	67
6.11.4	Disconnecting devices	68
7	Protection against mechanical HAZARDS	69
7.1	General	69
7.2	Sharp edges	69
7.3	Moving parts	69
7.3.1	General	69
7.3.2	Exceptions	69
7.3.3	RISK assessment for mechanical HAZARDS to body parts	70
7.3.4	Limitation of force and pressure	71
7.3.5	Gap limitations between moving parts	71
7.4	Stability	73
7.5	Provisions for lifting and carrying	74
7.5.1	General	74
7.5.2	Handles and grips	74
7.5.3	Lifting devices and supporting parts	74
7.6	Wall mounting	75
7.7	Expelled parts	75
8	Resistance to mechanical stresses	75
8.1	General	75
8.2	ENCLOSURE rigidity test	76
8.2.1	Static test	76
8.2.2	Impact test	77
8.3	Drop test	78
8.3.1	Equipment other than HAND-HELD EQUIPMENT and DIRECT PLUG-IN EQUIPMENT	78
8.3.2	HAND-HELD EQUIPMENT and DIRECT PLUG-IN EQUIPMENT	78
9	Protection against the spread of fire	78
9.1	General	78
9.2	Eliminating or reducing the sources of ignition within the equipment	80
9.3	Containment of fire within the equipment, should it occur	80
9.3.1	General	80
9.3.2	Constructional requirements	80
9.4	Limited-energy circuit	83
9.5	Requirements for equipment containing or using flammable liquids	84
9.6	Overcurrent protection	84
9.6.1	General	84
9.6.2	PERMANENTLY CONNECTED EQUIPMENT	85
9.6.3	Other equipment	85
10	Equipment temperature limits and resistance to heat	85

10.1	Surface temperature limits for protection against burns	85
10.2	Temperatures of windings	86
10.3	Other temperature measurements	87
10.4	Conduct of temperature tests	87
10.4.1	General	87
10.4.2	Temperature measurement of heating equipment	87
10.4.3	Equipment intended for installation in a cabinet or a wall	88
10.5	Resistance to heat	88
10.5.1	Integrity of CLEARANCES and CREEPAGE DISTANCES	88
10.5.2	Non-metallic ENCLOSURES	88
10.5.3	Insulating material	88
11	Protection against HAZARDS from fluids	89
11.1	General	89
11.2	Cleaning	90
11.3	Spillage	90
11.4	Overflow	90
11.5	Battery electrolyte	90
11.6	Specially protected equipment	91
11.7	Fluid pressure and leakage	91
11.7.1	Maximum pressure	91
11.7.2	Leakage and rupture at high pressure	91
11.7.3	Leakage from low-pressure parts	92
11.7.4	Overpressure safety device	92
12	Protection against radiation, including laser sources, and against sonic and ultrasonic pressure	92
12.1	General	92
12.2	Equipment producing ionizing radiation	92
12.2.1	Ionizing radiation	92
12.2.2	Accelerated electrons	94
12.3	Ultraviolet (UV) Optical radiation	94
12.4	Microwave radiation	95
12.5	Sonic and ultrasonic pressure	95
12.5.1	Sound level	95
12.5.2	Ultrasonic pressure	95
12.6	Laser sources	96
13	Protection against liberated gases and substances, explosion and implosion	96
13.1	Poisonous and injurious gases and substances	96
13.2	Explosion and implosion	97
13.2.1	Components	97
13.2.2	Batteries and battery charging	97
13.2.3	Implosion of cathode ray tubes	97
14	Components and subassemblies	98
14.1	General	98
14.2	Motors	99
14.2.1	Motor temperatures	99
14.2.2	Series excitation motors	99
14.3	Overtemperature protection devices	100
14.4	Fuse holders	100
14.5	MAINS voltage selection devices	100

14.6	MAINS transformers tested outside equipment.....	100
14.7	Printed wiring boards.....	101
14.8	Circuits or components used as TRANSIENT OVERVOLTAGE limiting devices	101
14.9	<u>Small components</u>	102
15	Protection by interlocks	102
15.1	General.....	102
15.2	Prevention of reactivating.....	102
15.3	Reliability	102
16	HAZARDS resulting from application.....	103
16.1	REASONABLY FORESEEABLE MISUSE.....	103
16.2	Ergonomic aspects.....	103
17	RISK assessment.....	103
	Annex A (normative) Measuring circuits for touch current (see 6.3).....	105
	Annex B (normative) Standard test fingers (see 6.2).....	109
	Annex C (normative) Measurement of CLEARANCES and CREEPAGE DISTANCES.....	112
	Annex D (normative) Parts between which insulation requirements are specified (see 6.4 and 6.5.3)	116
	Annex E (informative) Guideline for reduction of POLLUTION DEGREES.....	119
	Annex F (normative) ROUTINE TESTS.....	120
	Annex G (informative) Leakage and rupture from fluids under pressure	122
	Annex H (normative) Qualification of conformal coatings for protection against POLLUTION	127
	Annex I (informative) Line-to-neutral voltages for common MAINS supply systems	130
	Annex J (informative) Risk assessment	131
	Annex K (normative) Insulation requirements not covered by 6.7	134
	Annex L (informative) Index of defined terms.....	156
	Bibliography.....	158
	Figure 1 – Measurements through openings in ENCLOSURES.....	39
	Figure 2 – Maximum duration of short-term ACCESSIBLE voltages in SINGLE FAULT CONDITION (see 6.3.2 a)).....	41
	Figure 3 – Capacitance level versus voltage in NORMAL CONDITION and SINGLE FAULT CONDITION (see 6.3.1 b) and 6.3.2 c)).....	42
	Figure 4 – Acceptable arrangement of protective means against electric shock	44
	Figure 5 – Examples of binding screw assemblies	46
	Figure 6 – Distance between conductors on an interface between two layers.....	54
	Figure 7 – Distance between adjacent conductors along an interface of two inner layers.....	54
	Figure 8 – Distance between adjacent conductors located between the same two layers	55
	Figure 9 – Detachable MAINS supply cords and connections	65
	Figure 10 – Impact test using a sphere	77
	Figure 11 – Flow chart to explain the requirements for protection against the spread of fire.....	79
	Figure 12 – Baffle	82
	Figure 13 – Area of the bottom of an ENCLOSURE to be constructed as specified in 9.3.2 c) 1).....	82

Figure 14 – Ball-pressure test apparatus	89
Figure 15 – Flow chart for conformity options 14.1 a), b), c) and d).....	99
<u>Figure 16 – Cylinder for checking the size of small components</u>	102
Figure A.1 – Measuring circuit for a.c. with frequencies up to 1 MHz and for d.c.	105
Figure A.2 – Measuring circuits for sinusoidal a.c. with frequencies up to 100 Hz and for d.c.	106
Figure A.3 – Current measuring circuit for electrical burns	107
Figure A.4 – Current measuring circuit for wet contact	108
Figure B.1 – Rigid test finger	109
Figure B.2 – Jointed test finger	110
<u>Figure B.3 – Jointed test probe for equipment intended to be used by CHILDREN</u>	111
Figure C.1 – Examples of methods of measuring CLEARANCES and CREEPAGE DISTANCES	115
Figures D.1 a) to d) – Protection between HAZARDOUS LIVE circuits and ACCESSIBLE parts	117
Figures D.1 e) to h) – Protection between HAZARDOUS LIVE circuits and circuits which ACCESSIBLE external TERMINALS	117
Figures D.2 a) and b) – Protection between a HAZARDOUS LIVE internal circuit and an ACCESSIBLE part which is not bonded to other ACCESSIBLE parts	118
Figures D.2 c) and d) – Protection between a HAZARDOUS LIVE primary circuit and circuits which have ACCESSIBLE external TERMINALS	118
Figure D.3 – Protection of external ACCESSIBLE TERMINALS of two HAZARDOUS LIVE circuits	118
Figure G.1 – Conformity verification process (see C.2)	123
Figure H.1 – Test sequence and conformity	129
Figure J.1 – Iterative process of RISK assessment and RISK reduction	131
Figure J.2 – RISK reduction	132
Figure K.1 – Distance between conductors on an interface between two layers	139
Figure K.2 – Distance between adjacent conductors along an interface of an inner layer	139
Figure K.3 – Distance between adjacent conductors located between the same two layers	140
Figure K.4 – Example of recurring peak voltage	153
Table 1 – Symbols	31
Table 2 – Tightening torque for binding screw assemblies	46
Table 3 – Multiplication factors for CLEARANCES of equipment RATED for operation at altitudes up to 5 000 m	51
Table 4 – CLEARANCES and CREEPAGE DISTANCES for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	53
Table 5 – Test voltages for solid insulation in MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	53
Table 6 – CLEARANCES and test voltages for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	57
Table 7 – CREEPAGE DISTANCES for secondary circuits	58
Table 8 – Minimum values for distance or thickness (see 6.7.3.4.2 to 6.7.3.4.4)	60
Table 9 – Distances between TERMINALS and foil	61

Table 10 – Correction factors according to test site altitude for test voltages for CLEARANCES	62
Table 11 – Values for physical tests on cord anchorages	66
Table 12 – Protective measures against mechanical HAZARDS to body parts.....	70
Table 13 – Minimum maintained gaps to prevent crushing for different body parts	72
Table 14 – Maximum gaps to prevent access for different body parts.....	73
Table 15 – Impact energy levels, test height and corresponding IK codes	78
Table 16 – Acceptable perforation of the bottom of an ENCLOSURE	81
Table 17 – Limits of maximum available current.....	83
Table 18 – Values for overcurrent protection devices	84
Table 19 – Surface temperature limits in NORMAL CONDITION.....	86
Table 20 – Maximum temperatures for insulation material of windings	87
<u>Table 21 – Lamp or lamp systems considered photobiologically safe</u>	94
<u>Table 22 – Lamp or lamp systems considered photobiologically conditionally safe</u>	94
<u>Table 23</u> Table 24 – Impulse withstand voltages for OVERVOLTAGE CATEGORY II.....	101
Table C.1 – Dimensions of X.....	112
Table E.1 – Environmental situations	119
Table E.2 – Reduction of POLLUTION DEGREES	119
Table F.1 – Test voltages for ROUTINE TESTS of MAINS CIRCUITS	121
Table G.1 – Test pressures for equipment with pressure above 14 MPa.....	125
Table H.1 – Test parameters, test conditions and test procedures	128
Table I.1 – Line-to-neutral voltages for common MAINS supply systems	130
Table J.1 – Severity of harm	133
Table J.2 – Probability of harm	133
Table J.3 – RISK category	133
Table K.1 – Multiplication factors for CLEARANCES for equipment RATED for operation at altitudes up to 5 000 m	135
Table K.2 – CLEARANCES and CREEPAGE DISTANCES for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II above 300 V.....	135
Table K.3 – CLEARANCES and CREEPAGE DISTANCES for MAINS CIRCUITS of OVERVOLTAGE CATEGORY III	136
Table K.4 – CLEARANCES and CREEPAGE DISTANCES for MAINS CIRCUITS of OVERVOLTAGE CATEGORY IV.....	136
Table K.5 – Test voltages for solid insulation in MAINS CIRCUITS of OVERVOLTAGE CATEGORY II above 300 V	137
Table K.6 – Test voltages for solid insulation in MAINS CIRCUITS of OVERVOLTAGE CATEGORY III	137
Table K.7 – Test voltages for solid insulation in MAINS CIRCUITS of OVERVOLTAGE CATEGORY IV	138
Table K.8 – Test voltages for testing long-term stress of solid insulation in MAINS CIRCUITS.....	138
Table K.9 – Minimum values for distance or thickness of solid insulation	139
Table K.10 – CLEARANCES and test voltages for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II above 300 V	142
Table K.11 – CLEARANCES and test voltages for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY III.....	143

Table K.12 – CLEARANCES and test voltages for secondary circuits derived from MAINS
CIRCUITS of OVERVOLTAGE CATEGORY IV 144

Table K.13 – CREEPAGE DISTANCES for secondary circuits..... 145

Table K.14 – Minimum values for distance or thickness (see K.2.4.2 to K.2.4.4) 147

Table K.15 – CLEARANCE values for the calculation of K.3.2 151

Table K.16 – Test voltages based on CLEARANCES 152

Table K.17 – CLEARANCES for BASIC INSULATION in circuits having recurring peak
voltages or WORKING VOLTAGES with frequencies above 30 kHz 154

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

General requirements for equipment intended to be used in educational establishments by children

FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- 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 62850, which is a technical specification, has been prepared by technical committee 66: Safety of measuring, control and laboratory equipment.

This first edition is based on the third edition (2010) of IEC 61010-1.

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

Enquiry draft	Report on voting
66/456/DTS	66/475/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.

In this Technical Specification, the following print types are used:

- requirements and definitions: in roman type;
- NOTES: in smaller roman type;
- *conformity and tests*: in italic type;
- terms used throughout this Technical Specification which have been defined in Clause 3: SMALL ROMAN CAPITALS.

Technical and major editorial changes from IEC 61010-1 are indicated as follows: added text is underlined (added text) and deleted text is struck out (~~deleted text~~). Minor editorial changes are not indicated.

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

- transformed into an International Standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Based on a TC 66 decision at the plenary meeting held in Everett on 2010-09-03, it was agreed that as an interim solution this document is to be published as a Technical Specification. This document publishes provisions pertaining to the use of this equipment by children in educational establishments which, if the provisions prove useful, are intended to be integrated into a future edition of IEC 61010-1. This publication will be reviewed in accordance with the rules of Part 1 of the ISO/IEC Directives where it is stated that a Technical Specification has to be reviewed within 3 years of its publication with the options of extension for another 3 years; conversion to an International Standard; or withdrawal.

This Technical Specification includes the following significant changes with respect to IEC 61010-1:2010, as well as other changes:

- a) a marking is added to indicate the age of CHILDREN by whom the equipment is intended to be used;
- b) accessibility requirements are enhanced to take into account the propensity of CHILDREN to insert foreign objects wherever they can;
- c) temperature limits have been decreased to take into account the greater sensitivity of a CHILD'S skin;
- d) mechanical access dimensions have been reduced to take into account the smaller dimensions of a CHILD'S body;
- e) limits for non-collimated optical radiation have been introduced;
- f) limits for ionizing radiation have been reduced;
- g) small detachable parts below certain dimensions have been prohibited;
- h) manufacturers are required to take into account the general unpredictability of the behaviour of CHILDREN.

Electrical equipment dealt with in this Technical Specification is used for teaching CHILDREN under the age of 16 in educational establishments.

CHILDREN are likely to poke objects and materials through apertures into the interior of electrical equipment. Consequently, more stringent criteria for access to HAZARDOUS LIVE conductors are required for educational establishment equipment than for general laboratory use. Moreover, the temperatures of parts that may be touched by CHILDREN should be lower than for equipment that is handled only by adults. Ergonomic considerations and mechanical RISKS need to be addressed with regard to the anthropomorphic dimensions of CHILDREN instead of adults. Requirements for equipment to be used by CHILDREN must also take into account REASONABLY FORESEEABLE MISUSE and the unpredictable behaviour of CHILDREN.

This Technical Specification addresses the safety requirements for equipment within the scope of IEC 61010 to be used by children between the ages of 3 and 16 in educational establishments, when supervised by the RESPONSIBLE BODY.

For certain types of equipment, these requirements will be supplemented or modified by the special requirements of one, or more than one, particular part 2 of the IEC 61010 series which must be read in conjunction with the requirements of this technical specification. In that case this IEC/TS 62850 is to be considered the alternative for IEC 61010-1.

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

General requirements for equipment intended to be used in educational establishments by children

1 Scope and object

1.1 Scope

1.1.1 Equipment included in scope

~~This part of IEC 61010 specifies general safety requirements for the following types of electrical equipment and their accessories, wherever they are intended to be used.~~

This Technical Specification IEC 62850 specifies general safety requirements for the following types of equipment and their accessories intended to be used in educational establishments by persons between the age of 3 years and the age of 16 years under the supervision of the RESPONSIBLE BODY.

If all or part of the equipment falls within the scope of one or more part 2 standards of IEC 61010 as well as within the scope of this technical specification, it will also need to meet the requirements of those other part 2 standards.

NOTE 1 In some countries age limits can be different from those used in this technical specification or can be replaced by capability requirements.

a) Electrical test and measurement equipment

This is equipment which by electromagnetic means tests, measures, indicates or records one or more electrical or physical quantities, also non-measuring equipment such as signal generators, measurement standards, power supplies for laboratory use, transducers, transmitters, etc.

NOTE 2 This includes bench-top power supplies intended to aid a testing or measuring operation on another piece of equipment. Power supplies intended to power equipment are within the scope of IEC 61558 (see 1.1.2 h)).

This Technical Specification also applies to test equipment integrated into manufacturing processes and intended for testing manufactured devices.

NOTE 3 Manufacturing test equipment is likely to be installed adjacent to and interconnected with industrial machinery in this application.

b) Electrical industrial process-control equipment

This is equipment which controls one or more output quantities to specific values, with each value determined by manual setting, by local or remote programming, or by one or more input variables.

c) Electrical laboratory equipment

This is equipment which measures, indicates, monitors, inspects or analyses materials, or is used to prepare materials, and includes in vitro diagnostic (IVD) equipment.

~~This equipment may also be used in areas other than laboratories; examples include self-test IVD equipment to be used in the home and inspection equipment to be used to check people or material during transportation.~~

1.1.2 Equipment excluded from scope

This Technical Specification does not apply to equipment within the scope of: