

**SLOVENSKI STANDARD**  
**oSIST prEN ISO 80601-2-70:2013**  
**01-junij-2013**

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**Medicinska električna oprema - 2-70. del: Posebne zahteve za osnovno varnost in bistvene lastnosti opreme za zdravljenje prenehanja dihanja v spanju (ISO/DIS 80601-2-70:2013)**

Medical Electrical Equipment - Part 2-70: Particular requirements for basic safety and essential performance of sleep apnoea breathing therapy equipment (ISO/DIS 80601-2-70:2013)

Medizinische elektrische Geräte - Teil 2-70: Besondere Festlegungen für die Sicherheit und die wesentlichen Leistungsmerkmale von Schlafapnoe-Atemtherapiegeräten (ISO/DIS 80601-2-70:2013)

Appareils électromédicaux - Partie 2-70: Exigences particulières pour la sécurité de base et les performances essentielles de l'équipement de thérapie respiratoire pour l'apnée du sommeil (ISO/DIS 80601-2-70:2013)

**Ta slovenski standard je istoveten z: prEN ISO 80601-2-70**

**ICS:**

11.040.10	Anestezijska, respiratorna in reanimacijska oprema	Anaesthetic, respiratory and reanimation equipment
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**oSIST prEN ISO 80601-2-70:2013**      **en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN ISO 80601-2-70**

March 2013

ICS 11.040.10

Will supersede EN ISO 17510-1:2009

English Version

**Medical Electrical Equipment - Part 2-70: Particular requirements for basic safety and essential performance of sleep apnoea breathing therapy equipment (ISO/DIS 80601-2-70:2013)**

Appareils électromédicaux - Partie 2-70: Exigences particulières pour la sécurité de base et les performances essentielles de l'équipement de thérapie respiratoire pour l'apnée du sommeil (ISO/DIS 80601-2-70:2013)

Medizinische elektrische Geräte - Teil 2-70: Besondere Festlegungen für die Sicherheit und die wesentlichen Leistungsmerkmale von Schlafapnoe-Atemtherapiegeräten (ISO/DIS 80601-2-70:2013)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 215.

If this draft becomes a European Standard, CEN 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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

## Contents

	Page
Foreword.....	3

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

[oSIST prEN ISO 80601-2-70:2013  
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## Foreword

This document (prEN ISO 80601-2-70:2013) has been prepared by Technical Committee ISO/TC 121 “Anaesthetic and respiratory equipment” in collaboration with Technical Committee CEN/TC 215 “Respiratory and anaesthetic equipment” the secretariat of which is held by BSI.

This document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 17510-1:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

### Endorsement notice

The text of ISO/DIS 80601-2-70:2013 has been approved by CEN as prEN ISO 80601-2-70:2013 without any modification.

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## DRAFT INTERNATIONAL STANDARD IEC/DIS 80601-2-70

ISO/TC 121/SC 3

Secretariat: **ANSI**Voting begins on  
**2013-03-28**Voting terminates on  
**2013-08-28**

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## Medical electrical equipment —

Part 2-70:

### Particular requirements for basic safety and essential performance of sleep apnoea breathing therapy equipment

*Appareils électromédicaux —*

*Partie 2-70: Exigences particulières pour la sécurité de base et les performances essentielles de l'équipement de thérapie respiratoire pour l'apnée du sommeil*

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[Revision of second edition (ISO 17510-1:2007)]

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### ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

This draft is submitted to a parallel enquiry in ISO and a CDV vote in the IEC.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

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1	<b>Contents</b>	Page
2	<b>Foreword</b> .....	vi
3	<b>Introduction</b> .....	viii
4	<b>201.1</b> <b>Scope, object and related standards</b> .....	1
5	201.1.1 <b>Scope</b> .....	1
6	201.1.2 <b>Object</b> .....	2
7	201.1.3 <b>Collateral standards</b> .....	2
8	201.1.4 <b>Particular standards</b> .....	2
9	<b>201.2</b> <b>Normative references</b> .....	3
10	<b>201.3</b> <b>Terms and definitions</b> .....	5
11	<b>201.4</b> <b>General requirements</b> .....	6
12	201.4.3 <b>ESSENTIAL PERFORMANCE</b> .....	7
13	201.4.3.101 <b>Additional requirements for ESSENTIAL PERFORMANCE</b> .....	7
14	201.4.6 <b>ME EQUIPMENT or ME SYSTEM parts that contact the PATIENT</b> .....	7
15	<b>201.5</b> <b>General requirements for testing of ME EQUIPMENT</b> .....	7
16	201.5.101 <b>Additional requirements for general requirements for testing of ME EQUIPMENT</b> .....	7
17	201.5.101.1 <b>Gas flowrate and pressure specifications</b> .....	7
18	201.5.101.2 <b>SLEEP APNOEA BREATHING THERAPY EQUIPMENT testing errors</b> .....	7
19	<b>201.6</b> <b>Classification of ME EQUIPMENT and ME SYSTEMS</b> .....	7
20	<b>201.7</b> <b>ME EQUIPMENT identification, marking and documents</b> .....	8
21	201.7.1.2 <b>Legibility of markings</b> .....	8
22	201.7.2.4.101 <b>Additional requirements for ACCESSORIES</b> .....	8
23	201.7.2.13.101 <b>Additional requirements for physiological effects</b> .....	8
24	201.7.2.17.101 <b>Additional requirements for protective packaging</b> .....	8
25	201.7.2.101 <b>Additional requirements for marking on the outside of ME EQUIPMENT or</b>	
26	ME EQUIPMENT parts.....	9
27	201.7.4.3 <b>Units of measurement</b> .....	9
28	201.7.9.1 <b>Additional general requirements</b> .....	9
29	201.7.9.2.1.101 <b>Additional general requirements</b> .....	10
30	201.7.9.2.2.101 <b>Additional requirements for warnings and safety notices</b> .....	10
31	201.7.9.2.9.101 <b>Additional requirements for operating instructions</b> .....	11
32	201.7.9.2.14.101 <b>Additional requirements for ACCESSORIES, supplementary equipment, used</b>	
33	material .....	11
34	201.7.9.3.1.101 <b>Additional general requirements</b> .....	11
35	<b>201.8</b> <b>Protection against electrical HAZARDS from ME EQUIPMENT</b> .....	12
36	<b>201.9</b> <b>Protection against mechanical HAZARDS of ME EQUIPMENT and ME SYSTEMS</b> .....	12
37	201.9.6.2.1.101 <b>Additional requirements for audible acoustic energy</b> .....	12
38	<b>201.10</b> <b>Protection against unwanted and excessive radiation HAZARDS</b> .....	13
39	<b>201.11</b> <b>Protection against excessive temperatures and other HAZARDS</b> .....	14
40	201.11.1.2.2 <b>APPLIED PARTS not intended to supply heat to a PATIENT</b> .....	14
41	201.11.6.4 <b>Leakage</b> .....	14
42	201.11.8 <b>Additional requirements for interruption of the power supply/SUPPLY MAINS to</b>	
43	ME EQUIPMENT .....	15
44	<b>201.12</b> <b>Accuracy of controls and instruments and protection against hazardous outputs</b> .....	15
45	201.12.1 <b>Accuracy of controls and instruments</b> .....	15

## ISO/IEC DIS 80601-2-70

46	201.12.1.101	Stability of static AIRWAY PRESSURE ACCURACY (long-term accuracy) .....	15
47	201.12.1.102	Stability of dynamic AIRWAY PRESSURE ACCURACY (short-term accuracy).....	16
48	201.12.1.102.1	CPAP mode .....	16
49	201.12.1.102.2	Bi-LEVEL POSITIVE AIRWAY PRESSURE mode .....	18
50	201.12.1.103	Maximum flowrate .....	20
51	201.12.4	Protection against hazardous output.....	21
52	201.12.4.101	Measurement of AIRWAY PRESSURE.....	21
53	201.12.4.102	MAXIMUM LIMITED PRESSURE PROTECTION DEVICE.....	21
54	201.12.4.103	CO <sub>2</sub> rebreathing.....	21
55	201.13	HAZARDOUS SITUATIONS and fault conditions .....	22
56	201.14	PROGRAMMABLE ELECTRICAL MEDICAL SYSTEMS (PEMS).....	22
57	201.15	Construction of ME EQUIPMENT .....	22
58	201.15.101	Mode of operation.....	22
59	201.16	ME SYSTEMS .....	22
60	201.17	Electromagnetic compatibility of ME EQUIPMENT and ME SYSTEMS.....	22
61	201.17.101	Additional requirements for electromagnetic compatibility of ME EQUIPMENT and	
62		ME SYSTEMS .....	22
63		.....	22
64	201.101	BREATHING GAS PATHWAY connectors .....	22
65	201.101.1	General .....	22
66	201.101.2	Other named ports .....	23
67	201.101.2.1	PATIENT-CONNECTION PORT .....	23
68	201.101.2.2	GAS OUTPUT PORT .....	23
69	201.101.2.3	FLOW-DIRECTION-SENSITIVE COMPONENTS .....	23
70	201.101.2.4	Ancillary port.....	23
71	201.101.2.5	Monitoring probe port .....	23
72	201.102	Requirements for the BREATHING GAS PATHWAY and ACCESSORIES .....	23
73	201.102.	General .....	23
74	201.102.2	Labelling .....	24
75	201.102.3	Humidification .....	24
76	201.102.4	BREATHING SYSTEM FILTER .....	24
77	201.103	FUNCTIONAL CONNECTION .....	24
78	201.103.1	General .....	24
79	201.103.2	FUNCTIONAL CONNECTION to support remote supervision .....	24
80	201.104	Training.....	25
81	202	Medical electrical equipment – Part 1-2: General requirements for basic safety and	
82		essential performance – Collateral standard: Electromagnetic compatibility –	
83		Requirements and tests .....	25
84	202.6.2.1.10	Compliance criteria .....	25
85	206	Medical electrical equipment – Part 1-6: General requirements for basic safety and	
86		essential performance – Collateral Standard: Usability .....	25
87	208	Medical electrical equipment – Part 1-8: General requirements for basic safety and	
88		essential performance – Collateral Standard: General requirements, tests and	
89		guidance for alarm systems in medical electrical equipment and medical electrical	
90		systems.....	26
91	211	Medical electrical equipment – Part 1-11: General requirements for basic safety and	
92		essential performance – Collateral Standard: Requirements for medical electrical	
93		equipment and medical electrical systems used in the home healthcare	
94		environment .....	26

95	<b>ANNEX C (informative) Guide to marking and labelling requirements for ME EQUIPMENT and</b>	
96	<b>ME SYSTEMS.....</b>	<b>27</b>
97	<b>Annex D (informative) Symbols on marking .....</b>	<b>31</b>
98	<b>Annex AA (informative) Particular guidance and rationale .....</b>	<b>32</b>
99	<b>Annex BB (informative) Data interface requirements .....</b>	<b>36</b>
100	<b>Annex CC (informative) Reference to the Essential Principles.....</b>	<b>40</b>
101	<b>Bibliography .....</b>	<b>42</b>
102	<b>Alphabetized index of defined terms used in this particular standard.....</b>	<b>43</b>
103	<b>Annex ZA (informative) Relationship between this Document and the Essential Requirements of</b>	
104	<b>EU Directive 93/42/EEC.....</b>	<b>45</b>
105		

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[oSIST prEN ISO 80601-2-70:2013](https://standards.iteh.ai/catalog/standards/sist/c61d688a-0a87-4ec9-b44d-8a9182ad2c80/osist-pren-iso-80601-2-70-2013)

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## ISO/IEC DIS 80601-2-70

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**Foreword**107  
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ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

113

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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ISO/IEC 80601-2-70 was prepared by a joint working group of Technical Committee ISO/TC 121, *Anaesthetic and respiratory equipment*, Subcommittee SC 3, *Lung ventilators and related equipment* and Technical Committee IEC/TC 62, *Electrical equipment in medical practice*, Subcommittee SC D, *Electrical equipment*.

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This first edition of ISO 80601-2-70 cancels and replaces the second edition of ISO 17510-1:2007. This edition of ISO 80601-2-70 constitutes a technical revision of ISO 17510-1:2007 and includes an alignment with third edition of IEC 60601-1 and IEC 60601-1-11.

125

The most significant changes are the following modifications:

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127

— identification of ESSENTIAL PERFORMANCE for SLEEP APNOEA BREATHING THERAPY EQUIPMENT and its ACCESSORIES;

128

and the following additions:

129

— tests for therapy performance; and

130

— new symbols.

131

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

132

In this standard, the following print types are used:

133

— Requirements and definitions: roman type.

134

— *Test specifications: italic type.*

135  
136

— Informative material appearing outside of tables, such as notes, examples and references: smaller type. Normative text of tables is also in a smaller type.

137  
138

— TERMS DEFINED IN CLAUSE 3 OF THE GENERAL STANDARD, IN THIS PARTICULAR STANDARD OR AS NOTED: SMALL CAPITALS TYPE.

139

In referring to the structure of this standard, the term

140 — "clause" means one of the seventeen numbered divisions within the table of contents, inclusive of all  
141 subdivisions (e.g. Clause 7 includes subclauses 7.1, 7.2, etc.);

142 — "subclause" means a numbered subdivision of a clause (e.g. 201.7.1, 201.7.2 and 201.7.2.1 are all  
143 subclauses of Clause 201.7).

144 References to clauses within this standard are preceded by the term "Clause" followed by the clause number.  
145 References to subclauses within this particular standard are by number only.

146 In this standard, the conjunctive "or" is used as an "inclusive or" so a statement is true if any combination of  
147 the conditions is true.

148 The verbal forms used in this standard conform to usage described in Annex H of the ISO/IEC Directives, Part  
149 2. For the purposes of this standard, the auxiliary verb:

150 — "shall" means that compliance with a requirement or a test is mandatory for compliance with this  
151 standard;

152 — "should" means that compliance with a requirement or a test is recommended but is not mandatory for  
153 compliance with this standard;

154 — "may" is used to describe a permissible way to achieve compliance with a requirement or test.

155 An asterisk (\*) as the first character of a title or at the beginning of a paragraph or table title indicates that  
156 there is guidance or rationale related to that item in Annex AA.

157 The attention of Member Bodies and National Committees is drawn to the fact that equipment manufacturers  
158 and testing organizations may need a transitional period following publication of a new, amended or revised  
159 ISO or IEC publication in which to make products in accordance with the new requirements and to equip  
160 themselves for conducting new or revised tests. It is the recommendation of the committee that the content of  
161 this publication not be adopted for mandatory implementation nationally earlier than 3 years from the date of  
162 publication for equipment newly designed and not earlier than 5 years from the date of publication for  
163 equipment already in production.

## 164 Introduction

165 Sleep apnoea is the clinically significant intermittent absences of normal respiration occurring during sleep.  
 166 The awareness of the RISKS associated with sleep apnoea has grown significantly in recent years. As a result,  
 167 the use of SLEEP APNOEA BREATHING THERAPY EQUIPMENT has become common. This document covers BASIC  
 168 SAFETY and ESSENTIAL PERFORMANCE requirements needed to protect PATIENTS in the use of this ME EQUIPMENT.  
 169 SLEEP APNOEA BREATHING THERAPY EQUIPMENT is commonly used to treat both sleep apnoea and hypopnoea.

170 Sleep apnoea is a chronic medical condition where the affected person repeatedly stops breathing during  
 171 sleep. These episodes last 10 seconds or more and cause oxygen levels in the blood to drop. It can be  
 172 caused by obstruction of the upper airway, resulting in obstructive sleep apnoea (OSA), or by a failure of the  
 173 brain to initiate a breath, called central sleep apnoea and is typically associated with heart failure PATIENTS.  
 174 Often, co-morbidities are present in PATIENTS with OSA which can contribute to their earlier onset including  
 175 hypertension, heart failure, and diabetes if left untreated. It can cause and worsen other medical conditions,  
 176 including hypertension, heart failure, and diabetes.<sup>1</sup>

177 **NOTE** SLEEP APNOEA BREATHING THERAPY EQUIPMENT is intended for the treatment of obstructive sleep apnoea and not  
 178 central sleep apnoea.

179 Hypopnoea refers to a transient reduction of airflow (often while asleep) that lasts for at least 10 seconds,  
 180 shallow breathing, or an abnormally low respiratory rate. Hypopnoea is less severe than apnoea (which is a  
 181 more complete loss of airflow). It can likewise result in a decreased amount of air movement into the lungs  
 182 and can cause oxygen levels in the blood to drop. It is more commonly due to partial obstruction of the upper  
 183 airway.<sup>2</sup>

184 ISO 80601-2-70 covers SLEEP APNOEA BREATHING THERAPY EQUIPMENT for PATIENT use. ISO 17510 applies to  
 185 MASKS and ACCESSORIES used to connect SLEEP APNOEA BREATHING THERAPY EQUIPMENT to the PATIENT. Figure  
 186 AA.1 shows this diagrammatically.

187

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<sup>1</sup> source: [http://sleepdisorders.about.com/od/glossary/g/Sleep\\_Apnea.htm](http://sleepdisorders.about.com/od/glossary/g/Sleep_Apnea.htm)

<sup>2</sup> source: <http://sleepdisorders.about.com/od/glossary/g/Hypopnea.htm>

188 **Medical Electrical Equipment — Part 2-70: Particular**  
 189 **requirements for basic safety and essential performance of**  
 190 **sleep apnoea breathing therapy equipment**

191 **201.1 Scope, object and related standards**

192 *IEC 60601-1:2005+A1:2012, Clause 1 applies, except as follows:*

193 **201.1.1 \* Scope**

194 *IEC 60601-1:2005+A1:2012, 1.1 is replaced by:*

195 This **particular** standard is applicable to the BASIC SAFETY and ESSENTIAL PERFORMANCE of SLEEP APNOEA  
 196 BREATHING THERAPY EQUIPMENT, hereafter referred to as ME EQUIPMENT, intended to alleviate the symptoms of  
 197 PATIENTS who suffer from **obstructive** sleep apnoea by delivering a therapeutic breathing pressure to the  
 198 PATIENT. SLEEP APNOEA BREATHING THERAPY EQUIPMENT is intended for use in the HOME HEALTHCARE  
 199 ENVIRONMENT by LAY OPERATORS as well as in professional healthcare institutions.

200 This **particular** standard excludes SLEEP APNOEA BREATHING THERAPY EQUIPMENT intended for use with  
 201 neonates.

202 This **particular** standard is applicable to ME EQUIPMENT or an ME SYSTEM intended for those PATIENTS who are  
 203 not dependent on mechanical ventilation such as PATIENTS with central sleep apnoea.

204 This **particular** standard is also applicable to those ACCESSORIES intended by their MANUFACTURER to be  
 205 connected to SLEEP APNOEA BREATHING THERAPY EQUIPMENT, where the characteristics of those ACCESSORIES  
 206 can affect the BASIC SAFETY or ESSENTIAL PERFORMANCE of the SLEEP APNOEA BREATHING THERAPY EQUIPMENT.

207 MASKS and application ACCESSORIES intended for use during sleep apnoea breathing therapy also are  
 208 addressed by ISO 17510.<sup>3)</sup> Refer to Figure AA.1 for items covered under this standard.

209 If a clause or subclause is specifically intended to be applicable to ME EQUIPMENT only, or to ME SYSTEMS only,  
 210 the title and content of that clause or subclause will say so. If that is not the case, the clause or subclause  
 211 applies both to ME EQUIPMENT and to ME SYSTEMS, as relevant.

212 HAZARDS inherent in the intended physiological function of ME EQUIPMENT or ME SYSTEMS within the scope of  
 213 this standard are not covered by specific requirements in this standard except in 7.2.13 and 8.4.1 of the  
 214 general standard.

215 NOTE 4 See also 4.2 of the General Standard.

216 This **particular** standard is not applicable to HOME HEALTHCARE ENVIRONMENT ventilators, ventilatory support  
 217 ME EQUIPMENT, emergency and transport ventilators, anaesthetic ventilators, high-frequency jet ventilators  
 218 (HFJVs), critical care ventilators or high-frequency oscillatory ventilators (HFOVs).<sup>15)</sup> This **particular** standard

3) To be published.