



**SLOVENSKI STANDARD**  
**oSIST prEN 62552:2011**  
**01-september-2011**

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**Gospodinjiski hladilni in zamrzovalni aparati - Značilnosti in preskusne metode**

Household refrigerating appliances - Characteristics and test methods

Haushalt-Kühl-/Gefriergeräte - Eigenschaften und Prüfverfahren

Appareils de réfrigération à usage ménager - Caractéristiques et méthodes

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**ICS:**

97.040.30	Hladilni aparati za dom	Domestic refrigerating appliances
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EUROPEAN STANDARD  
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EUROPÄISCHE NORM

**DRAFT**  
**prEN 62552**

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Will supersede EN 153:2006, EN ISO 15502:2005 + corr. Dec.2007

English version

**Household refrigerating appliances -  
Characteristics and test methods**  
(IEC 62552:2007, modified + corrigendum Mar. 2008)

Appareils de réfrigération à usage ménager -  
Caractéristiques et méthodes  
(CEI 62552:2007, modifiée  
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Haushalt-Kühl-/Gefriergeräte -  
Eigenschaften und Prüfverfahren  
(IEC 62552:2007, modifiziert  
+ corrigendum Mar. 2008)

This draft European Standard is submitted to CENELEC members for CENELEC enquiry.  
Deadline for CENELEC: 2011-11-25.

The text of this draft consists of the text of IEC 62552:2007 + corrigendum Mar. 2008 with common modifications prepared by CLC/TC 59X.

If this draft becomes a European Standard, CENELEC 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 CENELEC in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat 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.

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# CENELEC

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## Foreword

2 The text of the International Standard IEC 62552:2007 and its corrigendum March 2008,  
3 prepared by SC 59M, Performance of electrical household and similar cooling and freezing  
4 appliances, of IEC TC 59, Performance of household electrical appliances, together with the  
5 common modifications prepared by WG 08, Performance of electrical household and similar  
6 cooling and freezing appliances of the Technical Committee CENELEC TC 59X, Performance of  
7 household and similar electrical appliances, is submitted to the CENELEC enquiry.

8 This document will supersede EN ISO 15502:2005 and its corrigendum AC:2007 as well as  
9 EN 153:2006.

10 EN ISO 15502:2005 + AC:2007, *Household refrigerating appliances – Characteristics and test*  
11 *methods*, is based on ISO 15502:2005 and its corrigendum Cor 1:2007; this International  
12 Standard, prepared by subcommittee 5: Testing and rating of household refrigeration appliances  
13 of ISO technical committee 86, Refrigeration and air-conditioning, was transferred to the IEC  
14 subsequent to IEC SMB decision 127/11. ISO 15502:2005 and its corrigendum are superseded  
15 by IEC 62552:2007.

16 EN 153:2006, *Methods of measuring the energy consumption of electric mains operated*  
17 *household refrigerators, frozen food storage cabinets, food freezers and their combinations,*  
18 *together with associated characteristics*, was prepared by CEN/TC 44, Household refrigerating  
19 appliances and commercial refrigeration equipment.

20 The significant changes compared to the document to be replaced are the following:

- 21 – new compartment: zero star;
- 22 – new compartment: wine storage, combined with requirements for vibration, temperature  
23 fluctuation and humidity;
- 24 – new compartment: pantry;
- 25 – new compartment: multi-use;
- 26 – new compartment: through-the-door-devices;
- 27 – requirements for circumvention.

28 This draft European Standard has been prepared under Mandate M/459 given to CENELEC by  
29 the European Commission and the European Free Trade Association and covers essential  
30 requirements of EU Directive 2010/30/EU.

31 Clauses, subclauses, notes, tables, figures and annexes which are additional to those in  
32 IEC 62252:2007 are prefixed "Z".

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34 **Text of FprEN 62552**

35 The text of this draft European Standard consists of the text of the International Standard  
36 IEC 62552:2007 and its corrigendum March 2008 with the following common modifications.

37 **COMMON MODIFICATIONS**

38 **1 Scope**

39 *Replace the Note by:*

40 NOTE For the safety requirements applicable to household refrigerating appliances, see EN 60335-2-24; for noise requirements  
41 applicable to household refrigerators and freezers, see IEC 60704-2-14; and for additional safety requirements applicable to the  
42 refrigerating systems of household refrigerating appliances, see ISO 5149.

43 *Add the following after the note:*

44 This draft European Standard also specifies, as far as necessary, the test methods which shall  
45 be applied in accordance with

- 46 • the Commission Delegated Regulation (EU) No 1060/2010 of 28 September 2010  
47 supplementing Directive 2010/30/EU of the European Parliament and of the Council with  
48 regard to energy labelling of household refrigerating appliances, and
- 49 • the Commission Regulation (EC) No 643/2009 of 22 July 2009, implementing Directive  
50 2005/32/EC of the European Parliament and of the Council with regard to ecodesign  
51 requirements for household refrigerating appliances.

52 **2 Normative references**

53 *Delete the reference to ISO 817.*

54 *Replace the reference to IEC 60335-2-24:2002 as follows:*

55 IEC 60335-2-24:2002 + A1:2005 + A2:2007, *Household and similar electrical appliances –*  
56 *Safety – Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances*  
57 *and ice-makers*

58 **3 Terms, definitions and symbols**

59 *Add the following definitions after 3.1.7:*

60 **3.1.Z1**

61 **wine storage appliance**

62 refrigerating appliance having one or more and only compartments exclusively designed for storage of  
63 wine

64 NOTE An appliance containing compartment(s) which does not fulfil all requirements as specified for wine storage compartments  
65 cannot be called wine storage appliance.

66 **3.1.Z2**

67 **multi door or other appliances**

68 refrigerating appliance having two or more compartments, each one specified according to one of  
69 specifications as to Table 2 and being not covered by definitions as to 3.1.1 till 3.1.Z1

70 **3.1.Z3**  
 71 **thermoelectric refrigerating appliance**  
 72 refrigerating appliance where the cooling uses the Peltier effect

73 *Add the following definitions after 3.3.3:*

74 **3.3.Z1**  
 75 **zero-star compartment**  
 76 low-temperature compartment intended for the freezing and storage of ice and for short time storage of  
 77 frozen food in which the temperature is not warmer than 0 °C

78 *Add the following definitions after 3.3.5.5:*

79 **3.3.5.Z1**  
 80 **frozen-food storage compartment**  
 81 low-temperature compartment intended specifically for the storage of frozen food  
 82 NOTE Frozen-food storage compartments are classified according to temperature, see 3.3.5.1 to 3.3.5.5.

83 **3.3.5.Z2**  
 84 **wine storage compartment**  
 85 compartment exclusively designed either for short-term wine storage to bring wine to the ideal drinking  
 86 temperature or for long-term storage of wine, with the following features:

87 – a storage temperature range, either pre-set or set manually according to the manufacturer's  
 88 instructions, in the range from +5 °C to +20 °C, each compartment providing  $t_{wma} \leq +12$  °C;

89 NOTE The range from +5 °C to +20 °C indicates the maximum allowed range, no target values. If there is more than one  
 90 wine storage compartment in one appliance, the temperature setting range can also be subdivided covering only part of the  
 91 temperature range by each wine storage compartment.

92 – storage temperature(s) within a variation over time of less than 0,5 K at each declared ambient  
 93 temperature specified by the climate class for household refrigerating appliances (see 8.Z1);

94 – active or passive control of the compartment humidity within a range from 50 % to 80 % relative  
 95 humidity;

96 – constructed to reduce the transmission of vibration to the compartment, whether from the refrigerator  
 97 compressor or from any external source

98 **3.3.5.Z3**  
 99 **pantry compartment**  
 100 compartment intended for the storage of particular foods or beverages at a temperature warmer than that  
 101 of the cellar compartment

102 **3.3.5.Z4**  
 103 **multi-use-compartment**  
 104 compartment intended for use at two or more of the temperatures of the compartment types in Table 2,  
 105 capable of being set by the user to remain at the operating temperature range applicable to each  
 106 compartment type

107 NOTE Where temperatures can shift to a different operating range for a period of limited duration only, the compartment is not a  
 108 'multi-use compartment'.

109 **3.3.5.Z5**  
 110 **low ambient switch**  
 111 device which will be activated at the low ambient temperatures, automatically or manually, to balance the  
 112 temperatures in different compartment types used in combination if applicable

113 **3.3.5.Z6**  
 114 **thermal accumulator**  
 115 device with thermal capacity provided by manufacturer

116 **Replace Definitions 3.5.3, 3.5.4, 3.5.5 and 3.5.6 by:**

117 **3.5.3**

118 **overall dimensions**

119 space – height, width and depth – with doors or lids closed

120 **3.5.4**

121 **overall space required in use**

122 total space – height, width and depth – with doors or lids open

123 **3.5.5**

124 **gross volume**

125 volume within the inside liner of the refrigerating appliance or of a compartment with an external door, in  
126 every case without internal fittings and with doors or lids closed

127 **3.5.6**

128 **storage volume**

129 part of the gross volume of any compartment that remains after deduction of the volume of components  
130 and spaces unusable for the storage of food

131 NOTE See 7.2.

132 *In Definition 3.5.7, **delete** the note.*

133 **Add the following definitions after 3.6.23:**

134 **3.6.Z1**

135 **wine compartment storage temperature**

136  $t_{wma}$

137 mean temperature of the wine storage compartment

138 **3.6.Z2**

139 **humidity wine compartment**

140  $RH_{wim}$

141 internal relative humidity in a wine storage compartment as integrated time average

142 **3.6.Z3**

143 **pantry compartment storage temperature**

144  $t_{pma}$

145 mean temperature of the pantry storage compartment

146 **Add the following definitions after 3.7.4:**

147 **3.7.Z1**

148 **humidity control device**

149 device which automatically regulates the humidity level inside a compartment

150 **3.7.Z2**

151 **ambient air exchange device**

152 device which allows to exchange the air in a refrigerating compartment with ambient air, either fix as to  
153 manufacturer design, or to be controlled automatically, or to be set manually by the user as to  
154 manufacturer's instructions

155 NOTE The hole for defrosting water draining will not be considered as an air exchange device.

156 **3.8 Symbols**157 **Replace the content by:**

158	$T_i, T_{ci}, T_{wi}, T_{ai}$	temperature measurement positions
159	$t_i$	instantaneous temperature value (fresh food compartment)
160	$t^{(*)}, t^*, t^{**}, t^{***}$	The temperatures of each compartment, cabinet or section is the maximum temperature of any M-package in that compartment, cabinet or section.
161		
162	$t_{amb1}, t_{amb2}$	instantaneous ambient temperature value
163	$t_{amb1.m} / t_{amb2.m}$	integrated time average of $t_{amb1}/t_{amb2}$
164	$t_{amb.ma}$	arithmetic average of $t_{amb1.m}$ and $t_{amb2.m}$
165	$t_{ci}$	instantaneous temperature value (cellar compartment)
166	$t_{cc}$	instantaneous temperature value (chill compartment)
167	$t_{wi}$	instantaneous temperature value (wine storage compartment)
168	$t_{pi}$	instantaneous temperature value (pantry compartment)
169	$t_{im}$	integrated time average of $t_i$
170	$t_{amim}$	integrated time average of $t_{ami}$ (ambient temperature)
171	$t_{cim}$	integrated time average of $t_{ci}$
172	$t_{wvim}$	integrated time average of $t_{wi}$
173	$t_{pvim}$	integrated time average of $t_{pi}$
174	$t_{va}$	instantaneous arithmetic average of $t_1, t_2, t_3$
175	$t_{ca}$	instantaneous arithmetic average of $t_{c1}, t_{c2}, t_{c3}$
176	$t_{ma}$	arithmetic average of $t_{1m}, t_{2m}, t_{3m}$
177	$t_{cma}$	arithmetic average of $t_{c1m}, t_{c2m}, t_{c3m}$
178	$t_{wma}$	arithmetic average of $t_{w1m}, t_{w2m}, t_{w3m}$
179	$t_{pma}$	arithmetic average of $t_{p1m}, t_{p2m}, t_{p3m}$
180	$RH_{wi}$	instantaneous relative humidity (wine storage compartment)
181	$RH_{wim}$	integrated time average of $RH_{wi}$
182	$E_{24h}$	energy consumption of household refrigerating appliance in kWh/24 h (conditions as in Table 5)
183		
184	$i$	subscript representing 1, 2 or 3



185 **4 Classification**

186 *Add the following text after Table 1:*

187 If the lowest declared temperature is not within standard climate classes, the lowest ambient  
188 temperature is the temperature where the appliance can be used fulfilling the storage test  
189 requirements. This temperature shall be indicated in the user manual and the test report.

190 **5 Materials, design and manufacture**

191 *Add the following after 5.7.6:*

192 **5.7.Z1** Wine storage appliances and wine storage compartments shall be constructed by using  
193 suitable means to reduce transmission of vibration to the compartment(s), whether from the  
194 refrigerating system or from any external source.

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 62552:2013

<https://standards.iteh.ai/catalog/standards/sist/4aad3a5a-5ed8-4eab-a712-cca88d295650/sist-en-62552-2013>

195 **6 Storage temperatures**196 **Replace Table 2 by the following table:**

197

**Table 2 – Storage temperatures**

°C									
Fresh-food storage compartment		Food freezer and three-star compartment/cabinet	Two-star compartment/section	One-star compartment	Cellar compartment	Chill compartment	Wine compartment	Zero-star compartment	Pantry compartment
$t_{1m}, t_{2m}, t_{3m}$	$t_{ma}$	$t^{***}$	$t^{**}$	$t^*$	$t_{cm}$	$t_{cc}$	$t_{wma}^{a,b}$	$t^{(*)}$	$t_{pma}$
$0 \leq t_{1m}, t_{2m}, t_{3m} \leq 8$	$\leq +4$	$\leq -18^a$	$\leq -12^a$	$\leq -6$	$+8 \leq t_{cm} \leq +14$	$-2 \leq t_{cc} \leq +3$	$+5 \leq t_{wma} \leq +20$ $t_{wma} \leq +12$	$t^{(*)} \leq 0$	$+14 < t_{pma} < +20$
<p><sup>a</sup> As a result of a defrost cycle, the storage temperatures of frost free and/or adaptive defrost refrigerating appliances are permitted to rise by no more than 3 K during a period not greater than 4 h or 20 % of the duration of the operating cycle, whichever is the shorter. An example of an operating cycle for a frost-free refrigerator-freezer is given in Figure 1. For wine storage compartments applies that the maximum temperature <math>t_{wi}</math> shall not be more than 1,5 K above integrated time average temperature <math>t_{wim}</math> for each measuring point.</p> <p><sup>b</sup> The range +5 °C to +20 °C indicates the maximum allowed range, no target values. If there are more than one wine storage compartment in one appliance the temperature setting range can also be subdivided covering only part of the temperature range by each wine storage compartment. Each compartment shall provide <math>t_{wma} \leq +12</math> °C.</p>									

198

199

## 200 **7 Determination of linear dimensions, volumes and areas**

201 **Replace title and text of 7.2.4 by:**

### 202 **7.2.4 Storage volume of fresh-food storage, chill, cellar, pantry and wine storage** 203 **compartments**

204 The storage volume of the fresh-food storage, chill, cellar, pantry and wine storage compartment  
205 shall be the gross volume of the compartment minus

- 206 – the volume of the evaporator space,
- 207 – the volume of any housings (such as those for interior lights, temperature-control devices  
208 and other devices e.g. non removable telescopic guides),
- 209 – the volume of shelves, partitions, retainers and other accessories whose wall thickness is  
210 greater than 13 mm according to 7.2.9.1,
- 211 – the space between the inner door protrusion and the inner liner of the fresh-food storage  
212 compartment, chill, cellar pantry and wine storage compartment, unless it is intended for the  
213 storage of food.

214 Where the volumes of the cellar compartment, pantry and wine storage compartment and  
215 fresh-food storage compartment are adjustable relative to one another by the user, the storage  
216 volumes of these compartments shall be determined with the cellar compartment, pantry or/and  
217 wine storage compartment adjusted to its minimum and maximum volumes.

218 **Add the following sentence at the end of 7.2.5.2:**

219 Where the evaporator is covered by fix means, the depth of the evaporator space shall be taken  
220 as the mean horizontal distance to the foremost part of the protection cover.

221 **Replace the text of 7.2.5.3 by:**

222 The width of the evaporator space shall be the overall horizontal width of the evaporator itself or  
223 the protection or cover where applicable (neglecting suction headers near the top of the  
224 evaporator) or, if side ribs are used, the overall width including the ribs.

225 If there is less than 70 mm horizontal distance between the evaporator or the ribs or the  
226 protection or cover where applicable and an inside wall of the enclosed space of the cabinet,  
227 such space shall be considered as part of the evaporator space.

228 **Replace the text of 7.2.5.4 by:**

229 The height of the evaporator space shall be the mean vertical distance between the lower limit of  
230 the evaporator or the protection or cover where applicable and the upper partition of the food  
231 storage compartment.

232 If the free space between the upper surface or top of the evaporator or the protection or cover  
233 where applicable and the upper partition of the food storage compartment exceeds 40 mm, it  
234 shall be added to the storage volume of the fresh-food storage compartment.

235 The evaporator height shall include any internal drip tray and/or drip collector, except in the case  
236 when the storage height of the drip tray is greater than 40 mm and a definite manual operation is  
237 also needed to initiate defrosting.

238 **Replace title and text of 7.3.2.7.2 by:**

239 **7.3.2.7.2 Fresh-food storage compartment, chill, cellar pantry and wine storage**  
240 **compartments**

241 Any part of a full shelf, basket or the bottom of a compartment having less than 100 mm vertical  
242 clearance above, when all the shelves and baskets are in position, shall be excluded when  
243 calculating the storage area. However, it is admissible that for one full shelf or basket the vertical  
244 clearance may be reduced to not less than 80 mm (see Figure 19 b)).

245 For specific shelves as bottles shelves used in e.g. wine storage compartments does no vertical  
246 clearance requirement apply.

247 **Replace title and text of 7.3.4.1 by:**

248 **7.3.4.1 Fresh-food storage compartment, chill, cellar and wine storage compartments**

249 The area of the interior surface of the bottom of a suspended container and the area of the shelf  
250 immediately below shall not both be counted, unless the vertical clearance between this shelf  
251 and the exterior surface of the bottom of the container is at least 100 mm. For specific shelves  
252 as bottles shelves used in e.g. wine storage compartments does no vertical clearance  
253 requirement apply.

254 Nevertheless, in the case of one container – and one only – this minimum clearance may be  
255 reduced to 80 mm to the extent where this possibility has not been applied for the shelves.

256 If the minimum vertical clearance within a suspended container, as measured between the  
257 interior surface of the bottom and the cover, or to the shelf immediately above, is less than  
258 40 mm, the bottom area of the container shall not be added.

259 **Add the following new subclause after 7.3.4.2:**

260 **7.3.4.Z1 Evaluation of bottle capacity for wine storage compartments**

261 For the evaluation of the rated capacity of bottles 0,75 l bottles or equivalent substitution with  
262 dimension as specified in Figure Z1 shall be used.

263 Bottles to be filled with water to provide a total weight of each bottle of 1 200 g ± 50 g to  
264 consider the deformation of shelves.

265 Removable parts which are stated by the manufacturer as necessary for the proper thermal and  
266 mechanical functioning of the wine storage compartment have to be placed in its intended  
267 position as to manufacturer's instructions.

268 Bottles will be stacked on each area intended to carry bottles in normal usage as to following  
269 rules:

- 270 – clearance to wall/back/door as to manufacturer's instructions;
- 271 – in the absence of instructions the rear end of shelves and 5 mm clearance to door are  
272 considered as limit, proper cooling function has to be ensured;
- 273 – bottles placed in door shelves may touch door liner;
- 274 – if evaporator is covered by fix means for protection bottles can stack till the protection,  
275 proper cooling function has to be ensured;
- 276 – bottles can be placed reverse and interleave;

- 277 – bottles can be in touch with side walls if nothing else stated by manufacturer;
- 278 – bottles can be placed horizontal or vertical, inclined if fixed means provide incline position;
- 279 – movable parts like telescopic shelves have to be kept movable and accessible under loading
- 280 conditions.

281 A sketch of the bottle loading plan showing the location of bottles for evaluation of the bottle  
282 capacity for wine storage compartments shall be included in test report.

## 283 8 General test conditions

### 284 8.2 Ambient temperatures

285 **Replace the text by:**

286 Local ambient temperatures  $t_{amb1}$  and  $t_{amb2}$  are measured at two points  $T_{a1}$  and  $T_{a2}$ , located at the  
287 vertical and horizontal centreline of the sides of the refrigerating appliance and at a distance of  
288 350 mm from the refrigerating appliance (see Figure 3).

289 The overall ambient temperature  $t_{amb.ma}$  for a single appliance is the arithmetical average of the  
290 time-integrated temperatures  $t_{amb1.m}$  and  $t_{amb2.m}$ . It is the value used for the tests.

291 Ambient temperatures are measured using copper or brass cylinders (see 8.7) at each of the two  
292 measurement points.

293 Ambient temperature sensors shall be shielded from any sources or sinks of radiant heat in the  
294 test room, including conditioning equipment, external windows or other appliances under test.

295 During all tests the integrated time average temperatures  $t_{amb1.m}$  and  $t_{amb2.m}$  shall be within  
296  $\pm 0,5$  K from the arithmetic average ambient temperature  $t_{amb.ma}$ .

297 The vertical ambient temperature gradient from the platform specified in 8.4 to a height of 2 m  
298 shall not exceed 1 K/m measured at the same vertical axis as for the ambient temperature  
299 measurement.

300 Tests shall be carried out under the following conditions of measured ambient temperature.

301 a) For checking the storage temperatures:

302 +10 °C and +32 °C for class SN refrigerating appliances;

303 +16 °C and +32 °C for class N refrigerating appliances;

304 +16 °C and +38 °C for class ST refrigerating appliances;

305 +16 °C and +43 °C for class T refrigerating appliances.

306 For a rated range of climate classes, tests shall be performed at the extreme ambient  
307 temperatures of the range of rated classes.

308 EXAMPLE For refrigerating appliances rated from SN to T, tests are performed at +10 °C and at +43 °C.

309 b) For checking the energy consumption, temperature rise time, freezing capacity and ice-  
310 making capacity of all refrigerating appliances, as applicable:

311 +25 °C for class SN, class N, class ST and class T refrigerating appliances.

312 c) For all other tests: at the temperature stated in the test specifications.

### 313 8.3 Humidity

314 **Replace the text by:**

315 Unless otherwise specified, relative humidity shall not exceed 75 %.

316 For the test measuring of humidity in wine storage compartments, the relative ambient humidity  
317 shall be  $50 \% \leq RH \leq 75 \%$  (see 8.Z2).

### 318 8.4 Installation of refrigerating appliances

319 **Add the following note after a):**

320 NOTE Stops are physically existing devices which fix the distance between the rear of the appliance and the wall behind the  
321 appliance. They can either be permanently attached to the appliance or provided as separate parts, which have to be installed  
322 by the user.

### 323 8.5 Test packages

324 **In 8.5.2, replace the last sentence of b) by:**

325 For the measurement of chill compartments and zero-star compartment, only test package b),  
326 with a freezing point of -5 °C, shall be used.

### 327 8.6 Operating requirements for refrigerating appliances

328 **At the end of 8.6.3.1, add the following sentence:**

329 Where the refrigerating appliance has a rated voltage within the range between 220 V and 240 V,  
330 it shall be tested at  $230 V \pm 1 \%$  with a frequency of  $50 \text{ Hz} \pm 1 \%$ .

331 **At the end of 8.6.4, add the following sentences:**

332 If position of shelves is adjustable, those shall be spread equally in the cabinet.

333 For wine storage compartments shelves, baskets and container shall be in position as defined in  
334 7.3.4.Z1.

335 **Replace the text of 8.6.5 by:**

336 Accessories that are not necessary for the normal operation of the refrigerating appliance shall  
337 remain non-operational during testing, as long as nothing specific is specified in any other  
338 paragraph.

339 **Add the following new subclause after 8.6.5:**

#### 340 **8.6.Z1 Through-the-door devices**

341 If the refrigerating appliance is fitted with a through the door device this shall be closed. Every  
342 energy consuming additional device (e.g. display, lightening etc.) is to be switched on when  
343 starting the test. Operation like ice or water dispensing will not be performed.

#### 344 **8.7 Measuring instruments**

345 *In 8.7.1, replace the 5<sup>th</sup> paragraph by:*

346 Temperature-measuring instruments shall have an overall accuracy of measurement of not  
347 greater than  $\pm 0,3$  K. This accuracy shall be maintained throughout the temperature measuring  
348 circuit. Regular calibration of temperature equipment is required at the temperature range of  
349 interest.

350 **Replace the text of 8.7.2 by:**

351 The relative humidity shall be measured and recorded at a point which is representative.  
352 The accuracy of the measuring instruments shall be such that the result, expressed as the dew  
353 point, shall have an overall accuracy of measurement of not greater than  $\pm 0,3$  K.

354 **Replace the text of 8.7.3 by:**

355 Watt-hour meters shall be readable to 0,001 kW h and be accurate to within  $\pm 1$  % of the total  
356 energy consumption measured during the test period (i.e., 1 % of reading). Calibration of Watt-  
357 hour meters shall be performed at the range used in the measurements.

358 The measuring accuracy shall be stated in the test report.

#### 359 **8.8 Measurement of storage temperature**

360 **Replace the title and text of 8.8.1 by:**

##### 361 **8.8.1 Fresh-food storage compartment, cellar compartment and pantry compartment**

362 The temperatures  $t_{1m}$ ,  $t_{2m}$  and  $t_{3m}$  (see 3.6.2 and 3.8),  $t_{c1m}$ ,  $t_{c2m}$ ,  $t_{c3m}$  (see 3.6.4 and 3.8) and  $t_{p1m}$ ,  $t_{p2m}$ ,  
363  $t_{p3m}$  (see 3.6.Z3 and 3.8) shall be measured using copper or brass cylinders, except for the  
364 freezing test of refrigerator-freezers, when they shall be measured in M-packages suspended  
365 and located at the temperature-sensing points.

366 For determining the storage temperature, the temperature-sensing points shall be located at  $T_1$ ,  
367  $T_2$ ,  $T_3$ ,  $T_{c1}$ ,  $T_{c2}$ ,  $T_{c3}$ , and  $T_{p1}$ ,  $T_{p2}$ ,  $T_{p3}$  as shown in Figures 14 and 15, halfway between the rear  
368 internal wall of the appliance and the internal wall of the closed door.

369 The temperatures  $t_{1m}$ ,  $t_{2m}$  and  $t_{3m}$ , and  $t_{c1m}$ ,  $t_{c2m}$  and  $t_{c3m}$  and  $t_{p1m}$ ,  $t_{p2m}$  and  $t_{p3m}$  at the temperature-  
370 sensing points shall be the integrated time averages of  $t_1$ ,  $t_2$  and  $t_3$ , and  $t_{c1}$ ,  $t_{c2}$  and  $t_{c3}$ , and  $t_{p1}$ ,  $t_{p2}$   
371 and  $t_{p3}$  respectively, during an operating cycle with an integral step of 60 s or less.

372 The storage temperatures  $t_{ma}$  (see 3.6.2),  $t_{cma}$  (see 3.6.4) and  $t_{pma}$  (see 3.6.Z3) are the arithmetical  
373 average of the mean temperatures  $t_{1m}$ ,  $t_{2m}$  and  $t_{3m}$  and  $t_{c1m}$ ,  $t_{c2m}$  and  $t_{c3m}$  and  $t_{p1m}$ ,  $t_{p2m}$  and  $t_{p3m}$   
374 respectively.