



SLOVENSKI STANDARD
oSIST prEN IEC 60704-2-1:2025
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Gospodinjski in podobni električni aparati - Postopek preskušanja za ugotavljanje zvočnega hrupa v zraku - 2-1. del: Posebne zahteve za suhe sesalnike

Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-1: Particular requirements for dry vacuum cleaners

Elektrische Geräte für den Hausgebrauch und ähnliche Zwecke - Prüfvorschrift für die Bestimmung der Luftschallemission - Teil 2-1: Besondere Anforderungen an Trockensauger

Appareils électrodomestiques et analogues - Code d'essai pour la détermination du bruit aérien - Partie 2-1: Exigences particulières pour les aspirateurs à sec

Ta slovenski standard je istoveten z: prEN IEC 60704-2-1:2025

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ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
97.080	Aparati za čiščenje	Cleaning appliances

oSIST prEN IEC 60704-2-1:2025 **en**



59F/518/CDV

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SECRETARIAT: Sweden	SECRETARY: Mr Ingvar Eriksson
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 59, TC 61	HORIZONTAL FUNCTION(S):
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<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-1: Particular requirements for dry vacuum cleaners

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39 INTERNATIONAL ELECTROTECHNICAL COMMISSION

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42 **HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –**
43 **TEST CODE FOR THE DETERMINATION**
44 **OF AIRBORNE ACOUSTICAL NOISE**

45
46 **Part 2-1: Particular requirements for dry vacuum cleaners**

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50 **FOREWORD**

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87 IEC 60704-2-1 has been prepared by subcommittee 59F: Surface cleaning appliances, of IEC
88 technical committee 59: Performance of household and similar electrical appliances. It is an
89 International Standard.

90 This fifth edition cancels and replaces the fourth edition published in 2020. This edition
91 constitutes a technical revision.

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

- 94 a) alignment with IEC 60704-1:2021;

- 95 b) addressing consumer relevant testing aspects;
 96 c) robustness of standards and closing potential loop holes

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

98
 99 Full information on the voting for its approval can be found in the report on voting indicated in
 100 the above table.

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

102 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
 103 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement available
 104 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
 105 described in greater detail at www.iec.ch/publications.

106 This document is intended to be used in conjunction with IEC 60704-1:2021, *Household and*
 107 *similar electrical appliances – Test code for the determination of airborne acoustical noise –*
 108 *Part 1: General requirements*.

109 The relevant text of IEC 60704-1:2021 as amended by this document establishes the test code
 110 for vacuum cleaners.

111 This document supplements or modifies the corresponding clauses in IEC 60704-1:2021. When
 112 a particular subclause of IEC 60704-1:2021 is not mentioned in this document, that subclause
 113 is applicable as far as reasonable. Where this standard states "addition", "modification" or
 114 "replacement", the relevant requirements, test specifications or explanatory matter in Part 1
 115 should be adapted accordingly.

116 and Subclauses, tables, and figures that are additional to those in IEC 60704-1:2021 are numbered
 117 starting from 101. Additional annexes are lettered AA, BB, etc.

118 Unless notes are in a new subclause or involve notes in IEC 60704-1:2021, they are numbered
 119 starting from 101, including those in a replaced clause or subclause.

120 In this standard, the following print types are used:

- 121 • terms defined in Clause 3: bold type.

122 A list of all the parts in the IEC 60704 series, published under the general title *Household and*
 123 *similar electrical appliances – Test code for the determination of airborne acoustical noise*, can
 124 be found on the IEC website.

125 The committee has decided that the contents of this document will remain unchanged until the
 126 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
 127 specific document. At this date, the document will be

- 128 • reconfirmed,
- 129 • withdrawn,
- 130 • replaced by a revised edition, or
- 131 • amended.

132

133

INTRODUCTION

134 The measuring conditions specified in this document provide for sufficient accuracy in
135 determining the noise emitted and comparing the results of measurements taken by different
136 laboratories, whilst simulating as far as possible the practical use of vacuum cleaners.

137 It is recommended to consider the determination of noise levels as part of a comprehensive
138 testing procedure covering many aspects of properties and performance of household vacuum
139 cleaners.

140 NOTE As stated in the introduction to IEC 60704-1, this test code is concerned with airborne noise only.

141

142

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143 **HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –**
144 **TEST CODE FOR THE DETERMINATION**
145 **OF AIRBORNE ACOUSTICAL NOISE**

146
147 **Part 2-1: Particular requirements for dry vacuum cleaner**
148

149
150
151 **1 Scope**

152 *Replacement:*

153 This particular requirements specify the determination of airborne acoustical noise of mains
154 operated and cordless dry vacuum cleaners for household use or under conditions similar to
155 those in households.

156 For **wet and dry vacuum cleaners** the dry cleaning function shall apply. The wet cleaning
157 function shall be measured in accordance with IEC 60704-2-20:202x.

158 This document does not apply to vacuum cleaners for industrial or professional purposes.

159 NOTE Particular requirements for dry cleaning robots are specified in IEC 60704-2-17.

160 This document describes the determination of the noise emission of vacuum cleaners under
161 normal operating conditions on carpet and hard floor in accordance with 4.6 of
162 IEC 62885-2:2021.

163 NOTE 101 For determining and verifying noise emission values declared in product specifications, see
164 IEC 60704-3.

165
<https://standards.iteh.ai/catalog/standards/sist/4c29c70b-c530-43cf-8060-c163c67c5f41/osist-pren-iec-60704-2-1-2025>
166 **2 Normative references**

167 *Addition:*

168 IEC TS 62885-1:2020, *Surface cleaning appliances – Part 1: General requirements on test*
169 *material and test equipment.*

170
171 **3 Terms and definitions**

172 *Addition:*

173 **3.101**
174 **wet and dry vacuum cleaner**

175 appliance designed to remove liquid, dust and debris from a floor surface by means of an airflow
176 created by a vacuum developed within the unit

177 **3.102**
178 **cleaning head**
179 plain nozzle or brush attached to a connecting tube, or a power nozzle, separate or part of the
180 cleaner housing, and that part of a dry vacuum cleaner which is applied to a surface to be
181 cleaned

182 [SOURCE: IEC 62885-2:2021, 3.3]

183 **3.103**
184 **active nozzle**
185 **cleaning head** provided with a driven agitation device to assist dirt removal

186 Note 1 to entry: The agitation device can be driven by an incorporated electric motor (motorized nozzle), an
187 incorporated turbine powered by the air flow (air-turbine nozzle) or an incorporated friction or gear mechanism
188 actuated by moving the **cleaning head** over the surface to be cleaned (mechanical nozzle).

189 [SOURCE: IEC 62885-2:2021, 3.2]

190 **3.104**
191 **standard Wilton test carpet**
192 Wilton carpet on which the vacuum cleaner and its **cleaning head** is placed for the
193 measurement

194 Note 1 to entry: The specification of the **standard Wilton test carpet** can be found in IEC TS 62885-1.

195 **3.105**
196 **standard hard floor**
197 part of the floor on which the vacuum cleaner and its **cleaning head** is placed for the
198 measurement

199

200 **4 Measurement methods and acoustical environments**

201 **4.2 Direct method**

202 *Addition:*

203 If pure tone components are present in the noise emitted by the source, the estimated standard
204 deviation of the measured sound pressure levels in the special reverberation room may
205 increase. In such cases additional microphone positions or source positions may be necessary,
206 as specified in ISO 3743-2.

207 **4.3 Comparison method**

208 *Addition:*

209 If pure tone components are present in the noise emitted by the source, the estimated standard
210 deviation of the measured sound pressure levels in the hard-walled test room or in the special
211 reverberation room may increase. In such cases additional microphone positions or source
212 positions may be necessary, as specified in ISO 3743-1 or ISO 3743-2.

213 **4.4 Acoustical environment**

214 **4.4.1 General requirements and criterion for adequacy of the test environment**

215 *Replacement:*

216 The methods specified in ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring
217 noise emitted by electric vacuum cleaners.

218 The method specified in ISO 3744 is applicable to noise sources of any size. When applying
219 ISO 3743-1 and ISO 3743-2, the maximum size of the appliance under test should fulfil the
220 requirements specified in 1.2 of ISO 3743-1:2010 and 1.3 of ISO 3743-2:2018.

221 4.5 Measurement uncertainty

222 4.5.2 Standard deviations on repeatability and reproducibility and standard 223 deviations related to declaration and verification

224 *Replacement:*

225 For vacuum cleaners designed for cleaning carpets the estimated values of standard deviations
226 of sound power levels determined in accordance with this part of IEC 60704 are provided in
227 Table 1.

228 **Table 1 – Standard deviations of sound power levels determined on carpets**

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,3	0,8

229
230 For vacuum cleaners designed for cleaning hard floors the estimated values of standard
231 deviations of sound power levels determined in accordance with this part of IEC 60704 are
232 provided in Table 2.

233 **Table 2 – Standard deviations of sound power levels determined on hard floors**

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,2	0,6

234
235 NOTE 101 The values in Table 1 and Table 2 are derived from the results of a round robin test (RRT) conducted in
236 2010/2011 with 4 different vacuum cleaners (passive and active) in 8 participating laboratories.

237
238 For the purpose of determining and verifying declared noise emission values for vacuum
239 cleaners designed for cleaning carpets, in accordance with IEC 60704-3, the following values
240 provided in Table 3 apply:

241 **Table 3 – Standard deviations for declaration and verification
242 for vacuum cleaners for carpets**

Standard deviation (dB)		
σ_p (production)	σ_t (total)	σ_M (reference)
0,5 to 1,0	0,9 to 1,3	1,5

243
244 For the purpose of determining and verifying declared noise emission values for vacuum
245 cleaners designed for cleaning hard floors, in accordance with IEC 60704-3, the following
246 values provided in Table 4 apply: