

I. Device under test

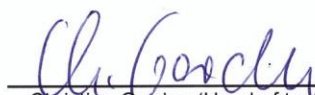
Test object: Universal ear plug
Noizezz swim
Trade name / Model reference: Noizezz sleep
Noizezz fly
State of construction: Production
Serial No.: -- We.: 1619 – 1621
Manufacturer: Noizezz
Country: The Netherlands
Arrival test sample: 04-09-2015



Issue date of test report: 25-04-2016

Amount of pages: 12

Enclosures: 13-14


Christian Gerdes (Head of test laboratory)




Anja Biedermann (Testing person)



fly

swim

fly

sleep

sleep

swim

II. Client:

Noizezz
Wijkermeerstraat 16
2131 HA Hoofddorp
The Netherlands

Contact Person: Franziska Lienau
Tel.-Nr.: +31 (0)23 5544010
E-Mail: f.lienau@noizezz.com
WEB: www.noizezz.com

III. Accredited Laboratory

PZT GmbH
An der Junkerei 48 F
26389 Wilhelmshaven
Germany

Tel.-No.: +49 (0) 4421 / 70340
Fax-No.: +49 (0) 4421 / 70421
E-Mail: office@pzt-lab.de



Accredit by DAkkS Certificate No. D-PL-12127-01-01
Notified Body Number: 1974

Reference: Ge / AB

Third-party laboratory: --

IV. Testing Standards:

EN 352-2:2002 (DIN EN 352-2:2003)	Hearing Protectors, General requirements Part 2: Ear-Plugs
EN 13819-1:2002 (DIN EN 13819-1:2003)	Hearing Protectors, Tests Part 1: Physical test methods
EN 13819-2:2002 (DIN EN 13819-2:2003)	Hearing Protectors, Tests Part 2: Acoustical test methods
ISO 4869-1: 1990 (DIN EN ISO 4869-1:1991)	Hearing Protectors Part 1: Subjective method for measurement of sound attenuation
ISO 4869-2: 1994 (DIN EN ISO 4869-2 1995)	Acoustics- Hearing protectors- Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn
DIN EN ISO 4869-2 Corrigenda: 2007	Acoustics- Hearing protectors- Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn
IEC 60268-1:1988	Sound general equipment; General
ISO 8253-2:2009 (DIN ISO 8253-2:2009)	Audiometric test methods Part 2: Sound field audiometry with pure tone and narrow band test signals

V. Conformance test conducted on: 10-12-2015 to 25-01-2016**VI. Measurement equipment**

The measurements were conducted at measurement station No. 1 / 2.

The measuring equipment is calibrated regularly; the measuring devices are maintained regularly.

VII. Testing environment

The climatic conditions in acc. were continuously controlled during the approval test. The requirements according to EN 13819-12002 were met.

Temperature: 22 ±5 °C

Humidity: < 85 %

VIII. General notes

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IX. Abbreviations

P	requirement fulfilled
F	requirement <u>not</u> fulfilled
X	no requirements defined
N/A	requirement <u>not</u> relevant
#	requirement <u>not</u> specified
U	for result see test report from third-party laboratory
M	Mandatory
N	None

Additional information about the device under test:

The earplug is available in four sizes and three colors. No filter element is provided as the rear is closed.



Test-Report No.: 1511504-1

Date: 25-04-2016

Ear Plugs EN 352-2

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Results Ear-plugs EN 352-2

4 Requirements

4.1 Sizing and adjustability

4.1.1 Aural ear-plugs

P

The nominal diameter or, if appropriate, the range of nominal diameters of the ear-plug, shall be tested in accordance with EN 13819-1:2002, 5.2 and reported.

[illegible][illegible][illegible][illegible]

4.1.2 Headband ear-plugs

N/A

Requirements:

Adjustability shall be tested in accordance with EN 13819-1:2002, 5.3 and the following requirements satisfied, as appropriate. In the case of ear-plugs incorporating a means to adjust the headband force, these requirements shall be satisfied at both the maximum and the minimum force setting.

Adjustability of the headband ear-plugs (5.3 EN 13819-1)										
adjustable: yes / no										
Headband										
Sample	1	2	3	4	5	6	7	8	9	10
Test height / Test width										
115 / 125 (S)										
115 / 145 (S/M)										
130 / 125 (S/M)										
130 / 145 (S/M/L)										
130 / 155 (M/L)										
140 / 145 (M/L)										
140 / 155 (L)										

Behind-the-head and under-the-chin headband ear-plugs										
Sample	1	2	3	4	5	6	7	8	9	10
Test height / Test width										
75 / 125 (S)										
75 / 145 (S/M)										
90 / 125 (S/M)										
90 / 145 (S/M/L)										
90 / 155 (M/L)										
105 / 145 (M/L)										
105 / 155 (L)										

Result of the size test

(if adjustable, marked with ,yes', otherwise with ,no')

Weight Mass [g]										
Sample	1	2	3	4	5	6	7	8	9	10
Small	0,38	--	--	--	--	--	--	--	--	--
Medium	0,44	--	--	--	--	--	--	--	--	--
Large	0,56	--	--	--	--	--	--	--	--	--
Extra Large	0,65	--	--	--	--	--	--	--	--	--

4.2 Materials and Construction

4.2.1 Materials

P

Result: See Manufacturer's Declaration, Appendix 1

4.2.2 Construction

4.2.2.1 Construction

P

Requirements: All parts of ear-plugs shall be designed and manufactured such that they are not liable to cause physical damage to the wearer when fitted and used according to the manufacturer's instructions (see 5 e) and 6.2 f)).

Result: During the tests of sound attenuation no persons were hurt.

4.2.2.2 Construction

P

Requirements: Any part of the ear-plugs that is likely to protrude outside the ear canal when fitted in accordance with the manufacturer's instructions (see 5 e) and 6.2 f)) shall be of such a construction that mechanical contact with the ear-plugs is unlikely to cause any injury to the ear.

Result: Result of the sight check is that under use according to the manufacturer's instructions no injuries are caused to the ear.

4.2.2.3 Construction

P

Requirements: When inserted in accordance with the manufacturer's instructions (see 5 e) and 6.2 f)), ear-plugs shall be capable of being readily and completely removed from the ear canal by the user, without the use of tools or instruments, when tested using a test panel of 16 subjects.

Result: All subjects were able to remove the ear-plugs readily and completely from the ear canal.

4.2.2.4 Construction

P

Requirements: When ear-plugs are marked re-usable (see 5 d), re-closable packaging, suitable to ensure hygienic storage between use, shall be suitable to ensure hygienic storage between use, shall be supplied with each pair of ear-plugs.

Result: Hygienic case available

4.3 Performance

4.3.1 General

The requirements of 4.3.2 to 4.3.6 shall be fulfilled.

4.3.2 Resistance to damage when dropped

P

Requirements: The ear-plugs shall not crack when tested in accordance with EN 13819-1:2002, 5.4. Neither shall any part of the ear-plugs become detached, such that correct re-assembly requires the use of either a tool or a replacement part.

Results:

Sample	Damages
1	None
2	None
3	None
4	None
5	None

4.3.3 Resistance to damage when dropped at low temperature (optional)

O

Requirements: The ear-plugs shall not crack when tested in accordance with EN 13819-1:2002, 5.5. Neither shall any part of the ear-plugs become detached, such that correct re-assembly requires the use of either a tool or a replacement part.

Results: not applicable

Sample	Damages
1	--
2	--
3	--
4	--
5	--

4.3.4 Cleaning and disinfection

P

Requirements:

If ear plugs are marked re-usable, after the ear-plugs have been cleaned and disinfected once, in accordance with the manufacturer's instructions, there shall be:

a) no significant alteration to those initial properties of the ear-plugs that are required to be assessed when the ear-plugs are examined for compliance with clauses 4.1 and 4.2, and

b) no changes that would be expected to cause any significant alteration to the attenuation characteristics stated in accordance with EN 13819-2:2002, 4.2

Results: pass

4.3.5 Ignitability

P

Requirement: When tested in accordance with EN 13819-1:2002, 5.6. no part of the ear-plugs shall ignite upon application of the heated rod nor continue to glow after the removal of the heated rod.

Result:

Materials	Sample No. 1
Earplug	Requirements fulfilled

4.3.6 Minimum Attenuation

P

Measurement conditions:

Four different sizes of earplugs were available for the measurements. The size was chosen according to the ear canal size of each subject.

Three different models were available. They were dispersed equally over the measurements.

Measurement conducted with 16 pairs of ear-plugs and 16 subjects.

Range of the protective effect = 84 % ($\alpha = 1$) for the Calculation of the HML value

Requirements:

The values ($M_i - s_i$) of the ear-plug according to the test of 4.2 of EN 13819-2 shall not be smaller than the values of table 1 of EN 352-2.

Result: Noizezz swim, sleep, fly

P

Frequency [Hz]	Result			Requirement [dB]
	Sound attenuation [dB]	Standard deviation [dB]	APV [dB]	
63	24,0	3,7	20,3	-
125	25,9	4,1	21,8	5
250	24,3	4,2	20,1	8
500	24,2	4,8	19,4	10
1000	26,8	4,4	22,4	12
2000	30,1	4,1	26,0	12
4000	22,7	3,3	19,4	12
8000	21,1	5,6	15,5	12

SNR- value =	21 dB
--------------	-------

H-value =	20 dB
M-value =	21 dB
L-value =	21 dB

5 Marking

The ear-plugs or the minimum standard package shall be durably marked with the following information:	Result	
	earplug	package
The name, trade mark or other identification of the manufacturer or his authorized representative	No	See remark
The model designation	No	See remark
The number of this EN standard, EN 352-2 and further standards, if applicable	No	See remark
Whether the ear-plugs are disposable or re-usable	No	See remark
Instructions for fitting and use, which shall indicate the need for proper fitting	No	See remark
For custom-moulded ear-plugs a specific marking or color coding on each ear-plug to differentiate between left and right	Not relevant	Not relevant
The nominal diameter designations of the ear-plugs, as determined in 4.1.1 (except from custom moulded and semi-aural ear-plugs)	No	See remark

Remark

Original-package respectively the artwork of the package was not available during testing.

The information according to paragraph 5 of EN 352-2:2002 shall be supplied with the ear-plug respectively package

6 Information supplied by the Manufacturer

Remark

The information according to paragraph 6 of EN 352-2:2002 shall be supplied with the ear-plugs. This review is not part of this test report.

Enclosures:

Declaration of the manufacturer according to EN 352-2

Manufacturer's Declaration according to EN 352-2:2003 Paragraph 4.2 Material and Construction

4.2 Materials

Those materials used in parts of ear-plugs coming into contact with the wearer's skin comply with the following requirements:

The materials are not known to be likely to cause skin irritation, skin disorders, allergic reactions nor any other adverse effects to health within the lifetime of the use of the ear-plugs.

When subject to contact with sweat, ear wax or with other materials likely to be found in the ear canal, the materials are not known to undergo changes within the lifetime of the use of the ear-plugs that would result in significant alteration to those properties of the ear-plugs that are required to be assessed when the ear-plugs are examined for compliance with 4.2 and 4.3.

4.2.2 Construction

All parts of ear-plugs are designed and manufactured such that they are not liable to cause physical damage to the wearer when fitted and used according to the manufacturer's instructions.

Any part of the ear-plugs that is likely to protrude outside the ear canal when fitted in accordance with the manufacturer's instructions are of such a construction that mechanical contact with the ear-plugs is unlikely to cause any injury to the ear.

When inserted in accordance with the manufacturer's instructions, ear-plugs are capable of being readily and completely removed from the ear canal by the user, without the use of tools or instruments.

When ear-plugs are marked re-usable, re-closable packaging, suitable to ensure hygienic storage between use, shall be supplied with each pair of ear-plugs.

Kind of ear-plug

- | | |
|---|---|
| <input type="checkbox"/> Disposable ear-plugs | <input checked="" type="checkbox"/> Re-usable ear-plugs |
| <input type="checkbox"/> Formable ear-plugs | |
| <input type="checkbox"/> Pre-formed ear-plugs | |

- | | |
|---|-----------------------------------|
| <input type="checkbox"/> Custom moulded ear-plugs | |
| <input type="checkbox"/> Acrylic | <input type="checkbox"/> Silicone |

Shore hardness

.....

Cord

- | |
|---|
| <input type="checkbox"/> Cord firmly attached with the ear plug |
| <input type="checkbox"/> Removable cord |
| <input checked="" type="checkbox"/> No cord provided |

Mode of Wearing

Headband ear-plugs

☐ yes ☒ no

Under-the-chin headband ear-plugs

☐ yes ☒ no

Behind-the-head headband ear-plugs

☐ yes ☒ no

Universal headband ear-plugs

☐ yes ☒ no**Wearer Information**

Marking

☐ front / back☐ right / left☒ no specifications**Size:**

Small size range

☒ yes ☐ no

Medium size range

☒ yes ☐ no

Large size range

☒ yes ☐ no

Marking

☒ S☒ M☒ L☒ XL

No marking of size

☐

The information as requested in paragraphs 5 and 6 of EN 352-2:2002 will be supplied with the ear-plugs.

For the ear-plugs

Model:

Noizezz universal re-useable hearing protection

and

versions:

sleep, fly, swim, shotkiller

We confirm as manufacturer / distributor the before mentioned specifications.

Company:

Noizezz B.V.

Address:

Wijkemeerstraat 16
2131 HA Hoofddorp
The Netherlands

Name: R.H. Eshuis

NOIZEZZ B.V.

Wijkemeerstraat 16

2131 HA Hoofddorp

Tel. 023-5544010

Fax. 023-5556461

Stamp and legally binding signature

Hoofddorp, 02.09.2015

Place, Date