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SATRA reference: SPC0222721 /1410

Your reference: NA

Date of report: 20 May 2014

For the attention of: Angela Musson

Samples received: 3 March 2014

TECHNICAL REPORT

Subject: Testing of Expand-A-Band [under the chin mode] ear-plugs to ANSI S3.19:1974

Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked † fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

Please note uncertainty of measurement has not been applied to the results in this report. SATRA uncertainty of measurement values are available on request.

Report signed by: D Mckeown
Position: PPE Technologist
Department: Safety Products Centre

1.0 WORK REQUESTED

Samples of hearing protectors, reference “Expand-A-Band [under the chin mode]”, were received by SATRA for testing in accordance with ANSI S3.19:1974†.

2.0 CONCLUSIONS

SAMPLE REFERENCE	STANDARD	CLAUSE / PROPERTY	RESULT
Expand-A-Band [under the chin mode]	ANSI S3.19:1974	Attenuation	NRR: 17 dB

3.0 TESTING

Testing was carried out in accordance with ANSI S3.19:1974 between 29 April and 1 May 2014.

Unless otherwise specified either in the individual test method or in this report, samples were tested ‘as received’, after conditioning, and tested under normal ambient conditions.



Figure 1 – Hearing protector reference “Expand-A-Band”

4.0 TEST RESULTS

TABLE 1: Testing of hearing protector reference “Expand-A-Band [under the chin mode]” in accordance with ANSI S3.19:1974

ANSI S3.19:1974 CLAUSE / TEST	ANSI S3.19:1974 REQUIREMENT	TEST RESULTS
Attenuation	The acoustic attenuation of the device, measured in accordance with ANSI S3.19:1974 must be tested and reported.	The device exhibits an NRR value of 17 dB.

TECHNOLOGY

APPENDIX 1: ATTENUATION TESTING – EXPERIEMENTER FIT

A1.1 INTRODUCTION

ANSI S3.19:1974 specifies a subjective method for measuring the attenuation of hearing protection at the threshold of hearing. This method was applied to the samples provided for testing; the results of these tests are shown below.

A1.2 TEST SUBJECTS

The testing was conducted using ten test subjects, as specified by the test standard. The subjects comprised both males and females over a wide range of ages. All subjects were audiometrically screened in accordance with the standard prior to the test.

SUBJECT REFERENCE	AGE	SEX
A	28	M
B	30	M
C	24	M
D	33	F
E	33	M
F	21	F
G	21	M
H	27	F
I	32	M
J	27	F

A1.3 FITTING

Manufacturer's instructions were provided to the test subjects and followed during the fitting of the device. Guidance was also available from the test engineer. Where necessary, adjustments to the fit were made by the test engineer.

A1.4 TEST PROCEDURE

Each subject was supplied with a fresh test sample, and was tested for occluded and unoccluded thresholds on three trials. The final result for each subject is based on the arithmetic average of the attenuation achieved on each of the three trials. The hearing threshold measurement procedure specified by the British Society of Audiometry was followed.

Assessment of background noise levels was made with a GRAS 40HL low-noise microphone, in conjunction with a Bruel and Kjaer PULSE measurement system.

A1.5 RESULTS

	FREQUENCY (Hz) / ATTENUATION (dB)								
	125	250	500	1000	2000	3150	4000	6300	8000
A	30.0	23.3	30.0	34.7	32.0	33.3	32.7	41.3	37.3
B	24.7	18.0	18.0	21.3	24.0	31.3	28.7	34.7	30.0
C	29.3	24.7	20.7	22.7	30.0	32.7	36.7	40.0	27.3
D	20.0	20.0	19.3	22.0	20.7	33.3	32.0	36.7	36.7
E	23.3	24.7	23.3	26.0	26.0	36.7	31.3	43.3	37.3
F	34.7	32.7	29.3	30.0	28.0	37.3	32.7	38.7	43.3
G	36.0	25.3	29.3	28.7	29.3	30.7	26.0	28.7	26.0
H	30.0	29.3	28.0	23.3	28.7	32.0	34.0	40.7	37.3
I	29.3	28.7	27.3	20.0	27.3	29.3	27.3	44.7	43.3
J	22.7	21.3	19.3	22.0	30.0	33.3	33.3	45.3	47.3
MEAN	28.0	24.8	24.5	25.1	27.6	33.0	31.5	39.4	36.6
ST DEV	5.2	4.5	4.8	4.7	3.3	2.5	3.2	5.1	7.1

NRR = 17 dB

***** END OF REPORT *****



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Issue Date: 1st October 2009