

Test Certificate – SENSEAR: SMP00001 Ear Tip Silicon

*This Certificate details the results of Hearing Protector testing carried out by
The National Acoustic Laboratories*

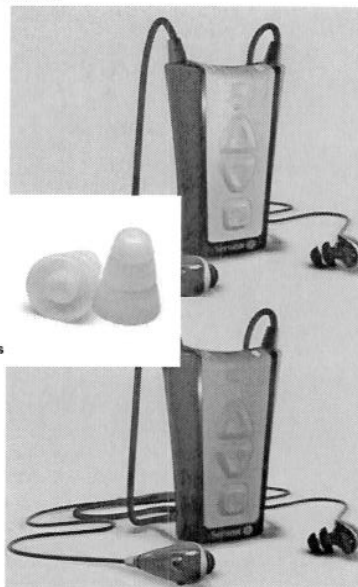
NAL Certificate No: 080401 Test Series: 163

Device Tested: Silicon Ear Tips

Manufactured By: SENSEAR Pty Ltd

Date Tested: 16th to 24th April 2008

Test Commissioned By: SENSEAR Pty Ltd




Description of Device Tested: A soft semi rigid fluted silicon rubber conforming ear tip fitted to the ear pieces of the SENSEAR SP1 and SP1x Electronic Hearing Protection System.

This hearing protector device has been tested mechanically, and its sound attenuation was measured in accordance with Australian and New Zealand Standard AS/NZS 1270-2002.

Mean Reference Thresholds re 20uPa						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
32.5	24.9	11.9	11.5	8.9	6.5	11.6

Real-ear attenuation values (dB) at designated octave frequencies							
Subject ID	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
S1	30	26	29	28	34	31	36
S2	39	41	40	41	31	41	45
S3	25	23	20	19	27	26	33
S4	31	37	40	37	37	41	43
S5	32	37	36	33	31	42	33
S6	25	30	25	31	36	32	48
S7	32	34	36	31	28	36	38
S8	24	20	26	12	36	37	42
S9	37	34	32	28	33	34	44
S10	17	13	15	19	24	11	32
S11	30	28	28	29	32	30	42
S12	32	28	32	29	34	29	44
S13	30	30	36	29	27	43	52
S14	45	41	39	37	31	33	31
S15	26	24	18	16	27	24	31
S16	27	32	35	30	29	26	35
S17	24	29	24	21	21	27	33
S18	23	21	21	17	23	28	53
S19	26	26	24	21	26	24	34
S20	31	32	30	24	29	29	43
Mean	29.2	29.2	29.2	26.4	29.7	31.1	39.4
Standard Deviation	6.3	7.1	7.6	7.7	4.4	7.6	7.0
Mean minus SD	22.9	22.1	21.6	18.7	25.3	23.5	32.4

 <small>Accredited for AS/NZS 1270:2002 Registered Lab No. 5472</small>	SLC ₈₀ Rating	23	Average total mass of device =
	CLASS	4	
	Clamping Force	N/A Newtons	

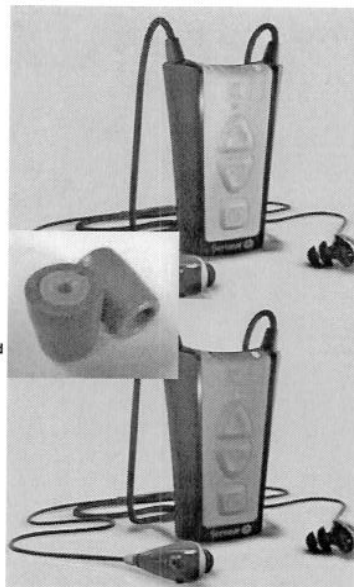
Signatory: **Dated:**
(Gordon Jarvis, NAL Research, Acoustic Test Facility)

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Test Certificate – SENSEAR: SFT00100 Soft Foam Tip - Grey

*This Certificate details the results of Hearing Protector testing carried out by
The National Acoustic Laboratories*

NAL Certificate No: 080402 Test Series: 163
 Device Tested: SFT00100 Soft Foam Ear Tips - Grey
 Manufactured By: SENSEAR Pty Ltd
 Date Tested: 16th to 24th April 2008
 Test Commissioned By: SENSEAR Pty Ltd



Description of Device Tested: A soft foam conforming ear tip fitted to the ear pieces of the SENSEAR SP1 and SP1x Electronic Hearing Protection System.

This hearing protector device has been tested mechanically, and its sound attenuation was measured in accordance with Australian and New Zealand Standard AS/NZS 1270-2002.

Mean Reference Thresholds re 20uPa						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
32.5	24.9	11.9	11.5	8.9	6.5	11.6

Real-ear attenuation values (dB) at designated octave frequencies							
Subject ID	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
S1	28	28	32	29	36	40	43
S2	34	28	27	30	31	42	42
S3	24	20	18	19	32	32	38
S4	27	33	38	37	36	42	47
S5	30	30	28	24	28	35	40
S6	25	28	25	26	32	43	49
S7	34	36	48	41	32	40	38
S8	26	24	29	17	36	46	46
S9	38	38	42	36	41	42	43
S10	29	30	28	30	28	38	44
S11	32	30	39	37	35	38	44
S12	31	24	28	25	34	40	46
S13	27	38	42	35	43	47	52
S14	42	38	43	43	36	44	31
S15	30	30	24	23	34	40	44
S16	26	25	22	20	31	38	36
S17	28	29	31	31	23	41	34
S18	18	24	13	19	28	33	43
S19	25	25	25	24	31	40	39
S20	30	31	33	29	36	43	44
Mean	29.2	29.3	30.7	28.7	32.9	40.1	42.1
Standard Deviation	5.1	5.3	9.1	7.6	4.6	3.8	5.0
Mean minus SD	24.1	24.0	21.6	21.1	28.3	36.3	37.1

 Accredited for AS/NZS 1270:2002 Registered Lab No. 5472	SLC ₈₀ Rating	26	Average total mass of device =
	CLASS	5	
	Clamping Force	N/A Newtons	

Signatory: **Dated:**
 (Gordon Jarvis, NAL Research, Acoustic Test Facility)

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6

Summary

All the devices were tested for both mechanical and attenuation characteristics in accordance with AS/NZS 1270:2002 Acoustics – Hearing Protectors.

Table 6: Test Result Summary

Device	Type	Test Certificate Number	SLC ₈₀ Rating	Class
HP 1	SMP00001 Ear Tip Silicon	080401	23	4
HP 2	SFT00100 Soft Foam Tip - Grey	080402	26	5

Note: The above ear tips were fitted to the earpieces of the SENSEAR SP1 and SP1x Electronic Hearing Protection System. It should also be noted that the attenuation results cited are for the passive mode only.

All the devices were examined and prepared for testing in accordance with Section 3 of AS/NZS 1270-2002. All the devices were subjected to dry heat temperature test.

30 pairs of each ear tip type was supplied for testing.

AS/NZS1270: 2002 specifies a minimum of sixteen test subjects for testing earmuffs and twenty subjects required for testing earplugs.

20 test subjects were selected in conformance with AS/NZS1270: 2002 (eight male and twelve female subjects).

Testing was carried out from the 16th to 24th April 2008 the results of both the mechanical and attenuation tests are presented on pages 12 and 13 of this report