

Hearing Protective Device Test Report Number Q2670A Revision 0  
Safetyware Sdn Bhd  
Plot 237  
Lengkok Perindustrian Bukit Minyak 3  
Bukit Minyak Industrial Estate  
14100 Simpang Ampat, Penang, Malaysia

Date of Report: 8/27/12  
Date of Sample Receipt: 8/6/12




Attenuation measurements have been performed according to the American National Standards Institute (ANSI) Specifications, ANSI S3.19-1974, using the experimenter-fit protocol, on the Safetyware Sdn Bhd DuraFit Series reusable insert-type hearing protector (test ID Q2670A). The specified threshold measurement data were obtained using ten normally-hearing listeners, six male and four female. These listeners were selected from a standby group of about 35 volunteers, mostly graduate students, who regularly serve as listeners for measurements of this kind.

The measurements were made in a room designed for this purpose. All acoustic characteristics of the room meet the requirements outlined in ANSI S3.19-1974. The ambient noise levels in this room are below the limits specified in ANSI S3.19-1974, and open ear thresholds are used on a continuing basis to monitor the background noise levels. An automatic recording attenuator was used to record both open and occluded ear thresholds.

Each of ten subjects was tested three times at each of nine test frequencies. The attached Tables show grand mean attenuation values in decibels (dB) for each test signal along with group attenuation values. Standard deviations (S.D.) for the 30 different attenuation determinations for each test signal are also given. The results presented in this report pertain to the samples tested only.

Michael & Associates is accredited by the National Institute of Standards and Technology (NIST) National Laboratory Accreditation Program (NVLAP) for tests performed according to ANSI S3.19-1974, ANSI S12.6-2008, AS/NZ S1270:2002 and EN352 parts 1-8. These accreditation criteria encompass the requirements of international standard ISO 17025. This report may only be reproduced or transmitted electronically in its' entirety. This report shall not be used to claim product endorsement by NIST, NVLAP or by any agency of the U.S. Government. All measurement equipment are calibrated with instrumentation traceable to the NIST.

*Use these laboratory-derived attenuation data for comparison purposes only. The amount of protection afforded in field use is often significantly lower depending on how the protectors are fitted and worn.*

  
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Kevin Michael, Ph.D.  
President

8/27/12  
\_\_\_\_\_  
Date  
Revised 9-22-14

**Individual and Summary Attenuation Data for  
Hearing Protective Devices**

Test Method: ANSI S3.19-1974  
 Manufacturer: Safetyware Sdn Bhd  
 Model: DuraFit Series

Position: Insert  
 Date: 8/27/12  
 Test ID # Q2670A

SUBJECT	FREQUENCY IN HERTZ								
	125	250	500	1000	2000	3150	4000	6300	8000
1	31	21	31	30	36	35	40	44	45
	32	25	32	26	35	34	32	41	41
	33	27	32	31	36	35	35	42	46
2	31	29	35	34	40	41	44	52	47
	32	31	35	35	42	45	44	51	46
	30	27	30	29	37	36	40	54	45
3	35	31	33	31	43	48	50	48	48
	30	28	32	31	42	48	51	48	47
	36	31	36	34	44	53	52	45	47
4	26	27	30	29	31	34	34	36	46
	26	24	28	29	34	33	32	37	46
	26	24	32	30	33	30	32	35	46
5	33	32	36	30	34	40	42	42	55
	40	33	38	31	37	44	46	46	51
	30	34	39	31	29	36	43	48	58
6	38	39	43	39	38	43	48	54	48
	40	38	41	38	33	43	47	48	47
	41	37	44	38	34	40	45	47	47
7	42	41	45	40	39	45	49	48	51
	41	40	44	39	40	45	49	48	51
	38	38	41	38	39	44	49	48	51
8	30	29	29	31	34	42	40	41	41
	22	25	26	28	33	38	39	41	40
	22	25	26	27	32	38	40	40	39
9	32	29	33	29	38	42	41	50	51
	30	28	34	28	38	41	40	48	52
	31	28	33	29	38	39	41	47	52
10	36	32	42	31	39	38	41	41	39
	33	31	38	33	42	38	41	41	40
	33	34	36	30	39	38	44	41	39
MEANS	32.7	30.6	35.1	31.9	37.0	40.2	42.4	45.0	46.8
STD. DEV.	5.3	5.3	5.6	3.9	3.7	5.1	5.7	5.1	4.9

NRR = 25 dB

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Manufacturer: Safetyware Sdn Bhd  
Model: DuraFit Series  
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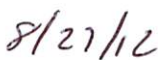
Measurements were made according to American National Standards Institute Specifications ANSI S3.19-1974.

Center Frequency in Hz	Mean Attenuation in dB	Group Attenuation in dB	Standard Deviation in dB
125	32.7	63.2	5.3
250	30.6		5.3
500	35.1		5.6
1000	31.9		3.9
2000	37.0	186.6	3.7
3150	40.2		5.1
4000	42.4		5.7
6300	45.0	91.8	5.1
8000	46.8		4.9



These data were obtained through measurements made at the laboratories of Michael & Associates, Inc., State College, PA , USA. Michael & Associates, Inc., is accredited to test to ANSI S3.19-1974, ANSI S12.6-2008 and AS/NZS 1270:2002 by the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP).

  
Kevin L. Michael, Ph.D.  
President

  
Date