

Environmental Protection Agency

§211.207

must use the data obtained according to ANSI STD S3.19-1974.

[45 FR 8275, Feb. 6, 1980]

§§211.206-3—211.206-10 Alternative test methods. [Reserved]

§211.207 Computation of the noise reduction rating (NRR).

Calculate the NRR for hearing protective devices by substituting the average attenuation values and standard deviations for the pertinent protector category for the sample data used in

steps #6 and #7 in Figure 2. The values of $-2, 0, 0, 0, -2, -.8, -3.0$ in Step 2 and $-16.1, -8.6, -3.2, 0, +1.2, +1.0, -1.1$ in Step 4 of Figure 2 represent the standard "C"- and "A"-weighting relative response corrections applied to any sound levels at the indicated octave band center frequencies. (NOTE: The manufacturer may label the protector at values lower than indicated by the test results and this computation procedure, e.g. lower NRR from lower attenuation values. (Ref. §211.211(b).)

FIGURE 2—COMPUTATION OF THE NOISE REDUCTION RATING

Octave band center frequency (Hz)	125	250	500	1000	2000	3000	4000	6000	8000
1 Assumed Pink noise (dB)	100	100	100	100	100	100	100	100	100
2 "C" weighting corrections (dB)	-.2	0	0	0	-.2	.....	-.8	.....	-3.0
3 Unprotected ear "C"-weighted level (dB)	99.8	100	100	100	99.8	.....	99.2	.....	97.0
(The seven logarithmically added "C"-weighted sound pressure levels of Step #3 equal;107.9 dS)									
4 "A"-weighting corrections (dB)	-16.1	-8.6	-3.2	0	+1.2	.....	+1.0	.....	-1.1
5 Unprotected ear "A"-weighted level (step 11-step 14) (dB)	83.9	91.4	96.8	100	101.2	.....	101	.....	98.9
6 Average attenuation in dB at frequency	21	22	23	29	41	.....	(43+47)/2=45	.....	(41+36)/2=38.5
7 Standard deviation in dB at frequency	3.7	3.3	3.8	4.7	3.3	.....	(3.3+3.4)=6.7	.....	(6.1+6.5)=12.6
	×2	×2	×2	×2	×2	.....	.....	.....	.....
	7.4	6.6	7.6	9.4	6.6	.....	.....	.....	.....
8 Step 15-(step 16-step 17) develops the protected ear "A" weighted levels (dB)	70.3	76.0	81.4	80.4	66.8	.....	62.7	.....	73.0
(The seven logarithmically added "A"-weighted sound pressure levels of Step 18 using this sample data=85.1 dB)									
9 NRR=Step 13—Step 18—3 dB*; =107.9 dB—85.1 dB—3 dB*; =19.8 dB (or 20) (Round values ending in .5 to next lower whole number).									
*Spectral uncertainty (as defined in §211.203).									

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The value for #3 is constant. Use Logarithmic mathematics to determine the combined value of protected ear levels (Step #8) which is used in Step #9 to exactly derive the NRR; or use the following table as a substitute for logarithmic mathematics to determine the value of Step #8 and thus very closely approximate the NRR.

Difference between any two sound pressure levels being combined (dB)	Add this level to the higher of the two levels (dB)
0 to less than 1.5	3
1.5 to less than 4.5	2
4.5 to 9	1
Greater than 9	0

§211.208 Export provisions.

(a) The outside of each package or container containing a hearing protective device intended solely for export must be so labeled or marked. This will include all packages or containers that are used for shipping, transporting, or dispersing the hearing protective device along with any individual packaging.

(b) In addition, the manufacturer of a hearing protective device intended solely for export is subject to the export exemption requirements of §211.110-3 of subpart A.

(Sec. 10(b)(2), Pub. L. 92-574, 86 Stat. 1242 (42 U.S.C. 4909(b)(2)))

§211.210 Requirements.

§211.210-1 General requirements.

(a) Every hearing protector manufactured for distribution in commerce in the United States, and which is subject to this regulation:

(1) Must be labeled at the point of ultimate purchase or distribution to the prospective user according to the requirements of §211.204 of this subpart; and

(2) Must meet or exceed the mean attenuation values determined by the procedure in §211.206 and explained in §211.211(b).

(b) Manufacturers who distribute protectors in commerce to another manufacturer for packaging for ultimate purchase or use must provide to that manufacturer the mean attenuation values and standard deviations at each

of the one-third octave band center frequencies as determined by the test procedure in §211.206. He must also provide the Noise Reduction Rating calculated according to §211.207.

(Sec. 13, Pub. L. 92-574, 86 Stat. 1244 (42 U.S.C. 4912))

[44 FR 56139, Sept. 28, 1979, as amended at 45 FR 8275, Feb. 6, 1980; 47 FR 57716, Dec. 28, 1982]

§211.210-2 Labeling requirements.

(a)(1) A manufacturer responsible for labeling must satisfy the requirements of this subpart for a category of hearing protectors before distributing that category of hearing protectors in commerce.

(2) A manufacturer may apply to the Administrator for an extension of time to comply with the labeling requirements for a category of protectors before he distributes any protectors in commerce. The Administrator may grant the manufacturer an extension of up to 20 days from the date of distribution. The manufacturer must provide reasonable assurance that the protectors equal or exceed their mean attenuation values, and that labeling requirements will be satisfied before the extension expires. Requests for extension should go to the Administrator, U.S. Environment Protection Agency, Washington, DC 20460. The Administrator must respond to a request within 2 business days. Responses may be either written or oral.

(3) A manufacturer, receiving hearing protectors through the chain of distribution that were labeled by a previous manufacturer, may use that previous manufacturer's data when labeling the protectors for ultimate sale or use, but is responsible for the accuracy of the information on the label. The manufacturer may elect to retest the protectors.

(b) Labeling requirements regarding each hearing protector category in a manufacturer's product line consist of:

(1) Testing hearing protectors according to §211.206 and the hearing protectors must have been assembled by the manufacturer's normal production process; and it must have been intended for distribution in commerce.

(c) Each category of hearing protectors is determined by the combination