



CO-ORDINATION OF NOTIFIED BODIES
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Version 01

RECOMMENDATION FOR USE

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Question related to	<input checked="" type="checkbox"/> PPE Regulation	<input checked="" type="checkbox"/> EN/prEN: EN 352-6:2002	<input type="checkbox"/> Other:
Article:	Annex: II, 3.5	Clause:	
Key words: Earmuffs with communication facilities			
Question: EN 352-6 uses MIRE technique to determine the dependence between the sound level at the ear of the user and the input voltage. Since test subjects are used the maximum level to be reached is 85 dB(A) (diffuse-field corrected). For safety-related communication higher levels may be necessary during work. In order to be able to assess the total sound exposure the user has to know if the product behaves linearly for higher input voltages and if it possible to extrapolate the MIRE data. How can the necessary additional data be determined and communicated in the user information?			
Solution: The product (all four samples – eight cups) shall be measured with signal input on an ATF (HATS with a coupler according to EN 60318-4:2010) starting with the voltage that resulted in a level of 70 dB(A) with the test subjects. The manufacturer is to be asked for the maximum allowed input voltage. The voltage shall be increased in 5 dB steps up to a diffuse-field corrected value at the ATF of 120 dB(A) or saturation of the signal (or up to the maximum input voltage). Since the sound levels will typically not be identical to the MIRE results the curve has to be shifted to match the MIRE results for the range where both curves overlap using the following procedure: <ul style="list-style-type: none">- Use the calculation procedure for the criterion voltage (according to RfU 04.041 (latest published online version)) to determine from the MIRE data the input voltage that results in an SPL of 85 dB(A) (diffuse-field corrected).- For that purpose interpolate for each of the 16 ears the voltage value that results in 85 dB(A). Mean minus standard deviation for the 16 values gives the required voltage, U_{85}.- Measure all four samples (eight data sets) on the ATF and calculate the mean over the eight values for each input voltage.- The mean of the values measured on the ATF will probably not contain a data point with the voltage value of U_{85}, therefore determine this point by interpolation.- Determine the difference between MIRE and ATF values at U_{85}.- Shift the whole ATF mean curve by this offset. The combined data from MIRE and ATF shall be presented in the user information as a table (dB SPL vs. U in mV). If a graphical interpolation is wished for the data have to be plotted with a logarithmically spaced voltage axis. To display the whole range of input voltages apply RfU 04.041 (latest published online version) to the MIRE data to get the corresponding voltage values for 70, 75 and 80 dB(A). Moreover the maximum allowed input voltage is to be stated in the user information.			