

# ISO/TS 4869-5:2006-10 (E)

## Acoustics - Hearing protectors - Part 5: Method for estimation of noise reduction using fitting by inexperienced test subjects

---

Contents	Page
Foreword .....	v
Introduction .....	vii
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Measurement of the noise reduction of hearing protectors .....	3
4.1 Test signals .....	3
4.2 Test site .....	3
4.2.1 Conditions to be met for the test to be valid .....	3
4.2.2 Reverberation time .....	4
4.2.3 Background noise .....	4
4.3 Test equipment .....	5
5 Test subjects .....	6
5.1 Conditions for subject acceptance/dismissal .....	6
5.1.1 General .....	6
5.1.2 Age and sex .....	6
5.1.3 Previous experience with hearing protectors .....	7
5.1.4 Anatomical features .....	7
5.1.5 Maximum hearing threshold levels .....	7
5.1.6 Minimum hearing threshold levels .....	7
5.1.7 Literacy .....	7
5.1.8 Threshold variability .....	7
5.2 Number of subjects .....	7
5.3 Otoscopic inspection .....	8
5.4 Spectacles and jewellery .....	8
5.5 Maximum number of tests per subject .....	8
5.6 Exceptions .....	8
6 Product samples .....	8
6.1 General .....	8
6.2 Custom-moulded ear-plugs .....	8
6.3 Special requirements for product instruction .....	8
6.4 Variable position headbands .....	9
6.5 Variable band force .....	9
7 Test procedure .....	9
7.1 Number of open-ear and occluded-ear threshold measurements .....	9
7.2 Information to subjects .....	9
7.3 Prior to entering the test room .....	10
7.4 Inside the test room .....	10
7.4.1 Positioning the subject .....	10
7.4.2 Quiet period prior to first threshold determination .....	11
7.4.3 Fitting the hearing protector for test .....	11
7.4.4 Re-determination of thresholds .....	11

<b>8</b>	<b>Computation of noise reduction values .....</b>	<b>12</b>
<b>8.1</b>	<b>General .....</b>	<b>12</b>
<b>8.2</b>	<b>Calculation of the individual noise reductions .....</b>	<b>12</b>
<b>8.3</b>	<b>Calculation of group noise reduction .....</b>	<b>12</b>
<b>8.4</b>	<b>Uncertainty of the noise reduction data .....</b>	<b>13</b>
<b>9</b>	<b>Reporting of data .....</b>	<b>13</b>
<b>Annex A (informative) Uncertainty of hearing protector noise reduction measurements .....</b>		<b>15</b>
<b>Bibliography .....</b>		<b>18</b>