



## Testing of Hearing Protectors

Test item                    **H540B**

Type                        **Earmuff**

Customer                 **Peltor AB**  
                              **L. Carlborg**  
                              **Box 2341, Malmstensg. 19**  
                              **S-331 02 VÄRNAMO**  
                              **SWEDEN**

Applied methods        **EN 352-1:1993**

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Tämän selosteen osittainen julkaiseminen on sallittu ainoastaan Työterveyslaitoksen kirjallisella luvalla. Testaustulokset pätevät ainoastaan testatuille näytteille. Tämän selosteen testit, joissa on merkintä: "Ei Mittatekniikan keskuksen FINAS-akkreditointia", eivät kuulu testauslaboratorion T013 akkreditoinnin piiriin.



**T013 (EN ISO/IEC 17025)**

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**1. Description and identification of test items**

Description                      Foam filled black earmuff with black cushions and metal band  
Manufacturer                    Peltor AB

**2. Scope of testing****2.1 Test items**

Ten items were supplied by the customer 2001-11-21. Test items were intact.

**2.2 Testing**

The tests were performed during 2001-11-21-2002-02-12 in the Department of Physics testing laboratories. The tests were performed according to the standard EN 352-1.

**3. Results****3.1 The mass of hearing protectors**

The mass of all ten specimen was measured in accordance with 7.1.3.3 and the mean mass of the specimens was calculated. The mean mass was 263 g .

**3.2 Adjustability**

The nominal size of ear-muffs was measured from six specimens.  
Specimens were fitted to the test equipment as follows (the over-the-head position):

Test Height mm	Width mm		
	125	145	155
115	S	N	-
130	N	N	N
140	-	N	L

\* The internal apex of the headband did not touch the headband support pad.



Specimens satisfy the requirements in the small, normal and large size range in the over-the-head position.

### **3.3 Cup Rotation**

Cup rotation was measured from six specimens. The ability of the cups to accommodate a range of angular movements was tested. The contact between the cushions of specimens and the plates was continuous throughout this range.

### **3.4 Headband force**

The headband force was measured from six specimens. The mean value of headband force for the specimens was 10.0 N. The headband force shall not be greater than 14 N.

### **3.5 Cushion pressure**

Cushion pressure was measured from six specimens. The cushion pressure was 2030 Pa. The cushion pressure shall not be greater than 4500 Pa.

### **3.6 Resistance to damage when dropped**

Resistance to damage when dropped was measured. Specimens did not crack or become detached.

### **3.7 Resistance to low temperature (optional)**

Not performed.

### **3.8 Change in the headband force**

Six specimens were subject to headband flexing. After conditioning (60±5) min in (22±5) °C the headband force was measured again.

Specimen number	1	2	3	4	5	6
Change in headband force (%)	3	6	8	11	9	8



### 3.9 Insertion loss

Insertion loss was tested from ten specimens. The results are shown below.

Frequency (Hz)	63	125	250	500	1000	2000	3150	4000	6300	8000
Mean IL (dB)	18.5	15.3	27.1	41.5	45.1	40.3	31.3	45.8	41.4	44.0
St. dev (dB)	2.5	1.1	0.7	1.7	1.9	1.7	1.4	2.0	1.4	1.3

### 3.10 Resistance to leakage

The resistance against leakage was tested in accordance to 4.13. The specimen did not leak.

### 3.11 Ignitability

Ignitability was tested from specimens numbered 5-6. Specimens did not ignite or continue to glow after removal of the heated rod.

### 3.12 Sound attenuation

Sound attenuation was tested from specimens numbered 1-4.

#### Sound attenuation characteristics

Frequency (Hz)	63	125	250	500	1000	2000	3150	4000	6300	8000
Mean attenuation (dB)	20.9	17.5	24.5	34.5	41.4	39.5	38.5	47.3	46.7	42
St. deviation	3.3	2.3	2.7	2	2.2	2	3.6	4.4	3	2.8
APV (84%)	17.6	15.2	21.8	32.5	39.2	37.5	34.9	42.9	43.7	39.2
H=40										
M=32										
L=23										
SNR=35										
NRR=28										