

415 – Metal Detectable Earplugs Loose 2 Flange Blue

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Hearing protectors referenced 410-P20-S102-x18

Test Results BS EN 352-2: 2002

| Clause / Test | Requirement | Test Results | UoM (See Note 1) | Result |
|--|--|--|---------------------|--------|
| 4.3.6 Minimum attenuation | When tested in accordance with EN 13819-2:2002, 4.2, the values ($M_f - S_f$) of the ear-plugs shall not be less than the values shown in table 1 of BS EN 352-2:2002. See note 1. | The ear-plugs met the minimum attenuation requirements of BS EN 352-2:2002 (see Appendix A). | 31% | Pass |

Additional Information / Notes Table 1 of BS EN 352-2:2002

| Frequency (Hz) | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---------------------|-----|-----|-----|------|------|------|------|
| $M_f - S_f$ (in dB) | 5 | 8 | 10 | 12 | 12 | 12 | 12 |

Note 1: Documentation to be assessed as part of the technical file during the EU Type Examination assessment

Note 2: 'UoM' denotes estimated Uncertainty of Measurement for stated test results. This uncertainty value is based on a standard uncertainty multiplied by a coverage factor $k = 2$, which provides for a confidence level of approximately 95%

Appendix: Subjective Attenuation Testing

Introduction

BS EN 24869-1:1993 (ISO 4869-1:1990) specifies a subjective method for measuring the attenuation of hearing protection at the threshold of hearing. This method was applied to the samples provided for testing.

Test Subjects

The testing was conducted on sixteen test subjects, as specified by the test standard. The subjects comprised both males and females over a wide range of ages. All subjects were audiometrically screened in accordance with clause 4.4.1 of BS EN 24869-1:1993 prior to the test.

Fitting

Manufacturer's instructions were provided to the test subjects and followed during the fitting of the device. Guidance was also available from the test engineer.

Test Procedure

The procedure specified in BS EN 24869-1:1993, 4.5 was followed.

Results

| | | Frequency, Hz / Attenuation, dB re 20 µPa | | | | | | | |
|---------------------------|--------|---|------|------|------|------|------|------|------|
| Subject | Sample | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| A | 1 | 26 | 24 | 24 | 26 | 30 | 32 | 32 | 22 |
| B | 2 | 6 | 6 | 8 | 10 | 16 | 24 | 20 | 12 |
| C | 3 | 10 | 10 | 4 | 10 | 18 | 22 | 22 | 16 |
| D | 4 | 24 | 28 | 22 | 24 | 28 | 34 | 32 | 38 |
| E | 5 | 16 | 20 | 20 | 26 | 22 | 34 | 34 | 42 |
| F | 6 | 24 | 20 | 22 | 16 | 24 | 34 | 32 | 32 |
| G | 7 | 18 | 22 | 22 | 24 | 22 | 24 | 32 | 14 |
| H | 8 | 22 | 18 | 18 | 22 | 22 | 36 | 32 | 28 |
| Mean attenuation | | 18.3 | 18.5 | 17.5 | 19.5 | 22.8 | 30.0 | 29.5 | 25.5 |
| Standard deviation | | 7.2 | 7.2 | 7.4 | 6.7 | 4.7 | 5.7 | 5.3 | 11.3 |
| Assumed protection | | 11.0 | 11.3 | 10.1 | 12.8 | 18.1 | 24.3 | 24.2 | 14.2 |

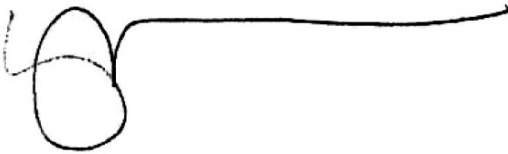
SNR= 19

H= 20

M= 17

L= 13

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