

Classification of services in Acoustics, Ultrasound and Vibration

Last update: October 2010

Metrology Area: Acoustics, Ultrasound and Vibration

Branch: Sound in Air

1. Measurement microphones
 - 1.1 Pressure sensitivity level
 - 1.1.1. Modulus¹: *frequency*
 - 1.1.2. Phase: *frequency*
 - 1.2 Free-field sensitivity level
 - 1.2.1. Modulus: *frequency*
 - 1.2.2. Phase: *frequency*
 - 1.2.3. Directivity: *frequency*
 - 1.3 Diffuse field sensitivity level
 - 1.3.1. Modulus: *frequency*
 - 1.3.2. Phase: *frequency*
2. Sound calibrators
 - 2.1 Single frequency
 - 2.1.1. Sound pressure level: *microphone type*
 - 2.2 Multi-frequency
 - 2.2.1. Sound pressure level: *microphone type, frequency*
3. Sound Measuring Instruments
 - 3.1 Response
 - 3.1.1. Sound pressure response level: *frequency*
 - 3.1.2. Free-field response level: *frequency*
 - 3.1.3. Diffuse field response level: *frequency*
 - 3.1.4. Sound intensity response level: *frequency*
4. Ear simulators
 - 4.1 Reference couplers or artificial ears
 - 4.1.1. System response level: *frequency*
 - 4.1.2. Acoustic impedance: *frequency*
 - 4.2 Mechanical couplers
 - 4.2.1. Force response level: *frequency*
 - 4.2.2. Mechanical impedance: *frequency*
 - 4.3 Impedance head force transducer
 - 4.3.1. Modulus of charge sensitivity: *frequency*
 - 4.3.2. Phase shift of charge sensitivity: *frequency*
 - 4.4 Impedance head force measuring chain
 - 4.4.1. Modulus of voltage sensitivity: *frequency*
 - 4.4.2. Phase shift of voltage sensitivity: *frequency*

¹ For each service the measurand is indicated in roman characters, and the parameter(s) in italic characters

- 5. Reference sound sources
 - 5.1 Output
 - 5.1.1. Sound power level: *frequency*
 - 5.1.2. Directivity: *frequency*
- 6. Audiometers
 - 6.1 Response
 - 6.1.1. Air-conduction response level: *frequency*
 - 6.1.2. Bone-conduction response level: *frequency*
- 7. Reserved for future use
- 8. Reserved for future use
- 9. Reserved for future use
- 10. Reserved for future use

Branch: Sound in Water

- 11. Hydrophones (ultrasonic)
 - 11.1 Free-field sensitivity
 - 11.1.1. Modulus: *frequency*
 - 11.1.2. Phase: *frequency*
- 12. Hydrophones (non-ultrasonic)
 - 12.1 Free-field sensitivity
 - 12.1.1. Modulus: *frequency*
 - 12.1.2. Phase: *frequency*
 - 12.2 Pressure sensitivity
 - 12.2.1. Modulus: *frequency*
 - 12.2.2. Phase: *frequency*
- 13. Ultrasound transducer
 - 13.1 Output
 - 13.1.1. Ultrasonic power: *frequency*
 - 13.1.2. Directivity: *frequency*
 - 13.1.3. Ultrasonic pressure: *frequency*
- 14. Reserved for future use
- 15. Reserved for future use
- 16. Reserved for future use
- 17. Reserved for future use
- 18. Reserved for future use
- 19. Reserved for future use
- 20. Reserved for future use

Branch: Vibration

NOTE: For this branch the CMCs are expressed in terms of the physical quantity of acceleration or angular acceleration. For sinusoidal vibration (e.g. primary vibration calibration in accordance with ISO 16063-11) the entries may also represent the calibration and measurement capabilities for derivatives such as velocity, displacement, angular velocity and rotation angle.

- 21. Linear vibration
 - 21.1 Acceleration measuring instrument
 - 21.1.1. Frequency response
 - 21.1.1.1. Modulus: *frequency*

- 21.1.2. Shock response
 - 21.1.2.1. Modulus: *shock duration*
- 21.2 Acceleration calibrator
 - 21.2.1. Acceleration output (sinusoidal)
 - 21.2.1.1. Modulus: *frequency*
 - 21.2.2. Shock output
 - 21.2.2.1. Modulus: *shock duration*
- 21.3 Accelerometer
 - 21.3.1. Charge sensitivity
 - 21.3.1.1. Modulus: *frequency*
 - 21.3.1.2. Phase: *frequency*
 - 21.3.2. Shock sensitivity
 - 21.3.2.1. Modulus: *peak value, shock duration*
- 21.4 Acceleration measuring chain
 - 21.4.1. Voltage sensitivity
 - 21.4.1.1. Modulus: *frequency*
 - 21.4.1.2. Phase: *frequency*
 - 21.4.2. Shock sensitivity
 - 21.4.2.1. Modulus: *peak value, shock duration*
- 22. Angular vibration
 - 22.1 Angular acceleration measuring instrument
 - 22.1.1. Angular acceleration response
 - 22.1.1.1. Modulus: *frequency*
 - 22.1.2. Shock response
 - 22.1.2.1. Modulus: *shock duration*
 - 22.2 Angular acceleration calibrator
 - 22.2.1. Angular acceleration output (sinusoidal)
 - 22.2.1.1. Modulus: *frequency*
 - 22.3 Angular accelerometer
 - 22.3.1. Charge sensitivity
 - 22.3.1.1. Modulus: *frequency*
 - 22.3.1.2. Phase: *frequency*
 - 22.4 Angular acceleration measuring chain
 - 22.4.1. Voltage sensitivity
 - 22.4.1.1. Modulus: *frequency*
 - 22.4.1.2. Phase: *frequency*