BSWA TECH

BSWA SW420R Impedance Tube System

- For Pavements Absorption Testing

- *ISO13472-2*

Version: 201406

BSWA Company Introduction

Established in 1998, BSWA Technology Co., Ltd. is becoming the preferred supplier for acoustical measurements. With headquarter located in Beijing, BSWA currently employs 100 staffs with branch offices in Shanghai, Guangzhou, and Chengdu. BSWA's products are distributed in over 40 countries through our sales partners.

BSWA Products cover a full range of acoustic measurement devices. The products are sorted into easy-to-follow sections:

- Microphones
- Sound level meter
- Measuring systems
- Material testing
- Audio testing
- Outdoor monitoring systems
- Sound sources
- Cable and accessories

BSWA Impedance Tube System for Pavements Absorption Testing

SW420R *New !*

- Specially designed for measurement of sound absorption
- Properties of road surfaces.
- Integrated design, portable and stable.
- Selected sealing material, reducing the leak of sound signal.

Recommended matching product:

- Power amplifier: PA50
- DA: MC3522
- Software: VA-Lab IMP

Overview

ISO 13472-2: 2010 specifies a test method for measuring in situ the sound absorption coefficient of road surfaces with impedance tube. This method enables evaluation of sound absorption characteristics without damaging the surface. SW420R is designed according to ISO 134722, and the performance satisfies the requirement of ISO 13472. The test results can be used to qualify the absorption characteristics of road surface for vehicle, tyre testing and other traffic noise studies. However, the field of application is limited to low absorption surfaces, such as those in accordance with ISO 18044. The method is not reliable if the measured sound absorption coefficient exceeds 0.15.

The use of SW420R is the same as description in ISO 10534, VA-Lab IMP module can be used with SW420R.

Specifications:

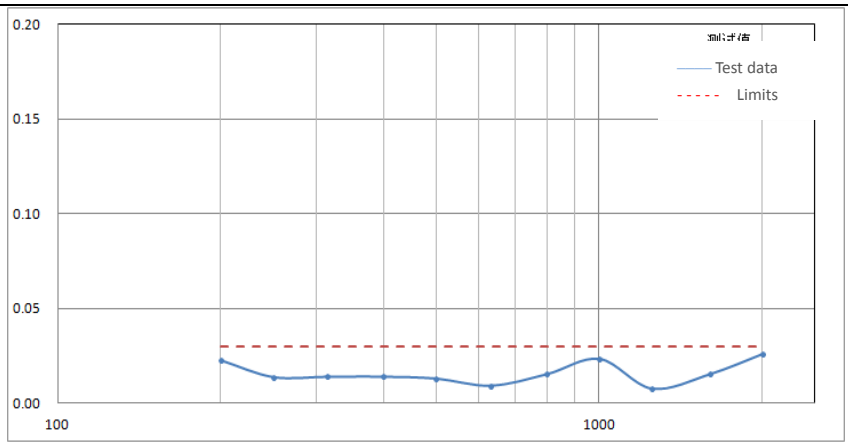
Standards	ISO13472-2:2010、ISO10534-2:1998、GB/T 18696.2-2002
Frequency Range	250-1600Hz(1/3Octave) / 220-1800Hz
Inner diameter	100mm
Length of tube	680mm(including handle)
Microphones	1/4” ICCP MPA416
Microphone Spacing	80mm
Height of microphone to ground	150mm
Totally reflective specimen	Rounded steel plate of 10mm thickness，Diameter: 185mm
Weight	14Kg
Package size	74×36×41(H) cm

Performance

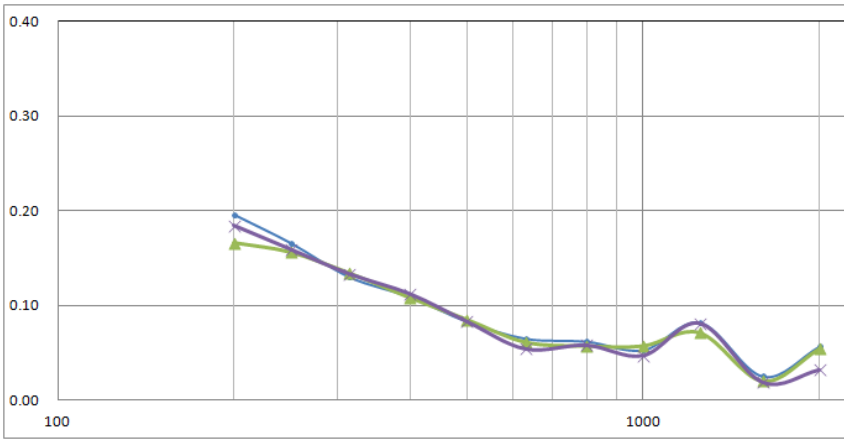
SW420R measured data

Reference measurement on a totally reflective specimen

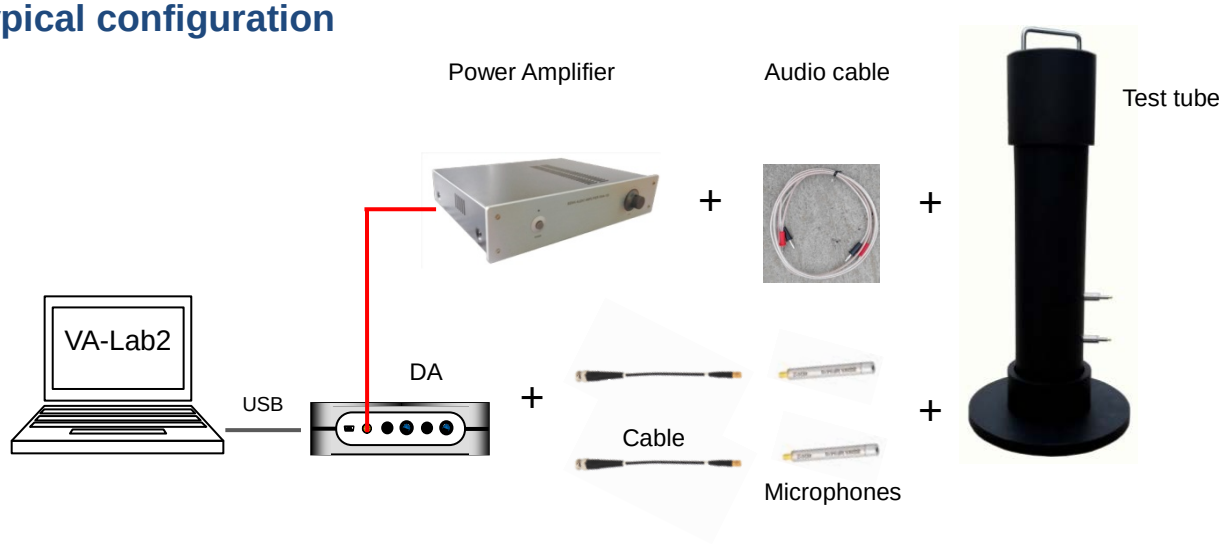
Hz	Abs.	Limits
250	0.014	0.03
315	0.014	0.03
400	0.014	0.03
500	0.013	0.03
630	0.009	0.03
800	0.015	0.03
1000	0.023	0.03
1250	0.007	0.03
1600	0.015	0.03



Typical test results of concrete.
Three test results to verify its repeatability



Typical configuration



Items in the carrying case of the SW420R system:

① Test tube: SW100-R

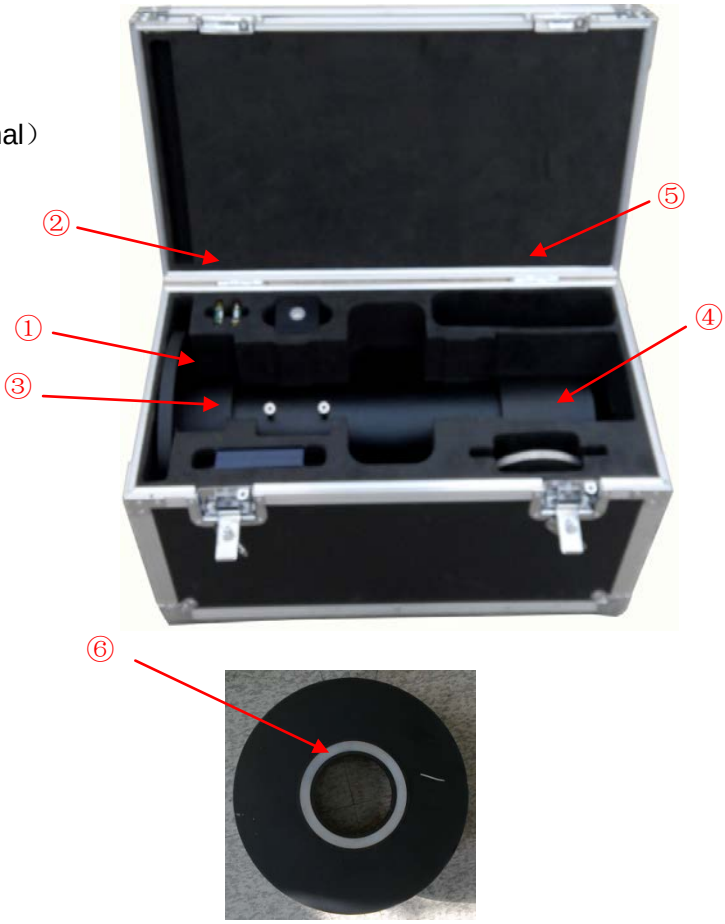
② Calibrator CA111 and AA Battery×2（optional）

③ Microphone: MPA416×2

④ Totally reflective specimen（optional）

⑤ Cables：Audio cable、CSB005×2

⑥ Sealing strip on the bottom of tube



Typical Complete Setup for SW420R System:

BSWA IMPEDANCE TUBE SYSTEM SW420R			
#	PART #	DESCRIPTION	NUMBER
1	SW420R	For accurate measurement of sound absorption coefficients of the pavement-ISO 13472-2 (250-1600Hz(1/3Octave) / 220-1800Hz), 100mm inner diameter, includes: - a 100mm diameter tube - a 100mm diameter sample holder	1
2	MC3522	USB Soundcard with 2 ICP input channels and 1 output channel; with built-in power amplifier of 20W	1
3	MPA416	1/4" microphone with ICP Preamp	2
4	CBS005	BNC to SMB cables, 5m, to connect MPA416 to MC3522	2
5	CAA002	2m cable of banana connectors to connect MC3522 to the speaker of the impedance tube.	1
6	CA115	1000Hz, 114dB calibrator, Type 2, with adaptor for 1/2'' and 1/4" microphones	1
7	VA-Lab2 BASIC	Base software for measurement of noise and vibration, used for 2 channels	1
8	VA-Lab2 IMP-A	Software for measurement of sound absorption coefficients (2 mics are needed)	1

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