IMPEDANCE TUBE SYSTEM

SW420R

ISO13472-2

GeoNoise
Acoustic Consulting
Sound Instrumentation and Calculation Software

Noise & Vibration Registration Instruments and Software

6/54-56 Poemsin Road Soi 42, Sai Mai,
10220 Bangkok, Thailand
T: (+66) 02 1214399
e : inquiries@geonoise.asia

www.geonoise.com

IMPEDANCE TUBE SYSTEM

For Pavements Absorption Testing

SW420R

ISO13472-2

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 such 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 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 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.

FEATURES

· 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.

IMPEDANCE TUBE SYSTEM | SW420R

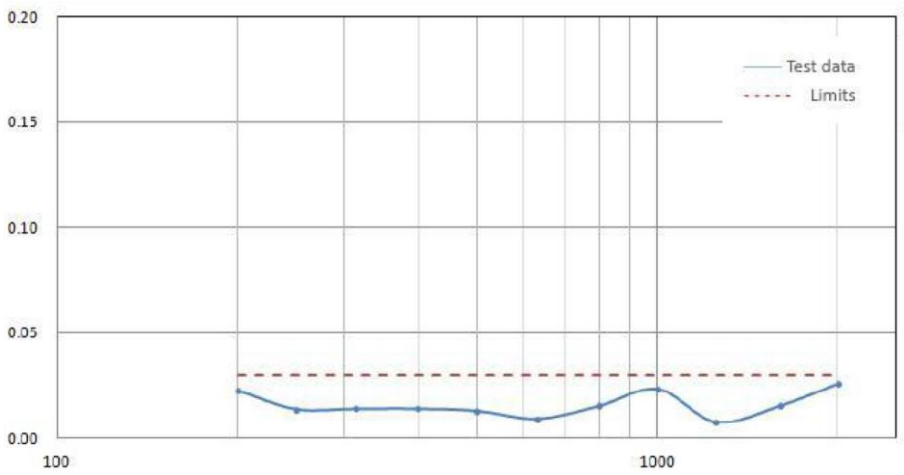
SPECIFICATIONS

Standards	ISO13472-2:2010, ISO10534-2:1998, GB/T 18696.2-2002
Frequency Range	250 – 1600 Hz (1/3 Octave) / 220 – 1800 Hz
Inner Diameter	100 mm
Length of tube	680 mm (including handle)
Microphones	¼" ICCP MPA416
Microphones Spacing	80 mm
Height of microphone to ground	150 mm
Totally reflective specimen	Rounded steel plate of 10 mm thickness, Diameter : 185 mm
Weight	14 kg
Package size	74 x 36 x 41 (H) cm

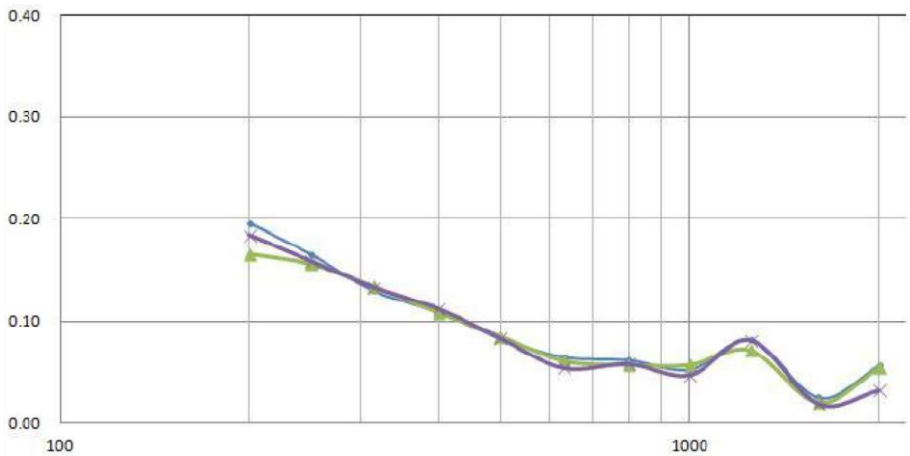
PERFORMANCE SW420R MEASURED DATA

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 result of concrete. Three test result to verify its repeatability



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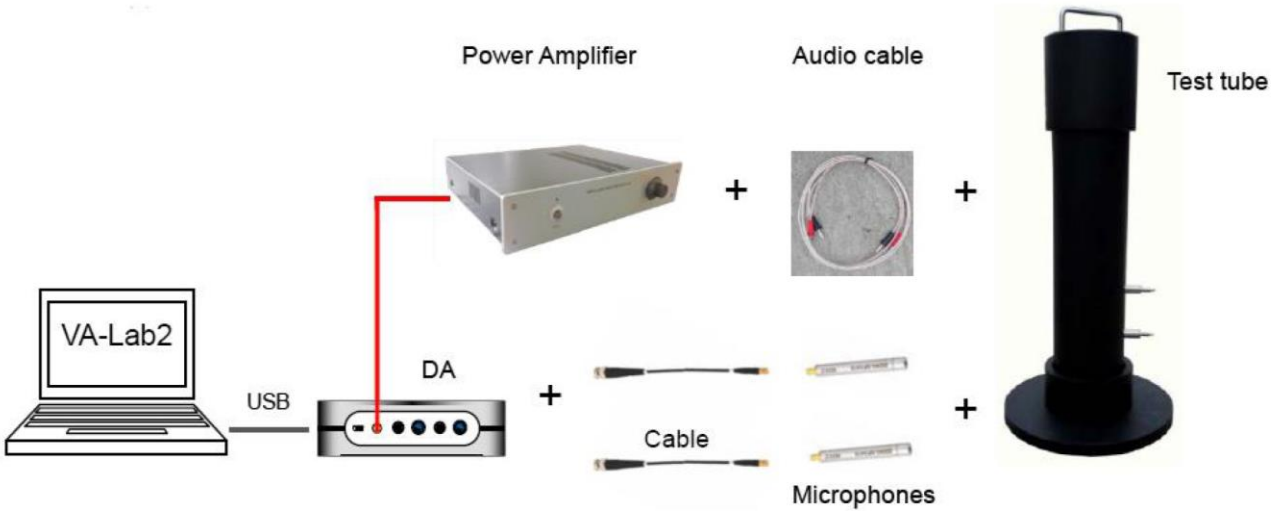
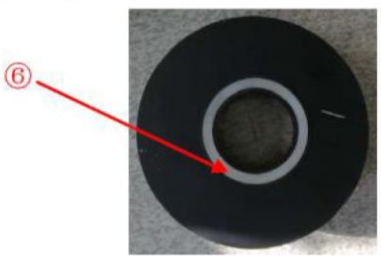
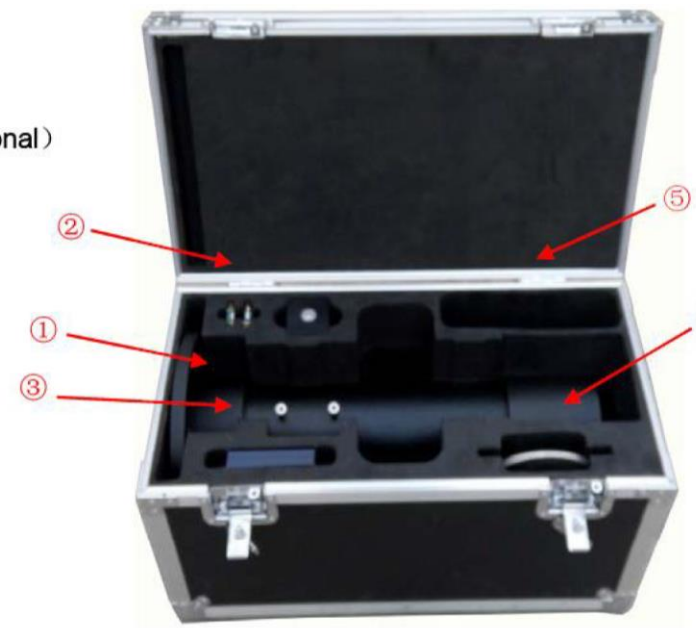
TYPICAL CONFIGURATIONS



SW420R LIST OF COMPONENTS

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





SW420R COMPLETE SETUP

No.	Part no.	Description	Number
1	SW420R	For accurate measurement of sound absorption coefficients of the pavement – ISO 13472-2 (250 – 1600Hz(1/3Octave) / 220-1800Hz), 100 mm inner diameter, includes: • a 100 mm diameter tube • a 100 mm 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	¼" 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 ½" and ¼" 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 (2mics are needed)	1

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Geonoise Asia
Geonoise Asia Co., Ltd.
Room 1603
Island Place Tower
510 King's Road
Hong Kong
+852 8198 8469

Geonoise Malaysia
Acoustic Vibration Consulting Malaysia Sdn. Bhd. (AVCM)
D-10-02, Sunway Nexis,
No. 1, Jalan PJU 5/1, Kota
Damansara 47810, Petaling
Jaya, Selangor, Malaysia.
+60165271233

Geonoise Thailand
Geonoise Thailand Co., Ltd.
6/54-56 Poemsin Soi 42
10220 Bangkok
Thailand
+66 21214399

Geonoise India
SVI Geonoise Technologies Private Ltd.
Parappana Agrahara,
Bangalore 560100 India
+91 9360390151

Geonoise Indonesia
PT. Global Suara Indonesia
Ruko Golden 8 Blok H No. 25,
Jl. Ki Hajar Dewantara,
Gading Serpong Pakulonan
Barat, Kelapa Dua Kab
Tangerang 15810 Indonesia
+6221 5010 5025

Geonoise Vietnam
14 Thien Phuoc, Ward
Tan Binh District
Ho Chi Minh City
Vietnam
+84 28 3601 679

Geonoise Philippines
51-14th Street
New Manila QC
1110 The Philippines
+639175298642

www.geonoise.co.th | www.geonoise.asia