

# Building Acoustic

## Practical solutions



## Practical hardware solutions

One big advantage of SVANTEK sound & vibration instruments is their ability to make building acoustics measurements. Their high accuracy along with millisecond spectra logging allows users to perform all the measurements necessary to obtain facade, airborne or impact sound insulation results. SVANTEK instruments are proving to be invaluable for the measurement of building acoustics with their predefined setups making measurement at multiple points both easy and fast. Both the instrument and the sound source can be controlled remotely with the dedicated smartphone application. Building acoustic measurement can be done with a single channel instrument such as the SVAN 977 and SVAN 979.

**CLASS 1 TYPE APPROVED** Sound Level Meter and Analyser with the superior technical specifications.

**RT60** functionality in the instrument is the fast verification of results on site. Calculation of RT60 values is based on 1/1 or 1/3 octave logging results.

**Frequency analysis** is a critical tool in building acoustics measurements. Depending on the application, frequency analysis can be done in 1/1 octave spectra or 1/3 octave spectra. SVANTEK devices record the time history of spectra with millisecond accuracy which enables the calculation of RT60 results as well as calculation of sound insulation results.

When dealing with **facade insulation** it is often necessary to evaluate the background noise on the building surroundings. The effective and low-cost solution to this requirement is a waterproof portable monitoring kit set-up to do periodical measurements of the environment. When required, the SVANTEK instrument can be locked into the protective case and placed in a suitable position for outdoor noise measurement.

The flagship of the SVANTEK range is the SVAN979 which offers the added functionality of a **signal generator** which is capable of generating pink noise, white noise or a selected sine wave.

Built-in **Bluetooth®** interface provides additional advantages such as device configuration by usage of a smartphone or tablet with Android platform and **Building Acoustic Assistant** application.



## Use Drone to control your sound sources remotely!



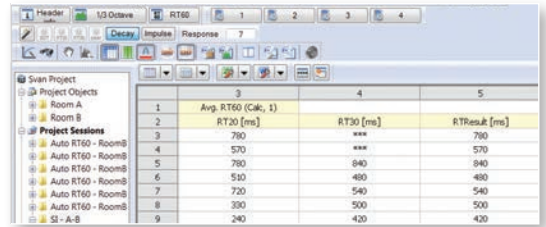
The DRONE is a User System Interface (USI) that allows to connect external devices such as Svantek's sound level meters and peripherals (e.g. sound source) to the Building Acoustic application. External devices can connect to a DRONE or through a Bluetooth® or with a cable using the serial interface. Once connected, the smartphone application will start and stop the signal from sound sources automatically.





## SvanPC++ Building Acoustic Module

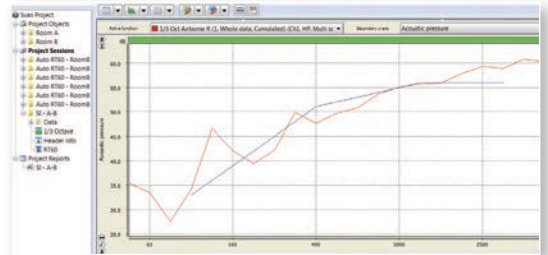
All measurement files are saved in the internal memory of the instrument but from this point more complex analysis can be carried out using the SvanPC++ Building Acoustics software module. The software includes a very powerful calculator that automatically averages 1/n octave spectra time history and performs calculation of reverberation time.



	3	4	5
1	Avg. RT60 (Calc. 1)		
2	RT30 [ms]	RT30 [ms]	RTResult [ms]
3	780	***	790
4	570	***	570
5	780	840	840
6	510	480	480
7	720	540	540
8	330	500	500
9	240	420	420

## Sound insulation calculation

The sound insulation calculation is done automatically once the data files are assigned to rooms using a simple drag & drop procedure. Our instruments are suitable for all series of ISO 140 standards for laboratory and field measurements of sound and impact insulation. The ISO 717 rating of sound insulation in buildings and of building elements is automatically calculated and included in the report templates.



## Building Acoustics Application for Smartphones



The **BA Assistant** application supports SvanTek sound level meters equipped with the **Bluetooth®** interface, e.g. SVAN 977 and SVAN 979

Application working on **Android** platforms is easy to install and intuitive to operate.

The user interface allows to preview results in the form of **time-history plots** as well as numerical values.



The application enables to add **PHOTOS** and **VOICE** comments to the measurement projects.

The size of the display of a mobile device makes it convenient to display **SPECTRUM** views such as 1/3 octave analysis.



## Sound insulation measurement

The smartphone application helps the user in calculating the insulation in accordance with ISO 16283. Sound insulation results are presented on the display and in the form of a report compliant with the ISO requirements.

A project containing measurements from the source and receiving rooms for different sound source positions is created during the measurement. The project is saved in the memory of the sound meter along with the measurement files.



# SP 95 Impact Ball For Building Acoustics



SP95 Impact Ball is used for sound insulation testing in light weight structures where a standard (tapping machine) impact sound source would create too much impact force. It has been designed in accordance to ISO 10140-5 and ISO 16283-2 standards.

The use of SP 95 Impact Ball is very easy - it is dropped vertically in a free fall from height of 100 cm to the surface of the floor. In practise SP95 can be used to assess soft impacts related to human disturbance, such as children jumping.

Used for sound insulation testing in light weight structures where a standard (tapping machine) impact sound source would create too much impact force.

Used for low frequency impact noise insulation tests in the octave bands from 31,5 Hz to 500 Hz.

Meets ISO 10140-5 and ISO 16283-2 standards

Mass 2,5 kg and convenient size allows easy transportation and carrying.

Comfortable carrying bag included

Easy to clean using water



## Technical Specifications

Standards \_\_\_\_\_ ISO 10140-5: 2011  
\_\_\_\_\_ ISO 16283-2: 2015  
Material \_\_\_\_\_ Silicone rubber  
Diameter \_\_\_\_\_ 180 mm  
Weight \_\_\_\_\_ 2,5 kg

Impact force exposure level in each octave band  
of the heavy/soft impact source

Octave band center frequency Hz	Impact force exposure level $L_{FE}$ dB re 1 N
31,5	39,0 +/- 1,0
63	31,0 +/- 1,5
125	23,0 +/- 1,5
250	17,0 +/- 2,0
500	12,5 +/- 2,0

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