

# MICROFLOWN IN-SITU ABSORPTION SET-UP

In-Situ absorption mittausjärjestelmä pohjautuen PU-anturiin

**MSP\_VIRTUEMA** Microflow Technologies  
**RT\_MANUFACTURER**

**MSP\_VIRTUEMA** in-situ  
**RT\_SKU:**

Microflow Technologies offers a complete solution to measure the acoustic properties of materials with its In-situ absorption setup.

There are many unwanted noise sources in our industrialised society. Acoustic noise pollution can be reduced by absorbing sound energy. Absorbing material packages are used in many applications to attenuate sound. Knowing exactly the acoustic properties of your materials and the effectiveness of the applied material packages is a requirement to successfully reduce noise levels. The In-situ absorption setup is a solution to achieve just that.

Destructive testing of material samples is no longer required. Furthermore, sound absorption can be measured under any angle of incidence. The extremely high spatial resolution, that the system provides (as low as 4 mm), allows for the analysis of inhomogeneous, e.g. perforated materials.

The system can even measure, next to material samples, curved materials and complete assembled parts. As the in situ method also works with a relative movement between sample and probe, end of line control of materials, or the quality of acoustic packages applied in the final assembly line, can be tested.

## The Impedance gun

With a small, handheld impedance gun, the acoustic absorption, reflection, or impedance can be measured in just a few minutes. All this within a broad frequency range (300 Hz – 10 kHz) and under normal and oblique angles. From a sound source, positioned 23cm away from a PU probe, white noise is generated towards the measured sample. The design of the impedance gun is equipped with a system to decouple the sensors from structure born vibration generated by the spherical loudspeaker. The sound pressure and acoustic particle velocity are measured right on the surface of the material. The absorption and reflection coefficient can be obtained directly from the measured impedance, which is the complex ratio of sound pressure and particle velocity.

Measurement results from the Impedance Gun are processed through a dedicated software application, which provides a user friendly interface to govern all your measurements regardless if they are related to different material samples, or different points within just one sample.



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## The Kundt's tube

Furthermore, the PU probe which is delivered with the in-situ absorption system, can also be used for measurements in a Kundt's tube (standing wave tube). The In-situ absorption software is delivered with tools necessary to calculate the absorption and reflection coefficients from a measurement in a Standing wave tube taken with a PU probe (the tube itself is not part of the system). Thanks to this function, you'll be able to take full advantage of the capabilities of your PU probe. Benefit from better estimation of the absorption and reflection coefficients, as compared to the two microphone measurement taken in a standing wave tube.

## MSP\_VIRTUEMART\_PRODDOCS

1. [Esite](http://www.mip.fi/images/docs/fi/productleaflet_in-situabsorption.pdf), (URL: [http://www.mip.fi/images/docs/fi/productleaflet\\_in-situabsorption.pdf](http://www.mip.fi/images/docs/fi/productleaflet_in-situabsorption.pdf))

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