AqFlex: Variable control of the reverberation time of a room

The AqFlex system is the only acoustic system in the world that can alter the reverberation time (RT) of a room in the frequency range proven to be decisive for the sound quality for pop/rock: 50-200 Hz.

Where is this to be used?

In any hall where both classical and amplified music such as jazz, pop and rock is played: multipurpose halls in performing arts centres and cultural institutions, music schools as well as recital halls in high schools, colleges, universities etc. The pricing is made accordingly.

How does it work?

At the push of a button. It takes app. 10 min before the inflatable membranes are fully functioning. When these are filled by air they absorb sound by the membrane-absorber principal lowering the RT of the hall for amplified music. For small acoustic jazz ensembles or chamber music only half the tubes are activated. For choir and symphonic music the system remains in the off position. The pressure is constantly monitored to ensure optimal absorption at all times. A timer shuts off the system automatically if it has not been stopped manually. It uses very little power when active.

How is it installed?

The inflatable membranes are placed in lines with a distance of app. 100 cm. They are mounted on rails since they contract when being inflated.

They demand 125 cm of ceiling height.

The air supply system is easily installed and reliable.

Invisible acoustics!

Underneath the AqFlex many customers will place a false sound transparent ceiling whereby the AqFlex cannot be seen – only heard.

In halls with a very high ceiling it may be beneficial to install more than one layer of absorbers since this will almost double the absorption coefficient.

How long time does the installation process take?

Installation: 2 professional installers for 4-7 days depending on size of hall.

False ceiling: installation app. 2-4 days

Why are the low frequencies crucial to control?

Why is it important to absorb bass sound at amplified music concerts?

It has been scientifically proven that a low RT at these frequencies is the decisive factor for good acoustics for amplified music concerts. The bass sounds are amplified with thousands of watts. Moreover since bass sounds emerge omnidirectionally from the speaker cabinets the critical distance becomes small whereby the sound will be perceived muddy even close to the speakers if not absorbed. This undefined bass sound partially masks higher frequencies.

Since a long RT in the bass is very important for classical and other non-amplified music genres for musical strength and warmth RT at these frequencies must be varied in order to achieve good acoustics at such different performances.

Why is it less important to absorb sound above 1 kHz at amplified music concerts?

The audience absorbs 6 times more sound at high frequencies than at low. Correctly angled PA loudspeakers will by itself lead to controlled hi frequency RT.

These frequencies are usually added quite extensive amounts of artificial reverb by the sound engineer – that is not needed when employing the AqFlex.

To acquire sought-after HF envelopment and vivacity.

Measurements from the proof-of-concept installation on photos. Normally there should be 40% more AqFlex absorbers (!)

Certified measurements of single layer absorbers from reverberation chamber at the Technical University of Denmark. The inactive absorbers can be retracted away from the ceiling if necessary.
Specifications

Acoustical: see diagrams

Physical: very thin fire retardant material. Everything else: galvanised steel.


The product complies with the relevant fire regulations: b.s1-d0, ASTM E 84, NFPA 701, and has received it’s CE certification in Europe.

Visit www.flexac.com for more information