

SOUND SOLUTIONS



Ecophon ceilings are lighter, have better aesthetic appeal and deliver high performance.

A lay person often tends to use the terms sounds insulation and sound absorption interchangeably. However, as Venkat Subramanian, Managing Director, Saint Gobain Gyproc, points out, the difference and thus the application for both is different.

SOUND INSULATION

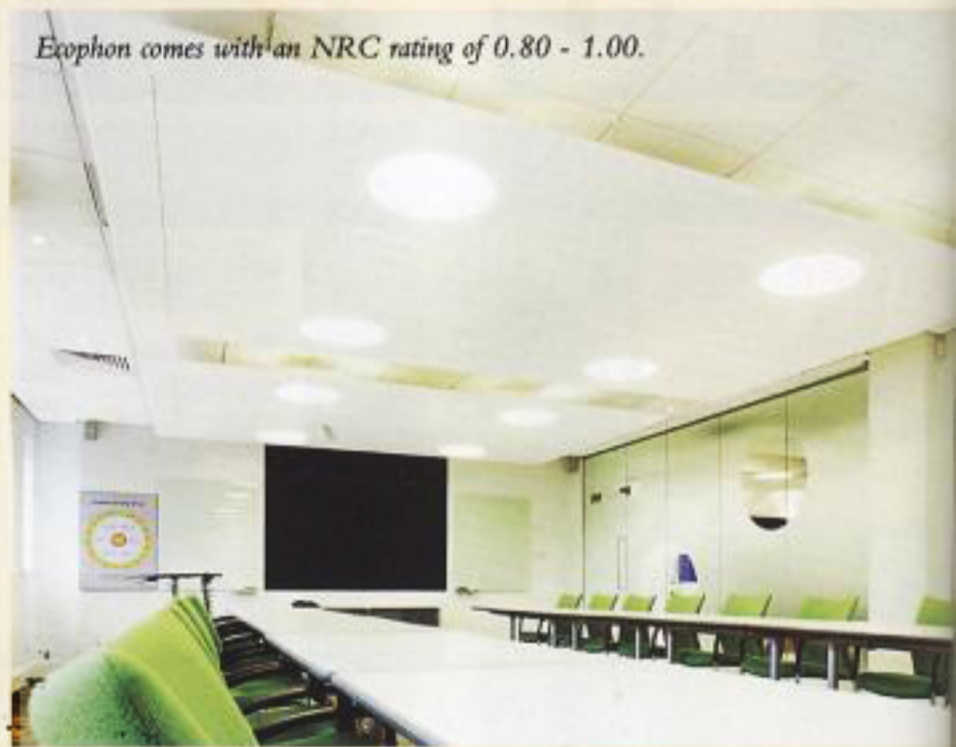
Sound energy travels through air as pressure waves, and when it strikes any surface, it gets absorbed, reflected, transmitted or diffused. Often, unwanted sounds of appliances, air-conditioning systems, talking, traffic etc, travels from one space to another, disturbing people and even adversely affecting their efficiency. The solution to this common problem is sound insulation.

HOW IT CAN BE IMPROVED?

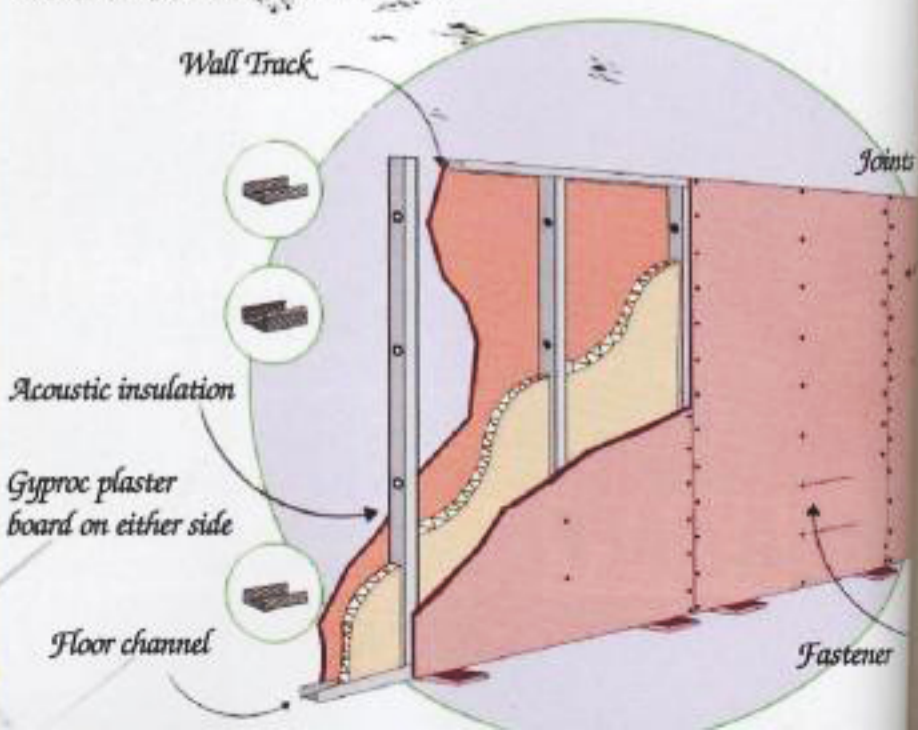
Sound insulation can be improved by increasing the mass of partitions because every doubling of mass betters sound insulation by 6db. But this also doubles the weight of the partition which may not be structurally practical in typical masonry construction and when space is limited. It is also more expensive.

Instead of masonry walls, which offer poor sound insulation, lighter construction forms like drywalls are a better alternative. It is a faster, dry construction technique of building lighter walls. A drywall consists of a Gypsteel ULTRA steel framework (studs, floor and ceiling channels) fixed to Gyproc gypsum plasterboards on both the sides. It is finished with a Gyproc joining compound and paper tapes for

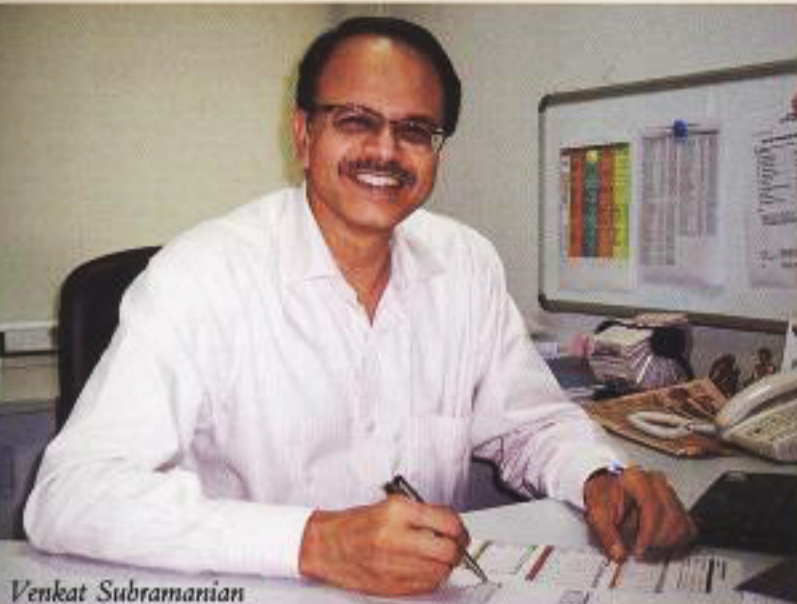
Ecophon comes with an NRC rating of 0.80 - 1.00.



A graphic representation of a dry wall.



For 80% to 100% sound absorption, architects all over the world use Ecophon.



Venkat Subramanian

a monolithic finish. There is an air gap between the metal studs which can be filled with glass wool insulation to get higher fire and acoustics performance ratings.

Drywalls provide sound insulation on the principle of mass-spring-mass. The air trapped in the cavity between the layers acts as a spring transferring vibrating energy from one layer to the other. Sound striking the partition causes the exposed layer to vibrate, and transmit some of its energy to the air in the cavity. This is transmitted to the second layer and into the room on the other side. Only a fraction of the sound energy is transmitted at each step; hence the cavity partition provides increased noise reduction. A 4.5" masonry wall will give sound insulation (STC) between 35-40db while a similar thickness drywall can give a STC rating of 50 plus. There are drywall systems that can provide STC as high as 75db. Sounds produced within large spaces such as open offices, classrooms, restaurants etc can be high decibel with loud echoes. Sound absorption is therefore needed to effectively control the noise created within a room to achieve acoustic comfort.

SOUND ABSORPTION

While designing a room for good acoustics, three aspects must be kept in mind - the people, the space and the activity for which the space is designed. For instance, open offices require limited sound propagation, while a concert hall or theatre needs sounds to reach all its seats. Sound absorption requirements depend on four aspects of acoustic quality - reverberance, clarity, auditory strength and spatial decay. Currently the Indian market uses low acoustic performance mineral fibre tiles with an NRC range of 0.50 - 0.60 (50% - 60% sound absorption). Ecophon, with an NRC rating of 0.80 - 1.00 (80% to 100% sound absorption), is a breakthrough acoustic solution by Saint Gobin Gyproc. The Ecophon range of soft felt (glass wool) based tiles are preferred worldwide for grid ceilings and wall panels because they are lighter, have better aesthetic appeal and deliver high performance.

For details visit: www.saint-gobaingyproc.co.in



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