

MAKING THE RIGHT CHOICE



Venkat Subramanian,
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Gyproc India Limited,
explains the growing
importance of drywalls
and the intricacies of
acoustic requirements to
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Saint-Gobain Gyproc India Ltd is a part of the \$43.8 billion Saint-Gobain Group and has been a market leader in its space in India for over two decades. Saint-Gobain Gyproc provides innovative building solutions and state-of-the-art products backed by world-class technical and service support. On the lines of expanding its product range, Saint-Gobain Gyproc plans to introduce various new products in the Indian market. These will supplement Saint-Gobain's existing product range of Gypboard plasterboards, Universal plasters, Gypsteel metal framings, Celotex acoustical ceiling tiles and various jointing products in a bid to provide enhanced solutions and take the Indian construction market to international standards. Mr Subramanian provides several insights into industry trends and functioning.

Do you think drywall solutions can become the norm in India? What are their advantages?

Gypsum products have been used over centuries in the construction space and are the material of choice because of gypsum's unique properties. Gypsum plasterboards are a lightweight material with excellent insulation properties—both thermal and acoustic—and can offer very good passive fire protection when used in combination with the right systems. These gypsum plasterboard systems are available for acoustical solutions, thermal efficiency requirements, passive fire protection and high impact applications.

The buildings of the future will be taller and hence will require lightweight construction material for faster construction with superior fire protection, which could render traditional construction materials obsolete. These requirements are met by gypsum plasterboard-based drywall solutions, which are 8–10 times lighter than traditional masonry construction systems, 30–40 per cent faster to install, provide excellent fire rating and acoustics, and are 100 per cent recyclable. Further, the boards are certified green products and can reduce the carbon footprint of any building.

In over 80 per cent of all interior construction in the developed markets across all applications, drywalls are used and this concept is gaining ground in India as well.

How is the acceptability of drywalls in the Indian market?

The acceptability of these products has risen significantly over the years as Indian construction practices have evolved to adapt to the materials and methods used by the developing world. Over the next few years, this category is set for significant growth through a combination of efforts by gypsum producers, the adoption of modern construction techniques by builders and a changing regulatory environment that promotes high-performance environmentally-friendly buildings. Currently, most new office spaces are partitioning cabins with plasterboard drywalls, while a few leading international hotels and hospitals and

industrial units are being completely built with drywall solutions.

What is the importance of drywall solutions for taller buildings?

As our cities start becoming increasingly crowded, buildings will start to grow vertically to accommodate them. In taller buildings, the challenge is to reduce the dead load on the buildings to make them lighter. This will also reduce the requirement for structural steel reinforcement. As drywalls are 8–10 times lighter, they reduce the dead load considerably and facilitate the building of tall structures.

How does a drywall offer fire protection to buildings?

Gypsum-based products and systems provide excellent passive fire protection solutions offering protection from one to four hours. These take care of all three elements of fire protection—stability, integrity and insulation requirements—in equal measure. Gypsum contains approximately 21 per cent water and about 79 per cent calcium sulphate, which is inert below a temperature of 120°C. The bound crystalline moisture in gypsum content plays a

Gyproc Fire Protection Solutions

Saint-Gobain Gyproc has a range of drywall solutions branded GypWall Fire Resist which are popularly used by several leading data centre providers, banks and offices to provide one- four-hour fire protection for its walls. Gyproc Fire Protection solutions are achieved through a combination of Gyproc Fireline gypsum plasterboard and Gypsteel ULTRA metal framing systems. The Gyproc Fireline plasterboard is made from a pink paper liner wrapped around an inner core made primarily from gypsum plaster. These go a long way in ensuring that the building is fire-safe and that there is a quick recovery time in the unfortunate event of a fire.

significant role in fire resistance, which makes gypsum a material of limited combustibility.

How do drywalls provide better sound insulation than masonry construction?

Normally, the average sound insulation of a material forming a solid partition is governed by its mass. The heavier the material, the greater is its resistance to sound transmission. In order to





increase the sound insulation of a solid partition by 4–5 dB, the mass has to be doubled. Drywall systems use the benefit of the Mass-Spring-Mass (M-S-M) principle, i.e. two leaves of surface mass (plasterboard on either side of a metal stud) separated by a spring, which is the air cavity. Filling the air cavity with glass wool insulation makes the spring softer, which makes the M-S-M system more efficient. For example, to achieve a sound insulation of 41 R_wdB, builders will need a 75 mm partition with a weight of 19 kg/m², whereas an equivalent masonry construction will weigh 124 kg/m² and have a width of 100 mm. As the sound insulation requirement goes up, it becomes almost impossible to build masonry walls. For example, the sound insulation requirement for studios is close to 70 R_wdB, which can be achieved with a 300 mm GypWall Audio weighing approx 50 kg/m². This will be practically unviable with a masonry wall because of the weight and width of the wall necessary to provide comparable insulation.

What is the scope for acoustic ceilings in India?

Our ears are made for natural sounds in a natural outdoor environment. Studies have shown that using high sound absorption ceilings can dramatically improve the productivity of

employees in an office, hasten recovery of patients in hospitals, provide a better learning environment in schools, etc. As quality of life gains prominence in the minds of the Indian consumer, we see an increasing demand for ceilings with high sound absorption properties in the near future, especially in segments like offices, hospitals and education in particular.

What affects a room's acoustic comfort?

While designing spaces, it is very important to understand the acoustic requirements in terms of sound absorption and sound insulation. This requires a thorough understanding of the sound level which can affect the sound environment both inside and outside the room, the frequencies of these various types of sounds, reverberation time and background noise. The right room design and the right building material go hand in hand to deliver the right room acoustics.

What is Ecophon and what are its advantages?

Ecophon provides breakthrough acoustic solutions which deliver very high levels of acoustical performance. Ecophon offers a range of products and solutions for ceilings and wall panelling with a Noise Reduction Coefficient (NRC) rating ranging from 0.80 to 1.00 i.e. 80–100 per cent sound absorption, thereby creating the right environment for sound comfort.

Ecophon helps to create beneficial working environments across offices, multiplexes and educational institutes and is effective in controlling the noise in healthcare premises, high-tech industries and public areas. Ecophon solutions are available in a variety of edge designs for concealed fixing and visible grids for direct fixing. These solutions enhance the overall appearance of edge design of the ceiling and allow different methods for detachability and access to installations in the ceiling void.

The Ecophon range of tiles of soft felt (glass wool) is preferred worldwide for grid ceilings and wall panels because they give very high acoustic absorption performance. Compared to mineral fibre tiles, they are lighter and have better aesthetic appeal. Currently, low acoustic performance mineral fibre tiles, which has the Noise Reduction Coefficient (NRC) range of 0.50–0.70, (50–70 per cent sound absorption) dominates the Indian market. ➔