9 sustainable building materials that could transform construction

Tesla's solar roof
Image courtesy : Tesla's

Sustainability is at the heart of today's building and construction industry. Building with sustainable material not only ensures it will last longer but is also eco-friendly. Here we feature the nine building materials that could help in sustainable construction:

Ultrafine additives

Construction industry is a major contributor to economic development of the country. Infrastructure development through network of roads, bridges, tunnels, rail lines, airports, sea ports facilitates the easy transportation. To satisfy the increasing demand for energy, hydro power, thermal power, nuclear power and solar power generation facilities will be required.

A common and basic factor in all above activities is concrete and concrete structures. Looking at a huge investment required in building up these facilities, sustainability of concrete structures will be a focus point. According to Yatin Joshi, Head - Alccofine, Ambuja Cements Ltd, "Over the period of time concrete technology has undergone a tremendous change. Term 'High Strength' is being replaced by 'High Durability (Sustainability)'. Concrete satisfying all the durability parameters can also be high strength but reverse is not true."

Lingel uPVC doors & windows

High performance concrete (HPC) has gained worldwide popularity in the construction industry since 1990. In practice, high performance concrete, are generally characterised by high cement factors and very low W/C ratios. Usage of supplementary materials like fly ash, GGBFS etc. has been in practice since long to achieve durable concrete mixes.

Recent development in achieving sustainable structures (concrete with high durability factor) is Ultrafine slag based additives. Concrete by its nature is a porous material which is single biggest weak point or hindrance towards achieving durability parameters. "Ultrafine particles like Alccofine with average particle size less than 5 microns fills the gap between two cement particles. It improves particle packing density of paste component. With its particle size distribution, chemical composition and reactivity index; it helps refine the pore structure of the cement paste. Such concrete not only becomes more durable but also helps increase the speed of construction," Joshi said.

Ultrafine additives no doubt hold promising future towards sustainable construction.

Colour membrane

From the last few years, traditional ways of waterproofing such as cementations coating or bituminous membrane application is getting replaced by the acrylic waterproofing coatings like colour membrane.

Coiour membrane is considered as 'green' and sustainable in terms of solar reflective to reduce the energy use. It can be used for above and below ground applications. It also has properties like best adhesion to substrate, waterproof, heat reflective, life-cycle cost effective and adhere to different weathering condition. "Brush or spray applied elastomeric membrane such as Choksey's 'Color Membrane' provides sustainable waterproofing solution for different application," said Nikhil Rangari, Asst. Manager Marketing at Choksey Chemicals.

uPVC doors ft windows

With advancement of technology in every field, windows and doors are also manufactured keeping in mind sustainability .With variety of options available in the market consumer needs to be conscious about what will sustain in the long run and at the same time the product is budget friendly.

uPVC stand for unplasticized polyvinyl chloride. uPVC windows and doors last longer and installing these will solve your issue for the next two decades. "Windows made of uPVC structures provide higher performance, are efficient in saving energy and can be sustained for a longer period of timewhich makes it extremely eco-friendly. Another advantage of uPVC is that it acts as a natural insulator which helps to resist heat loss in winter and reduces heat