



## ROOFING & WATERPROOFING

# GREEN WASH

New materials and technologies are helping create eco-friendly roofs so that residents don't hit the roof.

BY JAYASHREE MENDES

**W**ith land prices shooting through the roof and cities bursting at the seams, it's unreasonable for the common man to afford the luxury of building a house. One has to be content to buy an apartment if it's within one's means. Having said that, it doesn't signify doom for the industries associated with housing or building materials. In terms of roofing and waterproofing, which is

what this feature is about, houses, villas, resorts, factories, will always come up and they will need a roof.

Innovations in any industry arise as buying power increases and restless people seek novelty. No more is a 'roof over your head' just a place to live. The roof too must receive its fair share of praise.

Ashok Ninan, MD, Monier Roofing, says, "Many interesting developments are taking place globally and roofing tiles



“IN INDIA, THE PRE-PAINTED MARKET IS GROWING AT 15-20%. PEOPLE ARE MOVING FROM GALVANISED TO COLOUR-COATED.”  
RV SRIDHAR

and attractive features and profiles are being developed. One such feature is that of lighter roof tiles which are getting accepted quickly over traditional roof tiles. Also tiles with special coating that reflect more infrared rays and thereby make the roofs cooler are being developed.”

Monier has two technical centres at Heusenstamm in Germany and at Crawley in UK who are working on developing tiles with new and interesting features. They have developed a new type of lighter concrete roof tile, Aerlox. The tile uses a highly advanced formulation and an innovative design structure which allows it to weigh up to 40% less than a traditional tile whilst retaining all impor-

tant advantages, especially its durability. “Also their recent development is Protegon, the future of concrete roof tile technology. Special pigments on its surface make this roof tile reflect 300% more infrared rays than traditional roof tiles. Protegon has a high corrosion protection.

Till a few years ago, India and other countries preferred asbestos cement sheets in roofing and walling applications. But soon metal sheets started replacing asbestos cement sheets when it was understood that asbestos cement sheets could be carcinogenic in nature, while being non-bio-degradable as compared to metal sheets that can be recycled. Ajay Rattan, GM, sales, construction & engi-



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Monier Roofing offers tiles and products in a variety of designs.



Pidilite's solutions offer five times faster completion with little manpower.



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neering (LYSAGHT business), Tata Bluescope Steel, says, “Asbestos cement sheets are almost three times heavier as compared to metal sheets, so this resulted in much saving in the supporting structure. On our part, we have conscientiously developed green products and they can be used in applications such as even rain water harvesting.”

In terms of metal sheets, adds Rattan, the first use of metal sheets was by GI coating, what is a galvanized coating and painted GI products, which is PPGI. But soon designers and engineers realised that durability of the product was questionable and Bluescope Australia, the pioneers, developed a coating of aluminium and zinc which was proven to be better than typical GI coating. Acceptance



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RIGHT DOSAGE AND THE CORRECT APPLICATION. ”

DR SANJAY BAHADUR

grew and now large projects have adopted AZ150 products or aluzinc products. Tata Bluescope manufactures colour coated coils using Thermatech technology. This optimises the thermal performance of the coil which helps in energy conservation and reduces the ambient temperature of the roof. Its Lysaght range of premium building products are manufactured from high-quality Zinalume steel and Colorbond steel. The range of products includes roofing sheets, walling sheets, decking sheets, purlins, solar mounting structures and accessories.

As far as steel buildings go, high-performance roofing is what matters here the most. Considering that noth-ing else will suffice, standing seam roofs are what do the



Safintra has executed the tiling project for Goa engineering college.

job best. Vikas Kaushal, president, sales & marketing, Interarch Building Products, says, "We provide standing seam roof in coated steel or aluminum. The advantages of using a standing seam roof are that it can be fixed on the roof structure without piercing the roof profile and thereby reducing the probabilities of leakages. Metal roofs are considered to be cool roofs because metal has high solar reflectance index and low thermal mass as compared to an RCC structure."

Till a few years ago, roofing products were used like cement air buster sheets. It was the efforts of a few vigilantes across the globe who battled for cool roofs, especially in the tropics. Everyone knows that cool roofs save money and keep indoor temperatures bearable thus reducing the need for air conditioning. What few know that is smog forms more rapidly at higher temperatures, and if people want to breathe in safer air, then one needs to look at reducing excess urban heat. The vigilantes then made it a movement to push countries to go in for cool roofs and India is one of those that has committed to prioritise reflective roofing.

In all this, India found an opportunity for air roofing and retro-fitting where an alternate product is metal roofing. Jawahar Das, COO, Safintra, says that metal can be recycled and this makes it a green product. "India has slowly adapted various materials for roofing. From galvanised corrugated sheets to colour coated sheets and galvalume aluzinc (this is a combination of aluminium and zinc and is a coating technology that enhances the life of the roof), we have adopted roof structures as the climate demands."

Speaking of how the Indian market has been quick at



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picking up trends, RV Sridhar, CEO, Essar Steel, says, "In India, the pre-painted market is growing at 15-20%. With increasing prosperity, people are moving from galvanised to colour-coated. They also want better aesthetics and presentation. Thanks to this trend, galvanising has been converted to colour coated."

He admits that the humidity is also creating the path for cool roofs and, interestingly, Essar Steel has also developed anti-graffiti paint (he cites the country's habit of being in a perennial election mode) that will disallow people from discolouring walls.

Very often, the trend is also to consider the Solar Reflective Index of the metal roof which has to be in the range of 78 and above, says Kaushal. That, he adds, is a major element when one is talking about green building.



Monier Roofing's technical centres are working on developing tiles with interesting features.

### COVER IT UP

India's clement weather has demanded that its citizens consider a roof that does not leak. While that is the main job of a roof, there is also a growing trend to consider long sheets, which can cover the entire roof with a single sheet without any gaps.

Kaushal says, "Whether it's an industrial building even an automobile manufacturing plant, customer prefers to cover with Standing Seam, which performs better and has a bet-ter minimum maintenance.

A leak-proof home can only be done with the help of waterproofing. Kalpesh Chitroda, director, Maris Polymers, says, "The most commonly used chemical waterproof-ing systems are bitumen, acrylic, polyester, polyurea and polyurethane. However, over the last 20 years, one has observed a change in technology in waterproofing in India. For eg., 40 years ago bitumen waterproofing was popular and 20 years ago we saw the rise of acrylic waterproofing systems. Presently polyurethane is popular as a water-proofing technology."

The life span of a waterproofing system is highly depen-dent on the chemicals used for waterproofing. Bitumen was not UV stable and failed when used in exposed condi-tions. Acrylics re-emulsify failed due to standing water. Polyurethanes are more promising chemicals as they are UV stable and can withstand standing water. Also polyure-thane systems are tested by EOTA and have a certified life of 25 years.

Dr Sanjay Bahadur, global CEO, construction chemi-cal division, Pidilite Industries, says, "Currently, there is an urgency to encourage accurate material usage, right



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dosage and the correct application to ensure that healthy structures are created. Dr Fixit LEC and Dr Fixit Blue Seal are revolutionary products which provide the end consumer with a complete 360° solution. The Dr Fixit LEC & Dr Fixit Blue Seal offers five times faster completion on 1/10TH manpower and 2 ½ times insulation with three times more life expectancy for structures."

Considering that the market for roofing and waterproofing has indeed been growing, more firms are also com-ing up with the concept of roof simulation software that help the architect/designer to visualise the roof before the actual roof is done. Technical teams are able to provide the designer the required guidance in designing the correct roofing structure. Besides that, Indian firms working with developers and contractors also provide technical ground support in terms of training to ensure the products are fixed in the right manner. ■