

Building and Construction

China's construction industry is in the spotlight, as plastics has a pivotal role to play in construction innovations that range from the modernised building structures to burgeoning developments in the wind energy infrastructure sector. APN reports

As many observers have already noted, a substantial portion of China's massive RMB4 trillion (US\$580 billion) stimulus package can be expected to be spent on housing and infrastructure improvements, which includes supporting the rebuilding efforts in earthquake-hit areas such as Sichuan.

This spells good news for the building and construction industry, and great hopes are held that the Chinese government's investment in infrastructure would be carried into the polymer-based building materials sector.

Even the Chinaplas show organisers have gotten into the act, and this year's edition of the long-running exhibition will feature a Plastic Building Materials pavilion to showcase the extensive use of plastics in construction-related applications, including plastic pipes and profiles, foaming materials, and wood plastic composites.

Wind powered

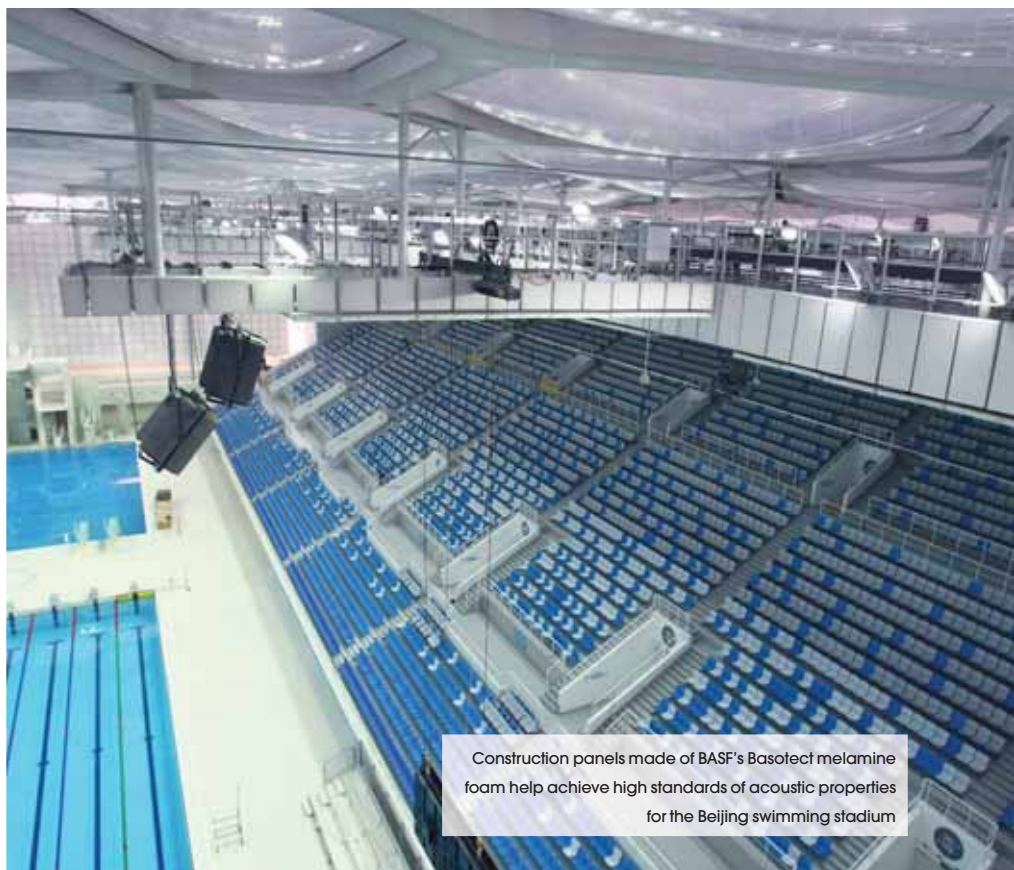
Resource sustainability and energy efficiency have become chief concerns around the world.

As such, the global wind energy market, often signified by the iconic three-bladed wind turbine, has been booming in recent times.

Installed wind power capacity in China has been roughly doubling over the last few years – the Chinese Wind Energy Association (CWEA) has also estimated that the newly installed capacity for the wind energy market in China is expected to double in 2009 – and the country is now well poised to overtake countries like Germany and Spain to eventually become the leader in total wind power capacity by 2010.

Epoxy-based systems have become a material of choice for wind blades, offering high performance and achieving the same strength with less weight than, say, polyester-based composites.

To capitalise on this stream of growth, Dow Epoxy Systems (DES), the new specialty



Construction panels made of BASF's Basotect melamine foam help achieve high standards of acoustic properties for the Beijing swimming stadium

Building momentum

epoxy systems business unit of US-based Dow Chemical (www.dowepoxysystems.com), has established a manufacturing facility in Wuhan, China, to support growth in the Asia Pacific region.

DES will also start blends production in the Dow Epoxy site in Gumi, South Korea. South Korea has set ambitious growth for the establishment of renewable energies, with the government reportedly having placed orders to build ten new indigenously-made wind power generators to help reduce the country's reliance on imports in the renewable energy sector.

Customised solutions provided in the DES facilities in China and South Korea will drive the growth momentum in the two key target application markets of wind energy and infrastructure – the research and development capabilities already established in Shanghai, China, is also key to Dow Epoxy's growth strategy.

Sound protection

The much celebrated, futuristic design of the Beijing swimming stadium was one of the architectural highlights of last year's Olympics Games held in China.

The 17,000-seat National Aquatics Center, dubbed the "Water Cube" because of its shape, was fitted with a ceiling structure clad with large Basotect melamine foam panels developed by BASF (www.basf.com) that provide sound protection and fulfill a number of other requirements. The lightweight panels blend in with the architectural design, meet environmental regulations, are flame retardant and are able to withstand high humidity levels.

In terms of its acoustic properties, the BASF melamine foam has an open-cell and fine foam structure that gives rise to good sound absorption capabilities in the medium and high frequency ranges. Entech Shanghai processed the lightweight Basotect panels.

The installation is made of Basotect panels of different sizes, some of which span more than 2m. Securing these panels over such a distance called for their reinforcement with tubes, which in turn results in a novel construction that is sufficiently stiff and can expand in response to temperature fluctuations. The entire installation was tested for its load-bearing capacity, sound protection and fire safety in a series of examinations.