



## **i.light®**, “transparent” cement for the Italian Pavilion at Expo 2010 in Shanghai



Italcementi developed an innovative “transparent” cement for the **Italian Pavilion at Expo 2010 in Shanghai**, designed by architect Giampaolo Imbrighi.

The product contributed to the success of the Pavilion, which attracted more than 7.3 million visitors and was particularly appreciated by the Chinese public, to the extent that although the

Expo rules require that all of the pavilions must be demolished at the end of the event, the building has remained in place because of its valuable architectural features.

**i.light®** bonds special resins into a newly conceived cement mix which permits the manufacture of solid, insulated yet light-transmitting construction panels. Italcementi researchers have identified the right formula for a dry ready-mixed product that allows including these plastic resins in cement, which is naturally opaque, without creating cracks or jeopardizing the structure.

3,774 transparent **i.light®** panels have been used to cover a total surface area of 1,887 m<sup>2</sup> (189 tons of “transparent” cement), approximately 40% of the building’s envelope, thus creating a sequence of lights and shadows in constant evolution during the day. Transparency is most dramatic in the dark, when the light from inside the building is visible outside, while during the day it allows soft, warm daylight to pervade the interior of the building.

Italcementi researchers developed and fine-tuned an innovative material that does not contain optic fibers: light is transmitted thanks to special colored resins which Italcementi researchers have found to be particularly suitable for this type of application. This solution, which does not require the use of costly optic fibers, is particularly suitable for industrial

production and lets more light into the building as the resins exploit much wider angles of light incidence than optical fibres.

“Transparent” cement panels are architectural components which serve a variety of functions that may be integrated, including internal lighting based on techniques for shading and spreading light inside buildings.