

Global Light-Transmitting Concrete Market — Global Industry Analysis, Size, Share, Growth, Trends and Forecast

<https://marketpublishers.com/r/G027170142FEN.html>

Date: January 2016

Pages: 110

Price: US\$ 4,000.00 (Single User License)

ID: G027170142FEN

Abstracts

Concrete is conventionally dull. However, new advancements in composite materials have created eye-catching spectacles that are also green. One such innovative composite is Litracon's light transmitting concrete; it takes one of our most reliable building materials and embeds thousands of optical fibers within it, creating the effect of translucent concrete. The ability to introduce subtle natural lighting while maintaining privacy provides large environmental benefits in addition to its aesthetic ones, including reducing the cost of heating and lighting.

Light-Transmitting concrete is also a great insulating material that protects against outdoor extreme temperatures while also letting in daylight. This makes it an excellent compromise for buildings in harsh climates, where it can shut out heat or cold without shutting the building off from daylight.

HOW IT WORKS

LiTraCon consists of 96% concrete and only 4% optical glass fibers. Despite the seemingly low content of glass fibers in the final pre-fabricated concrete block, light is led between the two sides of a given block. Due to the parallel position of the glass fibers, light on the brighter side of the wall appears unchanged on the darker side. The most interesting form of this phenomenon is probably the visible display of shadows on the other side of the wall, meanwhile the color of the light remains the same. These elements can be used indoors and outdoors as decorative building elements such as walls, partition walls, pavements, floors, bar-top covers and possibilities are endless.

IN USE

Light-Transmitting concrete is not currently widely produced. There are only a select few companies, and the process is somewhat low-tech and slow. It can only be produced as pre-cast or prefabricated blocks and panels; it cannot be poured on site like traditional concrete. The blocks come in a range of sizes, the maximum for glass fiber being 1200 x 400 mm (47.2 x 15.7 inches), and the thickness can range from 25-500mm (1-20 inches). This allows translucent concrete to be used for a variety of purposes, from a thin veneer to a structural system. So far Light-Transmitting concrete has been used to make light installations, signs, and fixed-in-place furniture such as benches, desks, and counters.

FUTURE

Although Light-Transmitting concrete has been used primarily as an interior decoration, its creators have visions of cities that glow from within, and buildings whose windows need not be flat, rectangular panes, but can be arbitrary regions of transparency within flowing, curving walls. It can at the same time be building material and light source, can separate and connect, can be wall or floor, ambient lighting or eye-catcher. Light-Transmitting concrete is also a great insulating material that protects against outdoor extreme temperatures while also letting in daylight. This makes it an excellent compromise for buildings in harsh climates, where it can shut out heat or cold without shutting the building off from daylight. It can be used to illuminate underground buildings and structures, such as subway stations. Light-Transmitting concrete could provide safety applications in the future such as speed bumps that could be lit from below to make them more visible at night, or to light indoor fire escapes in case of a power failure. It even has the potential to be sustainable; the aggregate can be replaced with crushed recycled glass. It could be used almost anywhere glass or traditional concrete are used. Light-Transmitting concrete combines the fluid potential of concrete with glass' ability to admit light, and it also retains privacy and can be used as structural support. The possibilities for translucent concrete are innumerable; the more it is used, the more new uses will be discovered. In the next few years, as engineers further explore this exciting new material, it is sure to be employed in a variety of interesting ways that will change the opacity of architecture as we know it.

Drivers

Compared to traditional concrete solutions Litracon offers: 1) Less energy consumption. 2) Illuminated Pavements. 3) Homogeneous in structure. 4) Finishing Surface. 5) Routine maintenance not required.

What the report offers:

The study, besides estimating the light transmitting concrete market potential between 2019 and 2025, analyzes on who can be the market leaders and what partnerships would help capture the market share.

A SWOT analysis is carried out on the potential entrants' existing capabilities and investing culture, that would help them create an industry as a whole and be the front runners of it.

The study in detail deals with the product life cycle, comparing it to the relevant products from across industries that have already been commercialized. It approximates the time for innovation, in order for the industry to maintain a stable growth over a sustained period.

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