

Beyond Blocks and Bricks

Number Twenty

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Translucent Concrete Blocks

By incorporating optical fibers into Portland cement concrete, the concrete becomes translucent. Because the concrete is manufactured in blocks, the concrete also becomes masonry.

Why not use glass blocks? Because glass blocks are non-loadbearing and can only be used in veneers. Litracon translucent concrete blocks are loadbearing and have a compressive strength of 7,250 psi.

Litracon blocks can be very big; maximum face dimensions are 47 inches x 16 inches and thicknesses range from 1" to 20". They are also very heavy. They are 100% solid and an 8 x 8 x 16 weighs about 100 pounds!

Why 100% solid? Think about looking at a fish in a stream. Because air and water transmit light in different ways, the fish is closer to us than the image suggests. Light passing through hollow Litracon blocks would experience four changes in material: air to block, block to the air in the core, the air in the core to block, and block to air. Likely, this would distort the image.

Still, seeing the shadows of the vertical reinforcement would make inspection easier!

From Litracon's website at <http://www.litracon.hu/>

Litracon™ presents the phenomenon of light transmitting concrete in the form of a widely applicable new building material.



Litracon™ is a combination of optical fibers and fine concrete. It can be produced as prefabricated building blocks and panels. Due to the small size of the fibers, they blend into concrete becoming a component of the material like small pieces of aggregate. In this manner, the result is not only two materials - glass in concrete - mixed, but a third, new material, which is homogeneous in its inner structure and on its main surfaces as well.



The glass fibers lead light by points between the two sides of the blocks. Because of their parallel position, the light-information on the brighter side of such a wall appears unchanged on the darker side. The most interesting form of this phenomenon is probably the sharp display of shadows on the opposing side of the wall. Moreover, the color of the light also remains the same.

Thousands of optical glass fibers form a matrix and run parallel to each other between the two main surfaces of each block. The proportion of the fibers is very small (4%) compared to the total volume of the blocks. Moreover, these fibers mingle in the concrete because of their insignificant size, and they become a structural component as a kind of modest aggregate. Therefore, the surface of the blocks remains homogeneous concrete. In theory, a wall structure built from light-transmitting concrete can be several meters thick (6 1/2 feet), because the fibers work without almost any loss in light up until 20 meters (65 feet). Load-bearing structures can be also built of these blocks, since glass fibers do not have a negative effect on the well-known high compressive strength value of concrete. The blocks can be produced in various sizes and with embedded heat-isolation.



Litracon™ was invented by Hungarian architect RON LOSONCZI in 2001. Litracon™ is protected by Swedish patent and other patents are also pending in other jurist regions.

Inventor and patent holder RON LOSONCZI founded his own company, Litracon Bt., in spring 2004. The company is located in the Hungarian town Csongrád, 160km away from the Hungarian capital, Budapest.