

Technical Data Sheet

i.light SHANGHAI

Description

i.light is a precast concrete panel that can transmit light. Formed by bonding special resins in an innovative cementitious matrix, i.light not only lets natural and artificial light in, but it also allows the human eye to reconstruct images of objects placed behind the panel, with no change in colour and creating an amazing transparent effect.

Applications

i.light is a most versatile material that can be designed in custom size and colors vis-à-vis the cement-based component and the transparent polymer-based inserts.⁽¹⁾

i.light can be used for non-load bearing elements such as roof coverings, decorative elements, walls, partitions on balconies & terraces, stairways and interior design items. i.light panels are installed by fastening them to adequate supporting substructures.

⁽¹⁾ Variations may require technical assessment by the parties involved

Weathering resistance

3,774 i.light panels were used for cladding about 40% of the surface of the Italian Pavilion at Shanghai's World Expo in 2010. Almost two years have elapsed since the completion of the building and no sign of deterioration has been detected.

Product Specification - Shanghai Panel

Product Specification – Shanghai Panel	
Elastic limit	1,92 MPa *
Peak stress	7,70 MPa *
Post-peak response	Strain gardening – Plastic behaviour **

* CTG test method under displacement control

** No loose / detached material was observed during the post-peak phase

Dimensional & Optical Properties	
Thickness	50 mm
Length	1000 mm
Width	500 mm
Transparency	18-20% with respect to the overall surface area



Properties of the two main components Cementitious matrix

Cement	52,5 R Type I To ensure rapid gardening and high strength
Sand/Gravel	Of the silico-calcareous type - to provide a compact granular skeleton
Stainless steel fibres	To impart high toughness (ductility)
Polypropylene fibres	To minimize the risk of cracking at early ages
Tailored mix of admixtures	- to improve rheology in the fresh state - to attenuate slow deformation (creep) phenomena

Compressive strength	60 MPa	EN 12390-3
Flexural strength	8 MPa	EN 12390-5
Elastic Modulus	38-40000 MPa	UNI 9771

Resin inserts

Optical trasmission factor	92%	DIN 5036
Fire classification	Class B2	DIN 4102
UV light resistance	Good	Internal method
Chemical resistance	Good to acids and alkalis	Internal method
Tensile strength	65 Mpa	ISO 527-1/-2
Tensile modulus of elasticity	3200 MPa	ISO 527-1/-2
Elongation at break	3%	ISO 527-1/-2

Technical Specification

i.light transparent panel, Shanghai type, fair-face finished on one side. Grey precast concrete panel of the i.light type manufactured by Italcementi. Maximum transparent surface is equal to 20% and is obtained using special polymers with a light transmission value greater than 90%. Inserts are of the trough-type to give the panel its transparent effect. The fair-faced finished side of the panel is mirror polished; edges are beveled and the hidden side is ground to allow passage of diffuse light. If mirror polished on both sides, the panel allows clear passage of light, shapes and colours. Panel size: 1000 mm x 500 mm x 50 mm.

Product for professional use only . The use of the product shall be based on investigations and evaluations made by the final user.

Italcementi S.p.A.

Via G. Camozzi 124
24121 Bergamo - Italy
Tel +39 035 396 111
www.italcementigroup.com
www.i-nova.net
info-i.light@itcgr.net

Last update August 2013

