



ZENON

PANEL

CONSTRUCTION SYSTEM

Disaster-resistant building system for low-cost, permanent and fast constructible houses



www.zenonpanel.com

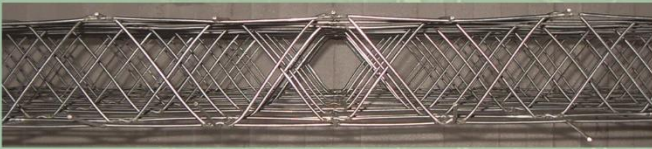




CONSTRUCTION SYSTEM

Single & double storey structures

Get your home in a short time with small budgets with the Zenon Panel system, which inspires aesthetic, functional and comfortable structures!

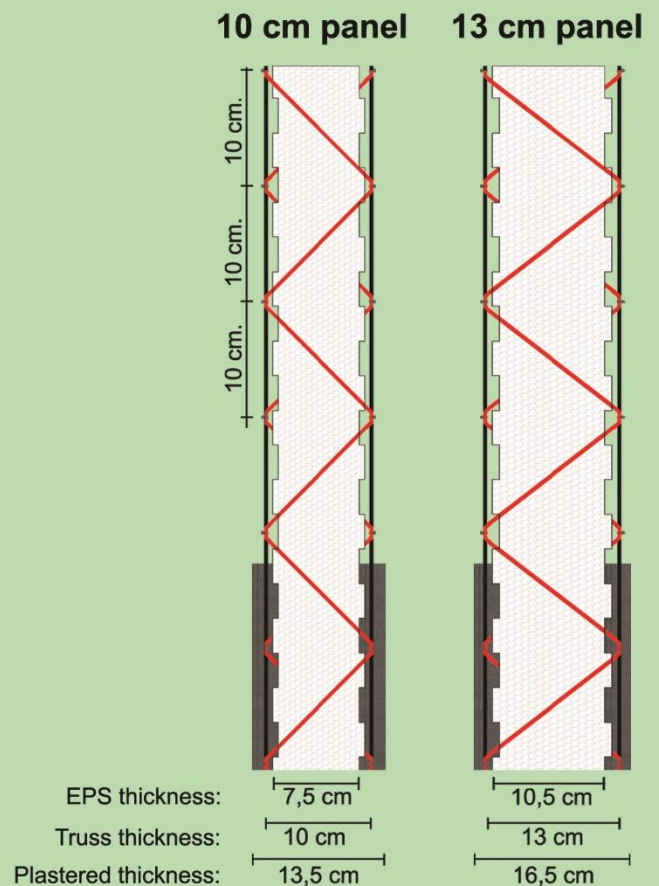
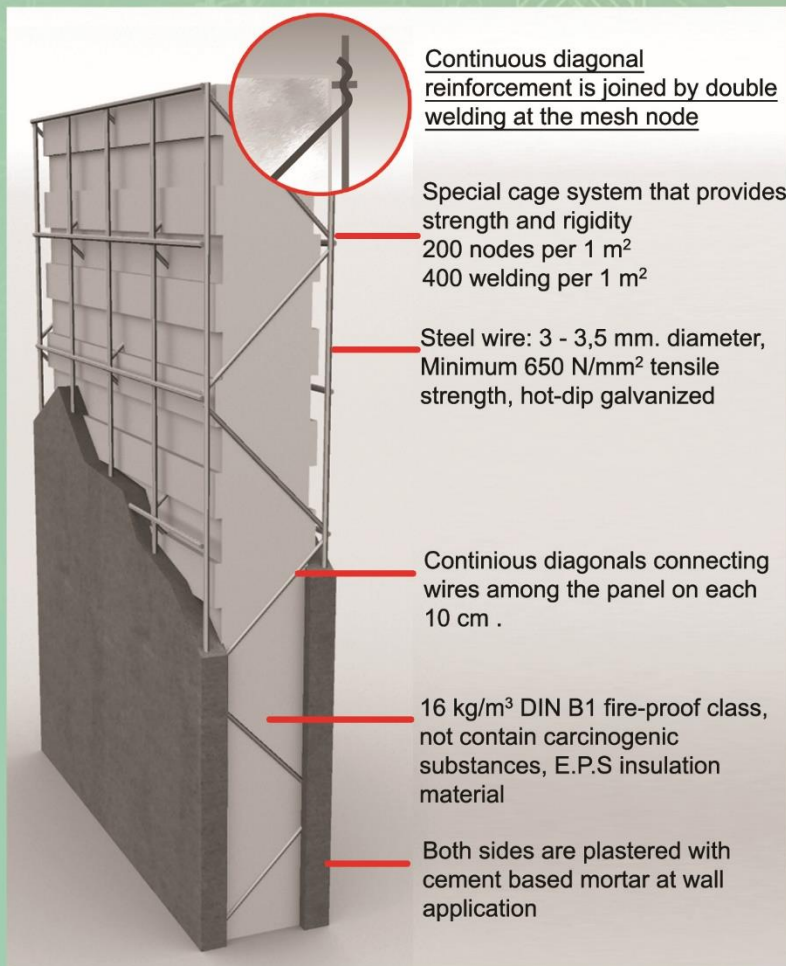


Thanks to its specially designed diagonal truss system, Zenon Panel reduces rebar and concrete consumption at high rates exceeding 50%, therefore it is low cost.

Continuous bidirectional diagonal reinforcement system on each 10 cm.

Bi-directional diagonal reinforcements are continuous and connected to the mesh nodes.

The Zenon Panel system performs in three dimensions, shows the behavior of a full composite structural element.



We are serving you with the experience from thousands of projects we have done in more than 20 years.

2.500
projects

21
dealer & service points

15
countries used

2.750.000
m² application

www.zenonpanel.com



Panels are cut according to the project dimensions. All panels are connected to each other with meshes.



Both wall faces are being shotcreted with cement based mortar. Concrete is poured on the slab.



Zenon Panel system performs a monolithic structure behaviour Performs excellent earthquake resistance.





Lightweight, fast to build, insulated, economic system



Minimizes formwork, rebar and labor costs.

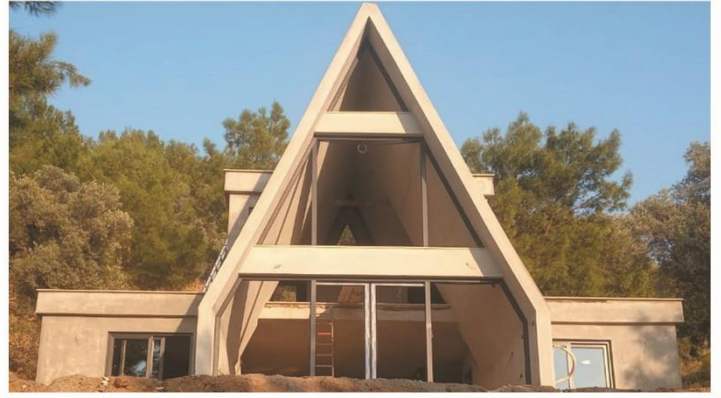


All kinds of architectural designs are easily applied, installation time is very short.





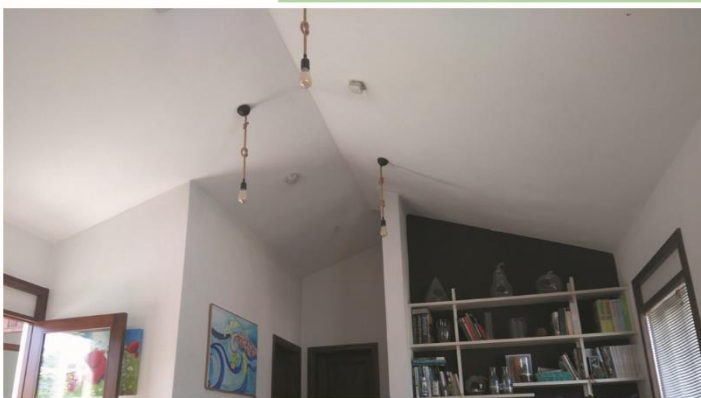
After the concrete is poured, any kind of waterproofing material can be applied.

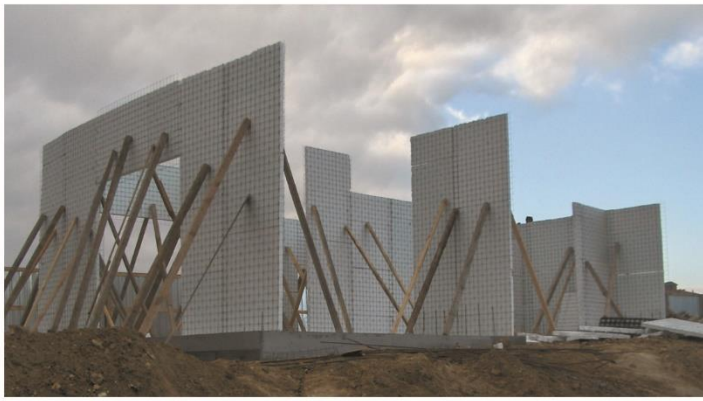


At least 30% cheaper than alternative permanent building systems.



Resistant to hard climate conditions - At least 60 years Static life.





There is no need to make additional thermal insulation over Zenon Panel Structure.



Zenon Panel Structures are at least 60% lighter than reinforced concrete structures.

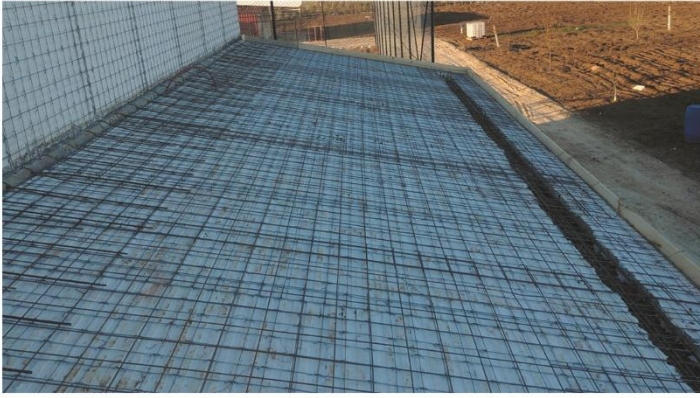


In the 2023 Turkiye earthquakes (7,6 richter), Zenon Panel buildings are not damaged.





Zenon Panel Structures' static behaviour is monolithic, all walls transfer the load linearly to the ground.

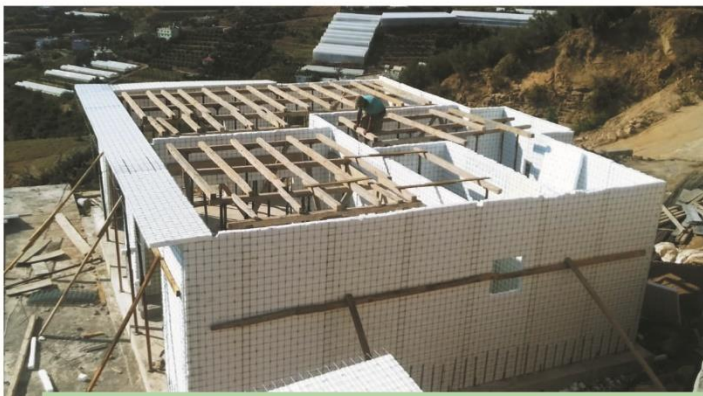


Zenon panel provides comfort of reinforced concrete structures, lightness of steel structures together.



Construction time is at least half compared to alternative building systems.





Steel rebar is tied and concrete is poured. Sections are determined in static calculations.



It is easy to build your dream structures with Zenon Panel.



Save at least 50% in consumption of steel rebar and concrete, compared to R.C structures.





Permanent thermal insulated building system resistant to hard climate conditions



At least 39 decibel sound insulation - 120 minutes fire resistance





Dimensions of Zenon Panel

Net Width: 121cm

Total width with overlap meshes: 142 cm.

Length: Free length production according to order

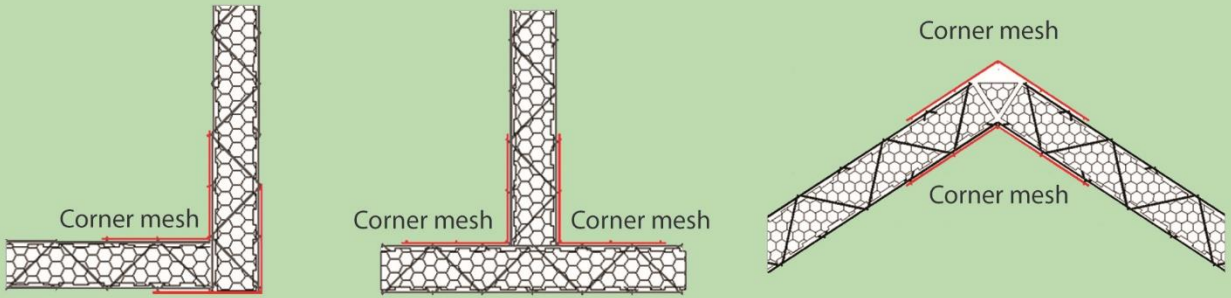
Stoklama: Üst üste 30 panel stoklanabilir

Stocking: 30 panels can be stocked on top of each other

■ Junction of panels with overlap mesh and flat mesh



■ Junction of panels with corner mesh



■ Shorcrete plastering with cement based mortar

Zenon panel can be plastered by hand or by machine. At least 3 cm thick, 300 kg/m³ cement based mortar should be applied on each side of the panel. The compressive strength of the mortar must be at least 10 Mpa.



■ Pouring concrete

Before the concrete pouring, the required additional steel rebar reinforcement is tied over the slab panels. Then ready-mixed concrete coming from the plant is poured. The amount of reinforcement, thickness and strength of the concrete are determined by static calculations. Concrete that is including max 1cm diameter gravel should be preferred.



Research & Certificates

1998 den bugüne akredite laboratuvarlarda EOTA ve ICC normları çerçevesinde birçok test yapıldı. Zenon Panel Türkiye ve birçok ülkede yapı sistemi olarak kullanılabilir.

Thermal insulation

23C-Thermal conductivity values under 80% relative humidity conditions

10 cm panel: $U_w < 0,65 \text{ W/m}^2\cdot\text{K}$ - $U_c < 0,65 \text{ W/m}^2\cdot\text{K}$

13 cm panel: $U_w < 0,48 \text{ W/m}^2\cdot\text{K}$ - $U_c < 0,49 \text{ W/m}^2\cdot\text{K}$

Acoustic insulation

Acoustic insulation values according to EN ISO 10140-2:2010 standards.

10 cm panel = 38,7(-2,7 ; -4,5) dB

13 cm panel > 38,7(-2,7 ; -4,5) dB

Fire resistance

Zenon Panel can be used on interior and exterior walls and floors of buildings in accordance with the regulation on fire protection of buildings.

Fire resistance class = E120 - EI60 (TS EN 13501-2)

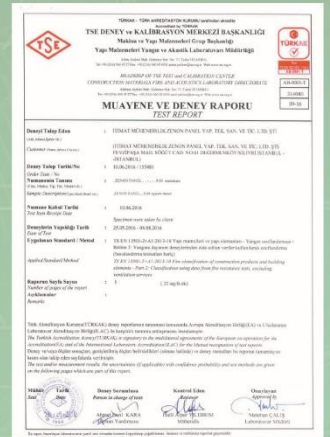
Fire resistance class under live load = 120 dk (NFPA 251)

Impact resistance

Impact resistance class: E5 (EN 14019)

Resistance to wind loads

According to EN 12179 standards, the Zenon Panel wall, which is placed in a 4.5m x 6m frame in wind turbines, has shown excellent performance even at a wind load of 200km/h.



2023 Türkiye Earthquake Performance - Key features

The buildings in Türkiye 2023 Earthquake zone, did not even show a crack in the earthquake, and Zenon Panel successfully passed the earthquake test again.

Ductile and lightweight building mass: Low earthquake load due to low ultimate load.

Monolithic structure : All wall and slab elements of Zenon Panel structure, perform integrated behavior with the steel truss working in compression and tension.

Zenon Panel provides structural rigidity.

Superior to other masonry units: High compressive strength - High shear strength - High flexural strength

Easy to process panel system: Short fabrication time thanks to fast assembly

High Thermal Insulation: Environmentally friendly system with energy-saving EPS insulation layer.

Compatible with codes: Static calculations are made with internationally recognized software in accordance with international code rules.

All walls are load-bearing in Zenon Panel Building. It transfers loads linearly to the foundation. Since all elements are connected to each other with reinforcement, Zenon Panel structure shows monolithic behavior like tunnel formwork.



Excellent performance:

Span: 4 meters Concrete: 30 Mpa - 9 cm thickness

Steel reinforcement: 2kg/m² additional rebar

Load: 5,2 tons total - 1,3 ton/m²

Conclusion: Successfull - High performance

39 tons linear live load!

Span: 6 meters Concrete: 30 Mpa - 10 cm thickness

Steel reinforcement: 5 kg/m² additional rebar

Load: 15 tons machine load - 39 tons linear compactor load

Conclusion: Successfull - High performance



Zenon Panel serves with its fully automated high production capacity production facility located in Silivri İstanbul, widespread dealer network and professional technical staff.



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