



Eco-friendly thermal panel based on secondary raw materials (geopolymer binder and recycled aggregates); it consists of three different layers (two external lightweight concrete layers and the inner one in expanded polystyrene); it can be used for non-bearing walls and when thermal insulation is required.

| Name of product | GEO panel_R-34 | | |
|--|--|--|--|
| Function of product | Lightweight building panel | | |
| Form | Panel | | |
| Raw Material | Concrete layer: Pulverised Fuel Ash (PFA) - binder; mixed plastic (Remix) and sand aggregates; Insulating layer (inner layer): expanded polystyrene (EPS) | | |
| Properties | | | |
| Property | Unit | Value | Test methods/standardisation |
| Chemical/physical properties | | | |
| Bulk density* | kg/m ³ | 1440 | - |
| Composition of materials | PFA: SiO ₂ , Al ₂ O ₃ , CaO | | |
| | Remix: mixed plastic based on PE, PP scraps; sand: SiO ₂ | | |
| Structures and construction | | | |
| Dimensions of product | m | different sizes, with or without openings (window, door) | |
| Mechanical properties | | | |
| Compressive strength* | N/mm ² | 6.8 | EN 12390-3 |
| Flexural strength* | N/mm ² | 1.3 | EN 12390-5 |
| Tensile strength | N/mm ² | | |
| Thermal properties | | | |
| Thermal conductivity* | W/(m·K) | 0.344 | EN 12664 |
| Specific heat capacity* | J/(g·K) | 1,275 | - |
| Thermal storage capacity* | kWh/m ³ | 7,577 | - |
| Thermal transmittance** | W/m ² K | 0.55±0.02 | EN ISO 8990 |
| Hygrothermal properties | | | |
| Water vapour diffusion resistance factor | | | |
| Moisture buffer value | kg/(m ² ·%RH) | | |
| Water vapour permeability | kg/(m·s·Pa) | | |
| Acoustic properties | | | |
| Sound absorption coefficient | % | | |
| Sound Reduction Index (Rw)** | dB | 35 | |
| Sound insulation (D2m,nT,Atr)** | dB | 33.05 | EN ISO 140-5 |
| Fire Safety | | | |
| Reaction to fire | | | |
| Resistance to fire | Minutes | | |
| Fire behaviour | - | EI240 | UNI EN 1363-1, UNI EN 1364-2, UNI EN 13501-2 |
| Environmental properties | | | |
| Embodied energy (% renewable)* | MJ/m ³ | 3492.3 | ISO 14000, ISO 14040, ISO 14044 |
| GHG emissions* | kg CO ₂ eq/m ³ | 140.8 | |
| TVOC (SVOC) | µg/m ³ | | |
| Radon | Bq/m ³ | | |
| Photocatalytic capacity | | | |

* property referred to the concrete

** including mortar and paint