ENERDRAPE

UNTAPPED UNDERGROUND ENERGY

Datasheet





ENERDRAPE



NON-INVASIVE HEAT EXCHANGER PANELS FOR UNDERGROUND PARKING, TUNNELS AND BASEMENTS

150W/m²	50 years	24/7	0
Characteristic thermal power	Estimated	Energy availability	Drilling or excavation required

Building heating and cooling accounts for nearly 50% of global energy consumption and 40% of CO_2 emissions.

Enerdrape transforms existing underground spaces — parking lots, tunnels, basements — into renewable energy sources, with zero excavation required.

By using wall-mounted geothermal panels installed without drilling, Enerdrape captures shallow geothermal heat and residual thermal energy.

Connected to a heat pump, the panels provide buildings with low-carbon heating, cooling, and domestic hot water.

Applications

- Commercial, administrative and residential assets with underground parking
- District heating networks and urban systems
- Pre-heating systems
- Replacement of existing heating systems
- Geothermal heat pumps for heat extraction/injection
- Underground thermal storage
- Cooling

Key Advantages

- 24/7 available energy supply
- Compatible with new and existing buildings
- No drilling or excavation required (non-invasive)
- Fast and easy installation and maintenance
- Significant CO_2 emission reduction
- Plug & play solution with heat pumps
- Recycled and recyclable materials
- Independent of outdoor climate conditions

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Characteristic thermal power of 150 W/m²*

For a constant flow rate and given heat transfer fluid, thermal power depends on the temperature difference between the fluid inlet and the average wall temperature.

Fast operational response

Enerdrape® reaches stable thermal behaviour within 5 hours of operation, responding rapidly to changes in operating conditions.

Stable efficiency over time

The coefficient of performance of the Enerdrape® system remains consistently stable over time.

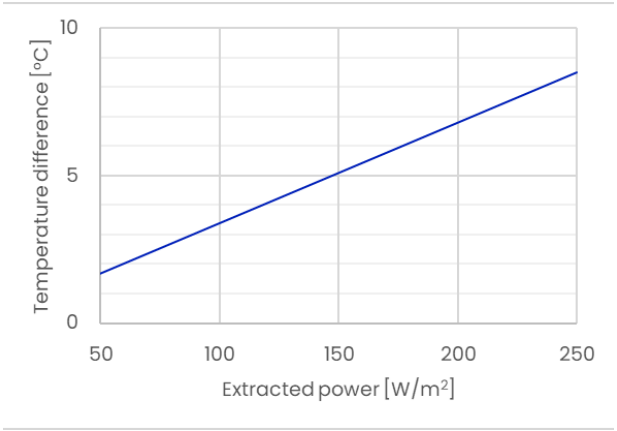
Systeam output is minimally affected by ambient temperature

The air temperature in underground structures hosting the Enerdrape® system has a limited influence on performance, unless significant airflow is present.

Sustainable exploitation of geothermal resources:

The Enerdrape® system is designed to ensure the sustainable use of geothermal resources by preventing depletion and maintaining long-term performance (>50 years).

**Performance value for typical underground conditions in Lausanne, calculated over a 50-year operating period. This information is indicative only and carries no liability or legal value.*



Difference de temperature = T_{sol} - T_{fluide}





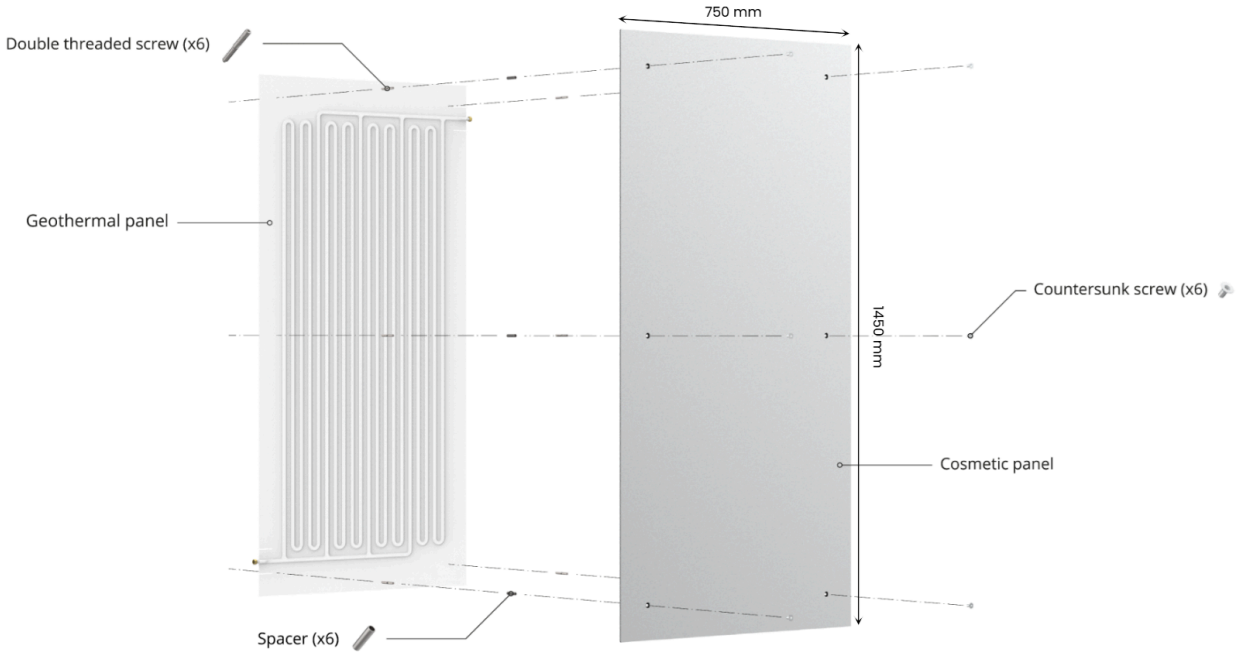
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TECHNICAL SPECIFICATIONS

Enerdrape® systems are composed of :

- Multiple interconnected geothermal heat exchanger panels.
- Protective panels offering optimal architectural integration of the heat exchanger panels. This element can be customised for branding, advertisement etc (more details on demand).
- Universal plug and play hydraulic connections that link the heat exchanger panels and can be positioned in horizontal and vertical positions.

COMPONENT			
	Hydraulic connectors	QS-12	2 pcs
	Inter-connecting pipes	10 mm	1.6 m
	Anchor dowel	M6x50	6 pcs
	Cosmetic panel screw	M6X16	6 pcs
	Cosmetic panel cylinder spacer	M6X20	6 pcs



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Product Identification

Prodcut name	Enerdrape® Geothermal Panel
Description	The Enerdrape® wall-mounted geothermal panel is designed for installation on underground walls. It consists of three components: a geothermal panel, a protective casing, and a circuit containing a heat transfer fluid. When coupled with a heat pump (water-to-water, brine-to-water, or water-to-air), these panels enable building heating, cooling, and domestic hot water production.

Technical specifications – geothermal panel

Material	Mainly aluminium
Wall thickness	3.1 mm
Panel dimensions	1400 x 700 mm
Weight	3.4 kg
Fluid Filling	2 kg
Colour	Aluminium

Technical specifications – protective panel

Material	Aluminium composite sandwich panel
Wall thickness	4 mm
Panel dimensions	1450 x 750 mm
Weight	5.2 kg
Colour	White (customisable)

Performances

Thermal exchange power	150 W/m^2
Operating temperature range	-2 à -45°C
Compatible heat transfer fluid	Water, glycol water, ethanol
Max. admissible pressure	10 bar
Estimated lifetime	40 years
CO_2 impact	121 kgCO_2-eq / geothermal and protective panel – life cycle stage (A1–C1)

Usage

Installation	Universal hydraulic "quick couplings" enabling modular assembly in horizontal and vertical positions
Possible installation sites	Underground parking, basement, tunnel Applicable to new and existing buildings
Applications	Heating and cooling, domestic hot water (DHW), district heating systems and other thermal networks Preheating systems, underground thermal energy storage systems

Standards & Certifications

Certifications	*Mark CE* CE	PEP ecopassport® available	The protective panel is also available in a fire-retardant version with B1 certification

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