Thexpan®

VS TRADITIONAL SANDWICH PANEL

solcraft®
even better!

Thexpan®

(Thermal Exchanging Panel)

Was invented in Poland and patented by us. It is a thermodynamic sandwich panel with a **polyurethane insulating core with cladding sheets** and **copper heat exchangers** located under the surface of the sheet.

SANDWICH PANEL is a thermal insulation enclosed on both sides (usually using sheet metal). It is a composite building material used as wall and roof cladding in industrial and commercial buildings.

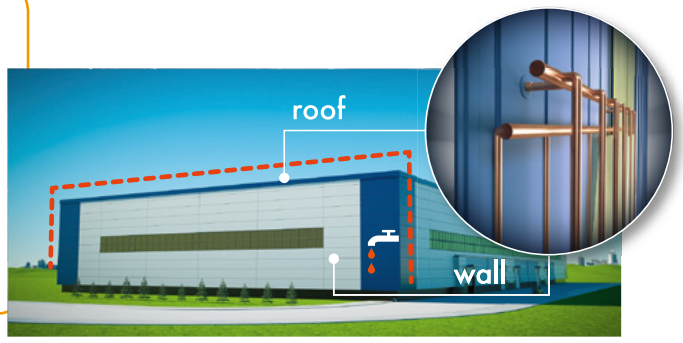
DRAWBACKS? The traditional sandwich panel is only used as a thermal shield or as a rain cover for non-residential buildings. Sometimes it is also used in the construction of specialized facilities such as cooling and freezing chambers etc. It is not used for any other purposes, neither conceptually nor technically. It also has some limitation on the roof's incline (which needs to be minimum 5%, eliminating its use for flat roofs).

Thexpan®
- HEATING
- ABSORPTION
- HEATING-ABSORPTION

Multitude of Thexpan® applications

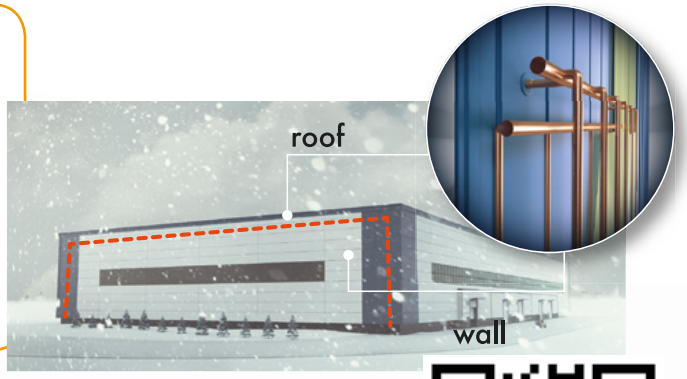
SOLAR ENERGY COLLECTOR
(roof and/or wall)

The outer layer sheet connected to a heat exchanger filled with glycol **absorbs heat** from the sun and uses it for example to heat water. This type of Thexpan® is the **absorption** variant of the sandwich panel.



REVERSE TYPE OF SOLAR ENERGY COLLECTOR

It is the radiant heater of the top sheet roof which **can remove snow or ice.** This way, Thexpan® increases the safety of objects and reduces the „demand" for materials supporting the structure of the object. This type of Thexpan® is the **heating** variant of the sandwich panel.



THE INSPIRATION *for the creation of the Thexpan® panel came from the customers' interest in using* ***solar heat*** *from the upper sheet metal of the roof panels, which would otherwise remain lost forever. This led to the born the idea of thermodynamic Thexpan® sandwich panels for roofs and walls - including flat roofs.*

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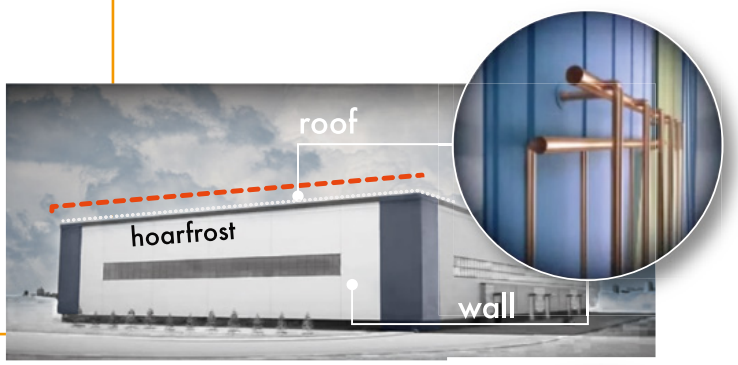
ABSORBER OF HEAT

from the phase transition

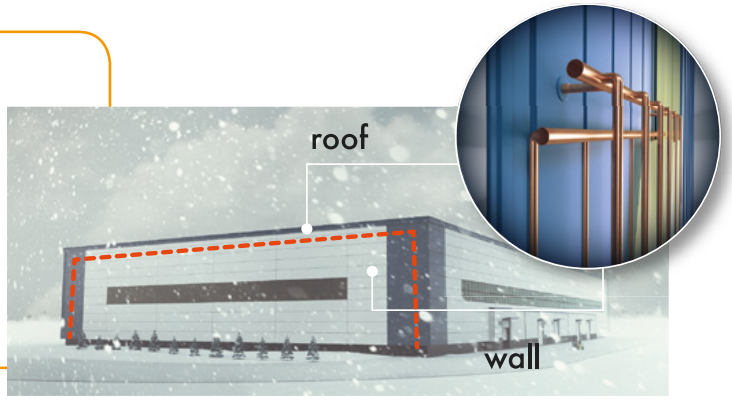
It is a panel used to harness **free energy for the heat pump.** The phase transition of moisture in the air to the frost absorbs heat similar to the heat from groundwater wells. This source – unlike in the case of the wells – **does not lose its efficiency**. Moisture in the air is always present, but this is not necessarily always the case for heat around the wells. Usually after 5 years of exploitation it loses almost all its efficiency. This type of Thexpan® is the **absorption** variant of the sandwich panel.



RADIANT HEATER

(roof and/or wall)

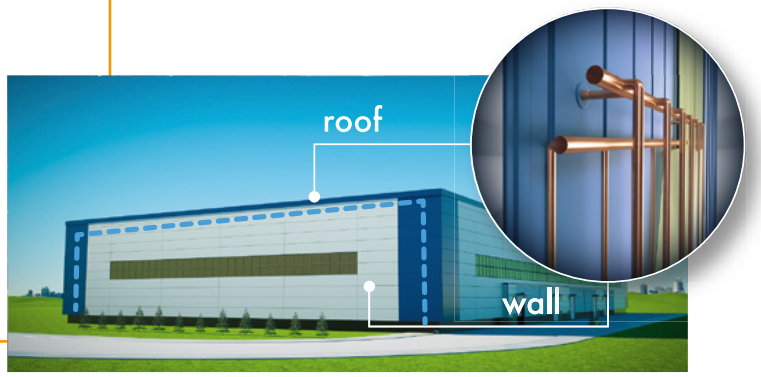
Heats up the interior of buildings with the inner layer of the sheet connected to a **heat exchanger**. This can be done with the high temperature factor from the roof (60-80°C water) creating a water heating radiator. It can also be done through walls with a low temperature factor (15-35°C water). This type of Thexpan® is the **heating** variant of the sandwich panel.



RADIANT COOLER

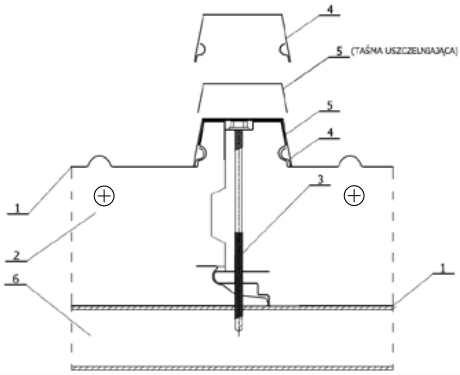
(roof and/or wall)

The low temperature factor (15 – 0°C) acts as an air **cooler** replacing air conditioning systems. This feature may be of particular use in the storing of fruits and vegetables. Maintaining very high humidity is incredibly important here. Thexpan® system, unlike conventional cooling systems, does not allow the moisture to precipitate and only trough misuse could it lead to the dew point being exceeded and water condensation to occur. Even then, there is no air drying unlike is in the case of conventional coolers.



A special feature of Thexpan® panels is the possibility of roof assembly with a slope less than 5%.

None of the other system offers such an opportunity (where there is no leakage). Thexpan®, thanks to our uniquely invented systems for sealing and specially designed locks, allows the connection to be sealed with 100% efficiency using special "clips". In this way, neither switch nor the seal are visible and they don't create a potential source of leakage. This combination also works well in passive buildings since it works as a tight thermal-air barrier.



1 - galvanized & varnished steel sheet;
2 - copper pipes exchanger; 3 - polyurethane foam;
4 - fastener; 5 - roof clips OB-19; 6 - purlin

DID YOU KNOW...

Thexpan® can have even more creative applications. Customers have already used it for example to keep horses warm in the stables or heat up the water in the swimming pools. The heating an absorption variant of Thexpan® is a hugely versatile product. Not only is it a 2-in-1 product, it can be, up to as much as a 6-in-1 product!

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