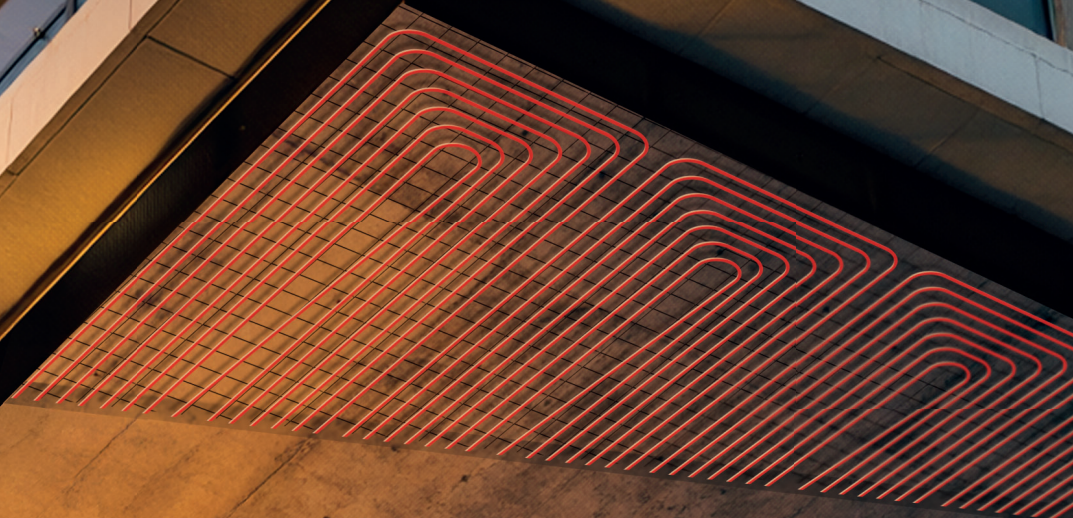




Optimized concrete core activation oBKT

Effective solutions for building heating and cooling



Optimal indoor climate through concrete core activation

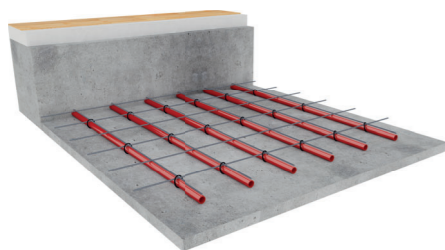
Modern buildings today must meet demanding requirements for energy efficiency, long-term sustainability, and high user comfort. At the same time, we expect the technology to be reliable, low-maintenance, and visually unobtrusive.

What is oBKT (optimized concrete core activation)?

Concrete core activation is a method of controlling a building's temperature through the structure itself. Heat or cooling energy is stored directly in the concrete ceilings, which then gradually release energy into the interior.

The concrete ceiling thus becomes **a large energy battery** that ensures stable temperatures throughout the day without drafts, noise, or visible units. It delivers pure, natural comfort by utilizing the physical properties of the material.

oBKT is a variant of the conventional BKT system, but with a different pipe layout that significantly affects response time, output, and controllability.



-  Without drafts and noise
-  Energy efficient
-  More cost-effective than underfloor heating
-  Complete system solution
-  Service life for the entire lifetime of the building



Where oBKT is best suited

The system is suitable wherever energy efficiency, a stable indoor climate, and the long-term value of the building are priorities:

- Office buildings – maximum comfort for tenants, low operating costs
- Residential projects – a quiet, invisible, and highly efficient solution
- Hotels – guest comfort without unwanted noise
- Educational facilities – stable temperatures for students and teachers
- Healthcare facilities – a quiet, hygienic, and reliable solution
- Public buildings – low operating costs and long service life

How is oBKT different from BKT?

1 Pipe placement

- **BKT:** the pipes are located in **the middle of the concrete slab** → low output, high accumulation, slow response.
- **oBKT:** the pipes are placed **just below the bottom reinforcement**, thus much closer to the ceiling surface, which results in significantly faster heat and cooling transfer.

2 Output and response speed of the oBKT system

- **Response time**
oBKT changes the room temperature significantly faster than BKT or underfloor heating.
- **Output**
Cooling / heating output: **47–60 W/m²**, depending on pipe spacing and the slab structure. (BKT achieves approximately **37–40 W/m²**.)
- **Pipe diameter and spacing**
oBKT uses **FV MULTIPERT-5** pipes with a diameter of **14 mm**. The pipes are laid in a double serpentine pattern for optimal performance.

3 Why is oBKT the "faster variant" of BKT?

The pipes are positioned lower in the structure, which **reduces thermal storage losses** when heating or cooling the concrete. The result is:

- faster response to changing temperature demands,
- higher heating/cooling output,
- better controllability compared with conventional "slow-response" BKT.

The system still retains thermal storage capacity, although to a lesser extent.

4 Output

- **Heating**
Room temperature: 20 °C
Temperature difference: 40/35 °C
Output: 104 W/m²
- **Cooling**
Room temperature: 26 °C
Temperature difference: 15/17 °C
Output: 83 W/m²

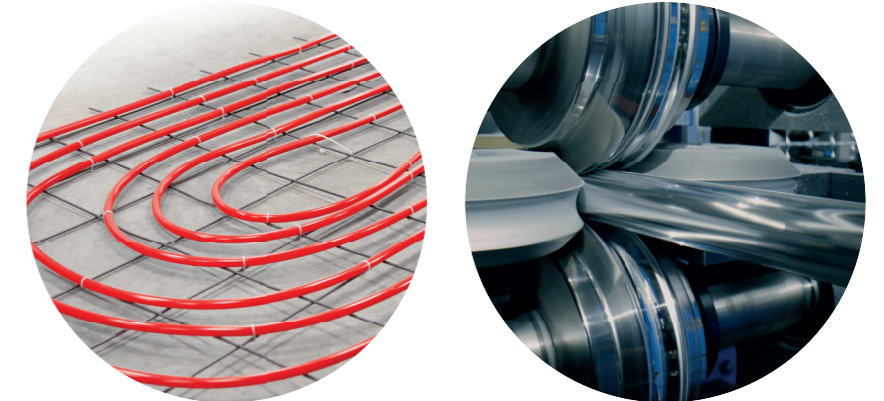
- Optimized version of BKT.
- Maintenance-free system.
- Suitable for both heating and cooling.
- Quick installation thanks to prefabrication.
- Pipes close to the bottom surface of the slab → faster temperature changes.
- Suitable for buildings with variable loads and higher dynamic response requirements.
- Silent, draft-free, and energy efficient (low-temperature system).
- Ideal in combination with heat pumps.



oBKT solution from FV – Plast

System from a single manufacturer

The oBKT system from FV – Plast is a complete solution from a single manufacturer. All components are fully coordinated, ensuring reliable operation, high output, and easy installation.



Proven components

The system uses high-quality materials and components that have been proven through long-term use in heating and cooling applications. The result is a long service life, stable parameters, and minimal maintenance requirements.



Technical documentation and support

The solution includes complete technical documentation for designers and professional technical support during system design and implementation.



How cooperation with FV – Plast works

- **Project consultation**

We begin by understanding the specifics of the project, its scope, and its requirements for comfort, operation, and energy efficiency.

- **Design of a suitable solution**

We will recommend how best to integrate oBKT into the project and what benefits it offers for the investment plan.

- **Documentation for the designer**

We will provide everything needed for the design documentation – from consultations to recommendations for optimal solutions.

- **System supply**

- **Support during installation**

We are available throughout construction and during the coordination of individual phases.

- **Long-term reliability**

We supply components with a long service life and offer stable support even after project completion.

Optimized activation of the concrete core is a technology that significantly changes the way buildings interact with energy. It provides a stable climate with minimal consumption, increases property values, and supports long-term sustainability.

With FV – Plast, you get a flexible, reliable, and cost-effective solution that reflects modern construction trends.

We are ready to be your partner throughout the entire investment process.



Reference project

RANTA Barrandov IV



A comprehensive concrete core activation solution for a modern residential project

The fourth phase of the RANTA Barrandov project is a modern residential development that emphasizes energy efficiency, long-term sustainability, and high living comfort. Optimized concrete core activation (oBKT) was selected here as the key system for heating and cooling selected parts of the building, complemented by underfloor heating and a complete sanitary product range, creating a solution optimized both technically and operationally for current and future user requirements.

- Complete technical and design support, including output calculations.
- Efficient ceiling heating and cooling using optimized concrete core activation (oBKT).
- Combination of oBKT and underfloor heating according to the needs of individual parts of the building.
- Expert supervision and on-site assistance during installation.
- Single technology supplier: FV – Plast & Alca.
- Optimization of capital and operating costs.



Petr Altmann

Production Director,
YIT Stavo s.r.o.

"Our cooperation with FV – Plast on Building D in Phase IV of the RANTA Barrandov project shows that optimized concrete core activation is a very promising solution for modern residential developments. We appreciate the comprehensive technical support, professional approach, and the ability to design a system that promises high user comfort and long-term efficient operation. The actual benefits will only be possible to assess after completion of the installation and the subsequent evaluation of measurements and user feedback."

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Our team of specialists is always on hand to help with design, installation and quote project prices.

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