

COST TU1405



European cooperation In science and technology – COST Action TU1405 “European network for shallow geothermal energy applications in buildings and infrastructures (GABI)”

European Cooperation in Science and Technology (COST) program is the longest operations European initiative aimed at promoting international cooperation between researchers and engineers. It supports participants by funding coordination of existing research programs as well as activities conducted in EU member states and other countries. The main aim of this initiative is to increase efficiency of ongoing national research activities, with additional goals of promoting the inclusiveness of young researchers and countries with less developed research infrastructure.

In the framework of COST TU1405 Action, the representative of ITB participates in the activities of Working Group 4 on thermoactive geostructures design.

Period: March 2015 – March 2019

The main aim of the action is to foster the implementation of innovative use of shallow geothermal energy in civil engineering. The increasing demand for the use of renewable energy lead to the development of utilization of shallow geothermal energy for heating and cooling purposes. The integration of heat exchangers with structural elements, such as pile foundations, diaphragm walls and tunnel linings, is an attractive solution for investment cost reduction. Further development of such technologies is necessary to reach the goal of having sustainable construction industry and self-sufficient buildings.

In recent years, a rapid development of shallow geothermal energy utilization has occurred in Europe. However, the implementation efforts are inhibited by lack of coordination of research in this area. The COST TU1405 Action aims to support research from different regions, foster exchange of knowledge and experience, as well as to provide harmonized rules for design and implementation of shallow geothermal systems.

The COST TU1405 Action has been started due to the initiative of European Large Geotechnical Institutes Platform (ELGIP). Building Research Institute (ITB) together with Polish Geological Institute (PIG-PIB) are representatives of Poland in this network of leading European research institutions.

Currently, there are 22 European countries actively involved in the COST Action. They are represented by more than 50 experts, covering different fields of studies. These include: thermoactive structure design, thermo-hydro-mechanical (THM) modeling, shallow geothermal energy potential, soil thermal parameters investigation, as well as the efficiency of ground heat exchangers. Many of the representatives involved in the COST Action are also members of international organizations (e.g. ELGIP) as well as participate in standardization efforts at the national and international levels (e.g. CEN/TC250/SC7).

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