

# PROFESSIONAL BUILDING ENERGY EFFICIENCY CALCULATION TOOL HEATMOD



UNIVERSITY  
OF LATVIA

Know-how, 7753

## FIELD

Energy efficiency of buildings

## AIM

To facilitate high-quality calculation of building energy consumption and the design of buildings' systems of appropriate capacity.

## DESCRIPTION

A structured online tool for performing heating balance calculations for buildings, zones of buildings or separate rooms, for calculating heating and cooling energy consumption and determining the designable capacities of relevant systems, as well as for drafting an energy certificate in accordance with the applicable legislation of the Republic of Latvia and European standards.

The user interface consists of multiple data entry spreadsheets for providing detailed information on the envelope constructions of a building, its heating, cooling and ventilation systems, and the specifications of these systems. The tool includes several databases for selecting parameters of building materials and construction elements as well as building systems. It also provides different utilities, e.g. for calculating the thermal conductivity of compound constructions, thermal bridges, CO<sub>2</sub> emissions, etc. User-defined databases can also be created for custom data on various materials and structural elements, as well as the storage, retrieval and modification of previous calculations (projects). The results of calculations are summarized in tables and visualised in graphic form. Climate data for different countries are available as well. Results may be output in a format that includes the necessary data for the energy certification of buildings in Latvia, with convenient export of certification data to the Building Information System of Latvia.

The user guide for the tool is provided in English with usage examples. The tool is intended for professional use.

## APPLICABILITY

Determining the energy efficiency and required heating/cooling energy and systems' capacities for buildings in accordance with EN and ISO standards and the regulations of the Cabinet of Ministers of the Republic of Latvia.

## SOLUTION

Composing the heating balance of a building, determining heat losses and calculating reductions in losses, drafting a building energy certificate.

## ADVANTAGES

- The only tool compliant with ISO 52000 series standards and Cabinet of Ministers regulation No. 222 of 2021;
- The tool incorporates the provisions and requirements of Latvian building regulations LBN 002 and 003;
- Unlimited number of building zones and construction elements;
- Database of constructions and material properties is available; the user can create and supplement his own specific database;
- Standardised calculations of thermal conductivity for building constructions and floor on ground;
- Seasonal and monthly calculation methods available;
- Energy certificate data are generated automatically;
- User interface available in Latvian and English;
- Possibility of automated data entry into the Building Information System of Latvia;
- Variety of output visualisation methods;
- Online tool – user data and calculations are stored centrally with authorized access;
- Always available latest version of the tool.