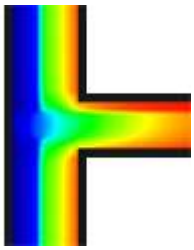
CYPETHERM BRIDGES



CYPETHERM BRIDGES is an application conceived to determine the thermal transmittance in linear thermal bridges by solving and processing a heat transfer finite element model based on the EN ISO 10211 code.

The program is part of an investigation project to develop a software tool to integrate the numerical analysis of thermal bridges when calculating the energy demand of buildings, and is financed by the "Centro para el Desarrollo Tecnológico Industrial (CDTI)", co-financed by the "European Regional Development Fund (ERDF)" and undertaken with the collaboration of the "Grupo de Ingeniería Energética" of the "Departamento de Sistemas Industriales" of the Miguel Hernandez University, Elche (Alicante).

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Program properties

CYPETHERM BRIDGES (located in CYPETHERM Suite) is an easy to use application which allows users to calculate the thermal transmittance in linear thermal bridges.

To calculate the linear thermal transmittance, CYPETHERM BRIDGES uses a finite element numerical analysis based on the two-dimensional heat transfer calculation of the EN ISO 10211 code.

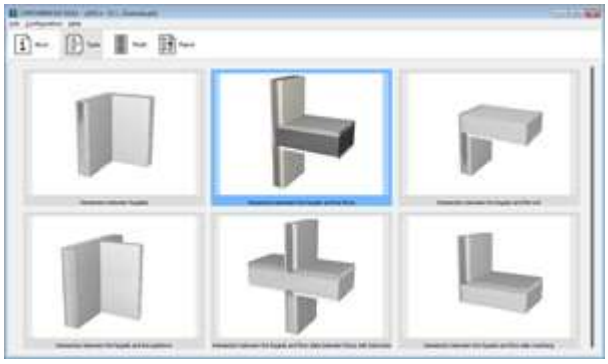
The main features of CYPETHERM BRIDGES include:

- Analysis in accordance with EN ISO 10211
- Different thermal bridge models
- Material libraries and catalogues
- Analysis results

Analysis in accordance with EN ISO 10211

The analysis of the thermal bridges is carried out using a finite element analysis based on the two-dimensional heat transfer calculation of the EN ISO 10211 code. Using this computer simulation technique, the linear thermal transmittance of each thermal bridge is obtained.

Thermal bridge models



CYPETHERM BRIDGES analyses the six most common thermal bridges in buildings:

- Intersection between façades
- Intersection between the façade and the floors
- Intersection between the façade and flat roof
- Intersection between the façade and the partitions
- Intersection between the façade and floor slabs between floors with balconies
- Intersection between the façade and floor slab overhang

Material libraries and catalogues

These allow for materials defined in the libraries and catalogues to be introduced in the program.

Analysis results

Provides the results of the linear thermal transmittance calculations for the thermal bridges, as well as diagrams displaying the temperature distributions in the thermal bridge, the heat flow lines, etc.

Program operation

CYPETHERM BRIDGES contains four sections that can be identified using the icons situated along the top: About..., Types, Model and Report.

About...
Offers information on the program properties and the procedure used to analyse linear thermal bridges.

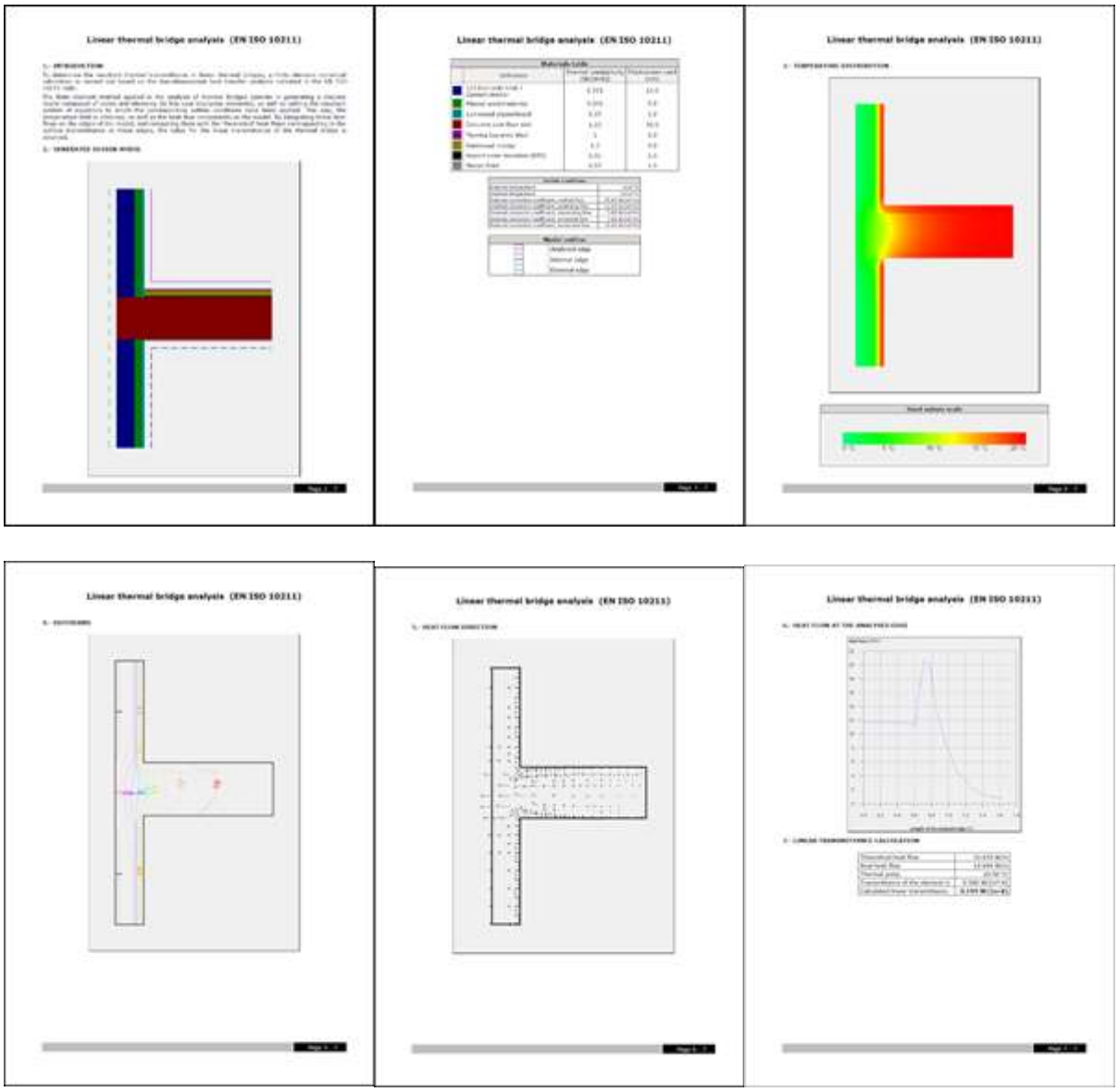
Types
The type of thermal bridge to be analysed is selected here.

Model
The thermal bridge model is defined here by introducing the layers that make up the construction elements.

Report
Users can print the job report or export it to different formats (text, HTML, PDF, RTF, DOCX). The job report includes:

- The generated design model
- Temperature distribution
- Isotherms
- Heat flow direction
- Heat flow at the analysed edge
- Linear thermal transmittance calculation

Software *for* Architecture, Engineering *and* Construction



Required user license permits

To be able to work with CYPETHERM HVAC, users must have the corresponding permission to use the program.

For project consultancy and detailed information; cype@cype.ist or support@cypetr.com