Research Fund for Coal & Steel

LARGE VALORISATION ON SUSTAINABILITY OF STEEL STRUCTURES

LVS3 project

The objective of this project is to disseminate the knowledge acquired in the recent years about the environmental impact assessment of steel and composite buildings.

During the last decade, a lot of research projects have been funded to develop methodologies, systems and products aiming at improving the thermal efficiency as well as the global environmental footprint of steel buildings.

The new standard EN15978 intended for environmental calculation of buildings takes into account the fact that steel is a recyclable material.

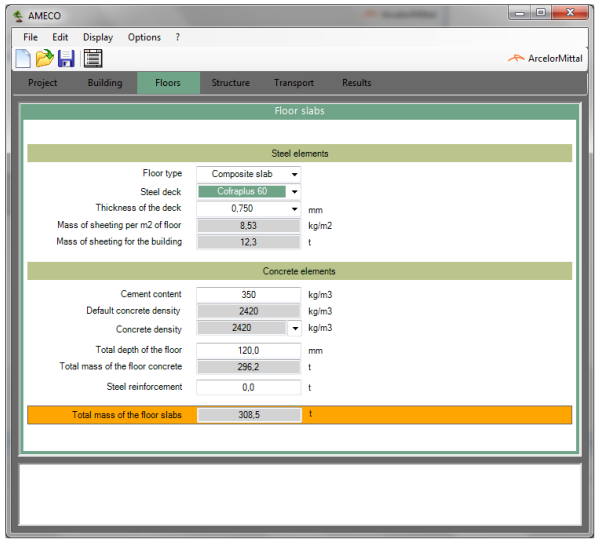
Therefore, this project summarises all this acquired knowledge into different documents (Background, Design guide, Case Studies, User-friendly Software based on EN15978), to translate all these training and teaching support into different European languages and finally to disseminate all over Europe by the organisation of workshops.

Project partnership

- ArcelorMittal Belval & Differdange SA (Luxembourg)
- bauforumstahl e.V. (Germany)
  University de Ljubljana (Slovenia)
- Ceske Vysoke Uceni Technike V Praze (Czech Republic)
- University of Athens (Greece)
- University of Timisoara (Romania)
- University of Naples Federico II (Italy)
- University of Vilnius (Lithuania)
- University of Warsaw (Poland)
- Tecnalia (Spain)
- University of Miskolc (Hungary)
- University of Coimbra (Portugal)
- University of Tallinn (Estonia)
- CTICM (France)
- University of Liège (Belgium)
- Bouwen met Staal (Netherlands)
- Stalbyggnadsinstitutet Stiftelser (Sweden)
- AC&CS – CRM Group (Belgium)
- Club Asturiano de la Innovación Asociación (Spain)

USER-FRIENDLY SOFTWARE

AMECO 3 Software for PC



IPad/Iphone application

REFERENCE DOCUMENTS

Background document

This document aims at providing in-depth information on the development and validation of life cycle methodologies focussing on the life cycle assessment of steel structures and in particular on two complementary methodologies:

- the macro-components approach, addressing the life cycle assessment of buildings and/or building components but excluding the quantification of energy in the use stage of a building;
- an approach focussing on the use stage of a building and enabling the quantification of the operational energy of buildings.

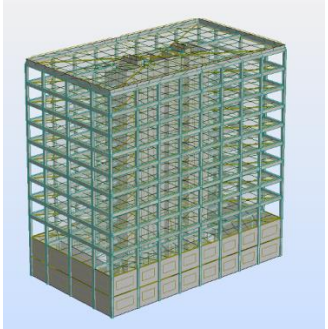
Design guide

This document aims at providing information on the different steps to be crossed for the environmental assessment of steel and composite buildings using AMECO 3 software. In particular, the design guide focuses on:

- The description of the calculation process
- A guidance on how to use AMECO 3 tool
- Application of AMECO 3 on case studies

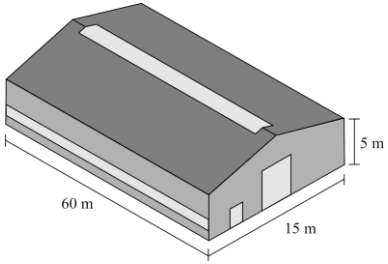
CASE STUDIES

Comparative examples are made on three case studies using the proposed methodology and tools



Office building

Residential building



Industrial hall