

LOCAFIplus



Temperature assessment of a vertical steel member subjected to localised fire - Valorisation (LOCAFIplus)

Project Coordinator: ARCELORMITTAL BELVAL & DIFFERDANGE SA (Luxembourg)

Partners:

- Centre Technique Industriel de la Construction Metallique (France)
- UNIVERSITATEA POLITEHNICA TIMISOARA (Romania)
- UNIVERSITE DE LIEGE (Belgium)
- UNIVERSITY OF ULSTER (United Kingdom)
- UNIVERSITA DEGLI STUDI DI TRENTO (Italy)
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- MISKOLCI EGYETEM (Hungary)
- TTY-SAATIO (Finland)
- THE STEEL CONSTRUCTION INSTITUTE LBG (United Kingdom)
- RISE RESEARCH INSTITUTES OF SWEDEN AB (Sweden)

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LOCAFIplus represents the valorisation project of LOCAFI whose main objective was to provide designers calculation methods with scientific evidence that will allow them to design steel columns subjected to localised fires such as those that may arise, for example, in car parks.

In fact, at the time being, such evidence, models and regulations exist for beams located under the ceiling, but nothing is available for columns, and this situation may lead to unnecessary and excessive thermal insulation that jeopardizes the competitiveness of whole steel projects.

Within LOCAFI, number of tests and numerical investigations enabled to gain comprehensive understanding of the involved phenomena that led to the quantification of convective and radiative heat fluxes received by a column subjected to a localised fire. This combination of experimental and numerical investigation also led to the definition of two calculation methods:

- a quite complex method implemented into FE software,
- a simplified method implemented into the existing user-friendly free software OZone and aimed at being introduced into the Eurocodes.

The work packages within the project LOCAFIplus:

- **WP1** - Preparation of nomograms, design guide, PowerPoint presentations and adaptation of Ozone software,
- **WP2** - Translation activities and preparation of document with legal context and adapted design examples
- **WP3** - Seminars and post-dissemination activities
- **WP4** - Coordination of the project

The objective of LOCAFIplus is to disseminate the methodology for the fire design of columns under localized fire to practicing engineers in various countries by exploiting the results obtained in LOCAFI. The transfer of the developed calculation methods into practice will be achieved by national seminars and clearly structured design

manuals. Within LOCAFIplus the design guide and OZone interface will be translated into Polish.

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