



**CPIwin®REI** is the Namirial best solution for **analytical verification** of **structures fire resistance** according to Euro-codes. The structures are verified using nominal fire curves and subjecting them in fire cases as close as possible to reality.

**CPIwin®REI** allows elements fire resistance verification in reinforced and/or prestressed concrete (REI ca-cap), steel structures (REI Steel), bearing and non-bearing walls (Rei Walls), and for wood structures (REI Wood).

### **CPIwin®REI CA-CAP MODULE**

**Verifies elements in reinforced and prestressed concrete, both inside including other materials, and applies limit state method, according to Euro-Code 2.**

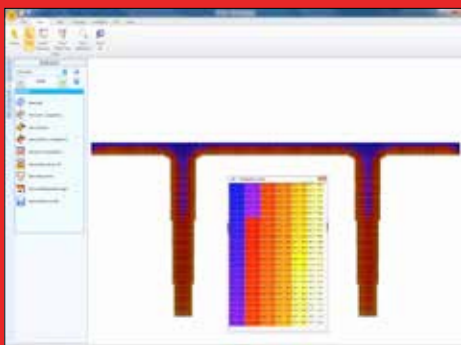
Owns a rich archive of sections but it is also possible a direct DXF file importing and defining the armors. It performs thermal analysis and calculates structures strenght.

In order to perform structure thermal analysis, element temperatures and curves, it is possible to define fire fronts, both directly exposed to flames or not, to set exposure time and verification intervals.

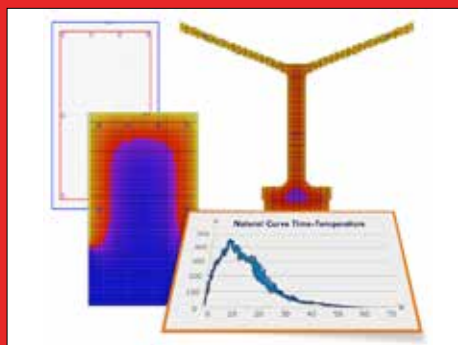
The software gives also, in graphic formats, the temperature reached by each mesh and armor and for each step of the calculation set, also in a DXF exportable file.

It is possible to input one or more combinations of stress and the program performs the calculation.

Furthermore **CPIwin®REI CA-CAP** performs many other checks as channel bracket design, cut off and stability of second order verifications, full according to resulting measurable deformations in constraints and pressures.



Thermal analysis of a double-T beam



Structure fire action applying a natural curve

### **THE USABLE CURVES**

**STANDARD**  
the program default ones

**PARAMETRIC**  
according to the CNR method or Wickstrom curve following Euro-codes

**NATURAL**  
curves obtained by the sensors in a fire simulation with FSE

### **CPIwin®REI STEEL MODULE**

**Calculates and checks critical temperature value of steel sections according to Euro-code 3 using fact, fire curves, calculation steps, stress combination, etc...**

Owns a complete archive of steel sections, but it permits the input of other different kind of sections.

Also includes an archive of materials to be used as coating and protection stock, to be implemented with other posted material.

### **CPIwin®REI WALLS MODULE**

**Checks bearing or non-bearing walls, according to Euro-code 6.**

The program owns an internal CAD where to draw the walls which have to be verified, assigning also stratigraphy of different kind of surface materials.

By inserting the stresses, if any, and indicating the side of the wall exposed to fires, the software determines the heat transmission and verifies the strength applying limit state method.

### **CPIwin®REI WOOD MODULE**

**Verifies rectangular or circular wood structures, considering size, wood kind, exposures to fire, paint protection or protective cover but also tapering, carvings and constraints.**

The calculation is performed according to **Euro-code 5** and it verifies the so-called charring rate, the strain resistance following the wood consumption.