

Non-linear stability analysis

E esas.34

Stability calculations are used to obtain an insight into the buckling mechanisms of a structure, to calculate the buckling length of a member for use in the Steel Code Check, to verify if 2nd Order calculations are required,...

This module helps to determine the global critical buckling mode and buckling load of frame structures taking into account any nonlinear effects. Calculation is done in two stages. The first stage increases loads incrementally to the point of structure instability, with calculations taking nonlinear effects into consideration. The second stage of this analysis procedure determines the buckling mode and buckling loads with high precision.

If the engineer knows the buckling load he or she can determine for each structure whether a second order calculation is required. The building codes provide the maximum figures for using first order calculations, in terms of loading and buckling loads.

Engineers can derive the critical initial deformation for a second order calculation from the global buckling mode of the structure.

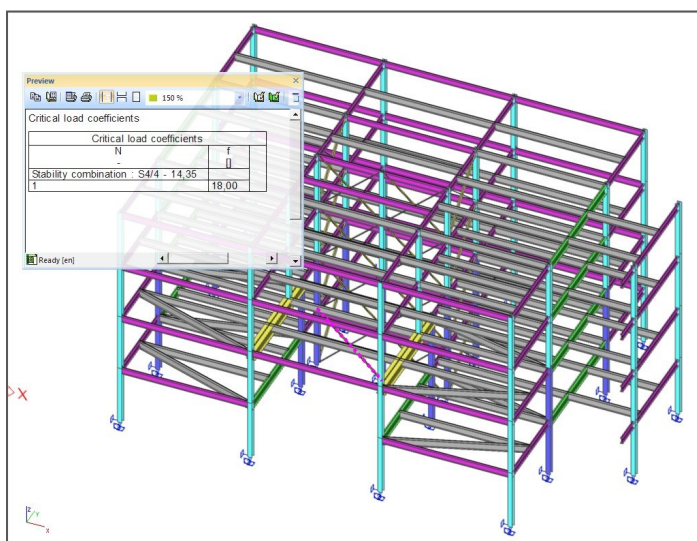
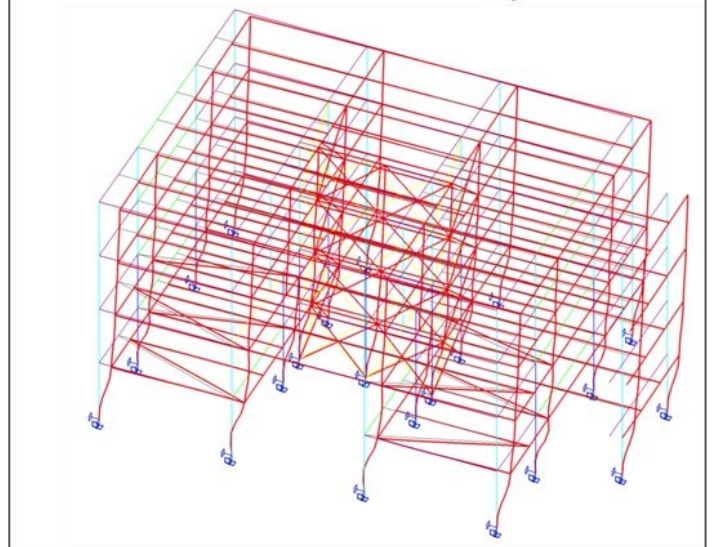
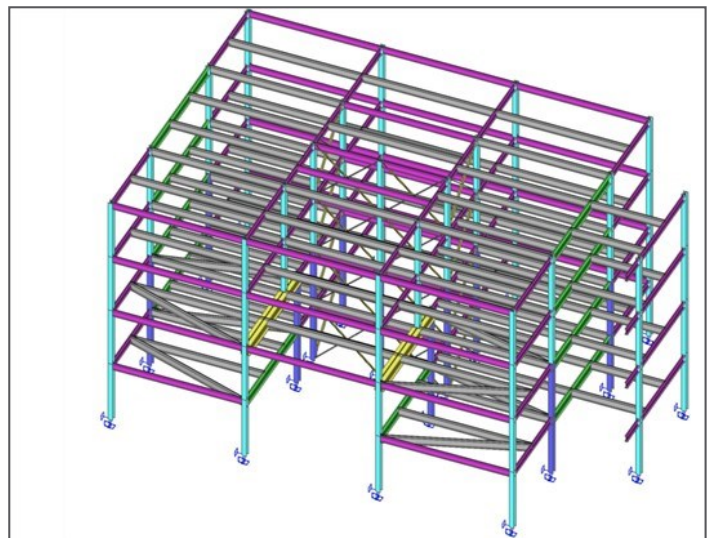
Highlights

Non linearities such as members only traction/pressure, non-linear springs etc. are taken into account.

The results include calculation buckling factors (ratio between the critical buckling load and the applied load).

Deformed shape can be displayed graphically.

The critical buckling mode can be imported in the geometric non-linear calculation as an initial deformation (in combination with geometrical non linear module).



Required modules

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