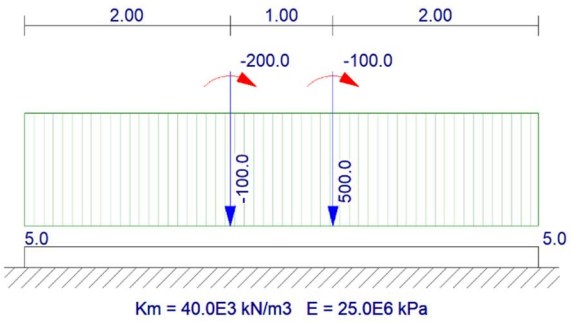
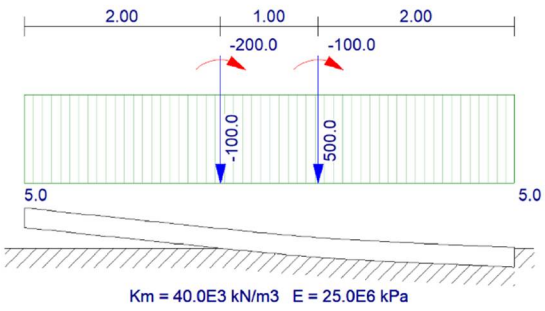
## Summary

**Elastic Support Beam** was developed for rapid analysis of a beam or a slab on an elastic foundation. This module allows for the analysis of beams or slabs with varying cross-sections along their lengths. Elastic foundations may include variations or gaps in the elastic medium, and rigid supports. An unlimited number of loads may be entered.




## What makes this module special?

- Varying cross-section.
- Gaps and Rigid Supports.
- Unlimited number of loads.

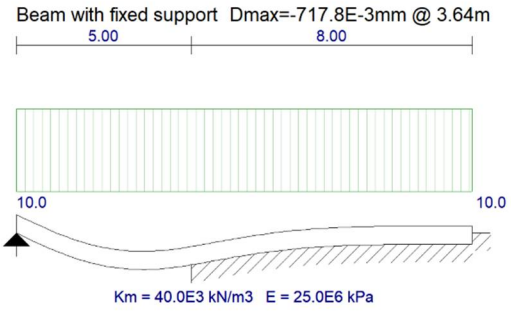
## Detailed Description

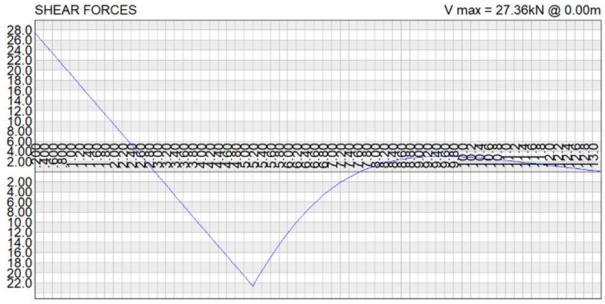
A linear analysis is performed in which the beam is modelled as a two-dimensional frame on a series of at least fifty closely spaced springs. Rigid supports are placed at the specified positions, and gaps in the elastic supports where the supporting width is set to zero. Nodes are taken at close intervals along the length of the beam as well as at every support and load position.

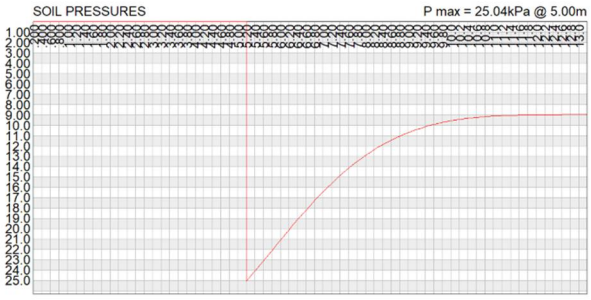
There is an option to disallow negative pressures (i.e., uplift), the program will then remove springs with negative reactions and repeat the analysis. Likewise, previously removed springs are restored if downward deflections are calculated at those points.

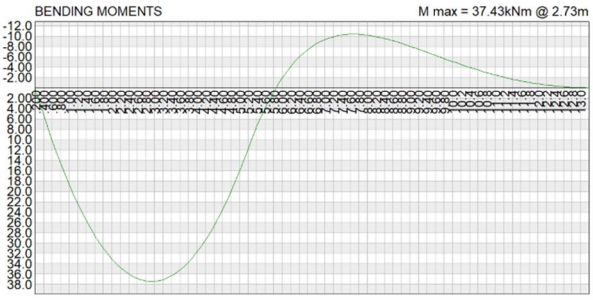
The analysis procedure is repeated until the iteration converges to a stable solution. A beam will be considered unstable, i.e., to overturn under the applied load, if the analysis yields less than two springs with compressive forces.

The analysis output includes diagrams for soil pressure, bending moment and shear force.




## Key features

- Varying cross-section.
- Gaps and Rigid Supports.
- An unlimited number of loads.