

# Design of Tapered Compression Members According to Eurocode 3

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This paper presents a formulation for the design of tapered members, Baptista *et al* (1995). It is based on the use of new additional coefficients in the EC3 relationships. A parametrical study founded on the analysis of various tapered members allows these coefficients to be obtained from a large number of numerical simulations.

In a first step, the second-order non-linear mechanical model used to solve the numerical analysis is presented. It is able to take in account the tapered shape of the members. In a second step, some examples are studied in order to validate the results. The parametrical study was developed to take into account a variable height of the cross-sections, the slenderness of the members, the axis of buckling and different boundary conditions. The numerical results have been used to build analytical relationships used to evaluate the additional coefficients. Then, the ultimate resistance of I-shape tapered compression members may be determined.