



Summary

Evaluation of new design tables for columns in the course of the amendment of EN 1992-1-2

Eurocode 2 Part 1-2 currently contains three tabular design methods for the fire protection design of columns: Method A, method B and Annex C. In the national annex of Part 1-2 of the Eurocode, only Method A has been approved for Germany, as both Method B and Annex C can provide values on the unsafe side. In addition, the national annex contains a design method for cantilever supports.

The simplified procedure according to J. Jensen presented in CEN/TC 250/SC 2/WG 1/TG 5 is intended to replace all three methods mentioned above and is also suitable for the fire protection design of cantilever columns. It is to be incorporated into the revised version of the EC 2-1-2 as a "universal column design method". However, due to the complexity of the column design in case of fire, several design methods were previously included in EC 2-1-2. There is a risk that a "universal column design method" based on a simplified procedure may produce uncertain results and/or uneconomical results in some areas.

This report examines the basis of the new procedure and assesses its scope. On the basis of extensive comparative calculations, a wide range of parameters (support length, slenderness, degree of reinforcement, load utilization, centre) is examined. In addition, the new design tables are to be compared on a case-by-case basis with the already introduced possibilities of tabular and simplified design.

The aim is to show for which cases the procedure is systematically on the safe or unsafe side and in which areas the procedure is economical. This will ensure that the existing safety level in Germany is maintained.