

FDM+

Mast Foundation

The FDM+ Mast Foundation software allows you to verify foundation of all kinds of masts and towers as well as of columns for noise-protection walls, signal boards and similar structures.

The mast foundations are typically pad foundations embedded in the ground. The foundations are loaded by moment in the first place. Their stability is ensured by the earth resistance. The serviceability analysis of these foundations is performed in accordance with the subgrade reaction modulus method published by Sulzberger in Switzerland in 1945. The subgrade reaction modulus depends on the foundation thickness and the inner friction angle (eq. (3) of the article by Steckner mentioned below). It is determined by the software in accordance with this method.

Sebastian Steckner published the article "Gebrauchstauglichkeits- und Standsicherheitsnachweis für eingespannte Blockfundamente" (serviceability verification and stability verification of restrained pad foundations) in the Bautechnik magazine (66/1989, p. 55). In this article, he corrects the discrepancies in Sulzberger's theory and makes clear what happens in the transition area when the base friction is overcome. Furthermore, he enhances Sulzberger's method in regard to sloped ground surfaces and establishes a relation between the subgrade reaction modulus and the earth pressure coefficient. Moreover, he describes a calculation model for the stability verification. The verifications of the serviceability and of the stability are performed in accordance with the specification of this article. In addition to these

verifications, the software performs the design of the foundation. Uniaxially loaded pad foundations (loaded by N, M, H) with dimensions in the range of $2/3 < D/A \leq 4$ (A = width in loading direction and D = foundation thickness) can be verified with the method described by Steckner. These criteria help distinguishing the foundations to be verified from flat foundations, pole footings and wall-type foundations.

Available standards

- EN 1992
- DIN EN 1992
- ÖNORM EN 1992
- BS EN 1992
- Bautechnik 66 (1989) H. 2

