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BOOK REVIEW

# József Farkas, Károly Jármai, Design and optimization of metal structures

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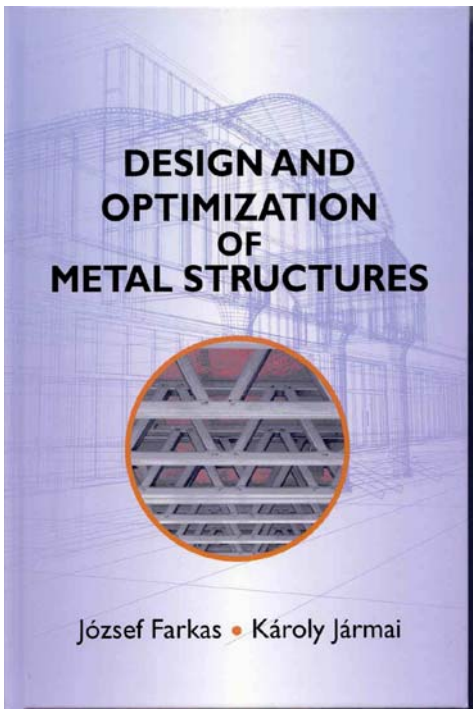


The book, published by Horwood Publishers (Chichester, UK), contains studies published by the authors since 2003 in various scientific journals and international conference proceedings. These studies show the results of a systematic research to apply the structural optimization system developed by the authors to various structural models.

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In the optimum design, safety is ensured by fulfilling the design and fabrication constraints and economy is achieved by minimization of the cost function. For this system, the cost analysis has been developed mainly for welded structures and modern mathematical methods for constrained function minimization were applied.

In the introductory chapters, the mathematical methods, the cost calculation, and the Eurocode rules for seismic and fire-resistant design are summarized. Optimum design of long-span suspended roof members, frames, tubular trusses, stiffened plates, and cylindrical shells is treated.

Some special structural models are involved as follows: cellular plates, wind turbine towers, a stiffened cylindrical shell of a fixed offshore platform as well as a square box column constructed from cellular plates.

Seismic and fire-resistant design of two different types of frames is treated. In the case of welded stiffened cylindrical shells, the problem of the economy of stiffening is systematically investigated. The cost comparison is used to decide whether a thicker unstiffened or a thinner stiffened structural version is more economical.

The book can help designers, researchers, manufacturers, and students with the aspects shown in realistic models to find better, optimal, competitive structural solutions.

The large list of references also helps to get up-to-date information.

This monograph displays the rich practical experience of the two authors in the field of modelling and analysis of industrial steel structures. The state-of-the-art book on optimum design is highly recommendable as an entry guide to this field.