Alfredo Boracchini

Design and Analysis of Connections in Steel Structures

Fundamentals and Examples

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Detail of a Moment Connection in a Composite Building Structure ("InterPuls spa" Building, Reggio Emilia, Italy)
Photo: Alfredo Boracchini

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Contents

The book introduces all the aspects needed for the safe and economic design and analysis of connections using bolted joints in steel structures. It provides an introduction into key concepts, as well as an in-depth description for the design of structural steel connections by explaining how to set up connections within the main calculation model, how to choose the connections types, and how to check them by calculation considering the limit states. This is not treated according to any specific standard but making comparison among the different norms and methodologies used in the engineering practice, e.g. Eurocode, AISC and many others across the world.

Several examples are solved and illustrated in detail, giving the reader all the tools necessary to tackle also complex connection design problems. Furthermore, the author offers an excellent software tool (SCS – Steel Connection Studio) which is illustrated in the book and may be used as an aid to assist in the comprehension of connection design. For information about accessing the software, see the book.

The book also delivers some practical suggestions for the professional engineer: how to talk about bracings to the architect, and how to interact with fabricators showing an understanding of erection and fabrication.

Alfredo Boracchini is a professional engineer licensed in Italy, Canada, and the United States. His professional experience is mainly in steel structures that he has designed and calculated for many applications and in various parts of the world. He is an active member in some international steel associations and the owner of an engineering firm with offices in Europe, Asia, and the United States. This allowed him to collect extensive international experience in the field of steel connection design that he shares in this book with other engineers interested in this field.

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