

ACTIONS - Cold formed sections

The designer should:

- use manufacturers information to minimise design time
- specify systems and details which not only meet structural requirements, but which are also easy to erect
- specify a system with a minimum number of components, to reduce erection time.

6.8 Further reading

(For further information, see Section 9, References)

Foundations

Steel designers' manual⁽³¹⁾. Amongst the extensive information to be found in this book, 27 pages in Section 27 cover foundations and holding-down systems. Subjects covered include foundations, connections to the steelwork, analysis and holding-down systems. Worked examples are included.

Joints in simple construction, vols 1 and 2,^(14,15) and *Joints in steel construction: moment connections*⁽¹⁶⁾. Section 6 (8 pages) of volume 1 includes a design procedure for nominally pinned bases. Section 7 (18 pages) of Volume 2 includes examples. For moment resisting bases, principles, procedures and a worked example are given in Section 6 (17 pages) of the moment connections publication. See also Further Reading in Section 2.4.

Connections between steel and other materials⁽⁴⁸⁾. Section 2.3 presents a connection detail for a steel column to a new concrete foundation. See Further Reading in Section 4.4 for more information.

The National Structural Steelwork Specification for Building Construction, 3rd edition⁽⁶⁾. Presents tolerances for foundation level and holding-down bolt positions. See also Further Reading in Section 2.4.

Holding down systems for steel stanchions⁽⁵⁴⁾. Although dated, this still contains useful information.

Concrete and masonry elements

Connections between steel and other materials⁽⁴⁸⁾. Presents an overview of methods of making structural connections between steelwork and concrete or masonry elements.

The National Structural Steelwork Specification for Building Construction, 3rd edition⁽⁶⁾. Presents tolerances for the position of a wall face, and the position of a cast-in bolt. See also Further Reading in Section 2.4.

Steel construction yearbook 1997⁽⁵⁵⁾. Manufacturers' information should be consulted for details of proprietary anchors.

Timber elements

Steel detailers' manual ⁽⁵⁶⁾. Provides an introduction to draughtsmen, technicians, structural engineers, architects and contractors in the detailing of steelwork. Figure 6.6 is taken from this publication.

Composite beams

SCI publications. Numerous guides covering various aspects of composite construction. Details available from the SCI. Principal titles include:

Design of composite slabs and beams with steel decking ⁽⁵⁷⁾. Presents a method of design consistent with BS 5950: Parts 1 and 3 ⁽⁸⁵⁾ for simply supported composite beams used in buildings. Includes design tables and a worked example.

Commentary on BS 5950: Part 3: Section 3.1 Composite beams ⁽⁵⁸⁾. Covers the background to the code and provides an in depth explanation of its requirements.

Good practice in composite floor construction ⁽⁵⁹⁾. Aimed at site engineers, foremen and operatives, emphasises correct procedures to be followed in order to avoid bad practice.

Steel construction yearbook 1997 ⁽⁵⁵⁾. Manufacturers information provides details of decking and shear connectors. Information on site practice is also available.

Precast concrete floors

Slim poor design and construction ⁽⁵⁰⁾. Presents a method of design for slim floor construction comprising steel beams and concrete slabs located within the depth of the beams. Includes design charts and worked examples.

Lateral stability of steel beams and columns. ⁽⁵¹⁾ The first Section covers the theory of elastic stability of beams and columns. Common cases that are encountered in building construction are presented in the second Section, including a case study of beams supporting precast concrete slabs.

Steel construction yearbook 1993 ⁽⁵⁵⁾. Precast concrete slab manufacturers design and detailing information should be consulted.

Crane girders and rails

The National Structural Steelwork Specification for Building Construction, 3rd edition ⁽⁶⁾. Presents tolerances for rail gauge, and the maximum permissible step in level at a rail joint. See also Further Reading in Section 2.4.

Manufacturers information should be sought for details of rails and clips, for example *The section book* ⁽⁵²⁾ produced by British Steel.

Cold formed sections

Design of structures using coldformed steel sections ⁽⁵³⁾. A design guide for practitioners covering the design and application of cold formed steel sections in general building construction. Includes design tables for section and member properties. Conforms to BS 5950: Part 5 ⁽⁸⁵⁾.

Building design using coldformed steel sections: worked examples to BS 5950: Part 5: 1987 ⁽⁶⁰⁾. A companion publication to above, it covers the detailed design