



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 50018-2025

Replacing GB 50018-2002

Technical standard for cold-formed steel structures

冷弯型钢结构技术标准

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Foreword

This document was issued on 21 April 2025 by the Ministry of Housing and Urban-Rural Development of the PRC and the State Administration for Market Regulation and takes effect on 1 September 2025.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies.

The document runs to 236 pages. The identification, the dates, the classification and the table of contents on this page are taken from the cover and the printed contents of the standard itself.

This standard was approved by the Ministry of Housing and Urban-Rural Development of

the PRC under Announcement No. 66 of 2025 and takes effect on 1 September 2025.

It replaces the former national standard "Technical code of cold-formed thin-wall steel structures" GB 50018-2002, and its scope has been widened from thin-wall sections to cold-formed steel of 0.6 mm to 20 mm thickness.

Appendix C introduces the direct strength method for calculating member capacity, alongside the effective width approach retained in the body of the standard.

1 Scope

GB/T 50018-2025 is the Chinese technical standard for cold-formed steel structures, the design and construction code for everything built from roll-formed sections and profiled sheeting: purlins and wall beams, light gauge trusses, gabled frames, decking and light steel framing. Cold-formed steel is difficult to design because its slender elements buckle locally and distortionally long before the section yields, so capacity is governed by stability rather than strength, and this is the document that tells a Chinese engineer how to compute it. It sets the basic design requirements and detailing, the materials with their design strengths, then the calculation of members in tension, compression, bending and combined actions and the treatment of compressed elements; the calculation and detailing of connections, including self-tapping screws, which occupies fourteen pages; the seismic design; profiled steel sheeting; roof purlins and wall beams; roof trusses, both common and extra thin-walled; gabled frames; and the fabrication, erection, anti-corrosion coating and fire protection coating. Seven appendices carry the working material, among them the strength gain from the cold-forming effect, the calculation coefficients, a full direct strength method, sixty-two pages of section properties, the screw capacity test method, the column effective length factors and the corrosion classification with paint systems and maintenance intervals. The 2025 edition replaces GB 50018-2002, which is superseded, and now covers cold-formed steel from 0.6 mm to 20 mm thick.

2 Terms and symbols

Clause 2 is organised as follows: 2.1 Terms; 2.2 Symbols.

3 Basic design requirements

Clause 3 is organised as follows: 3.1 Design principles; 3.2 General requirements of detailing.

4 Materials

Clause 4 is organised as follows: 4.1 Selection of materials; 4.2 Design strength and parameters.

5 Calculation of members

Clause 5 is organised as follows: 5.1 Axially tensioned members; 5.2 Axially compressed members; 5.3 Flexural members; 5.4 Members under combined axial tension and bending; 5.5 Members under combined axial compression and bending; 5.6 Compressed elements in members.

6 Calculation and detailing requirements of connections

Clause 6 is organised as follows: 6.1 Calculation of connections; 6.2 Detailing requirements of connections.

7 Seismic design

Clause 7 is organised as follows: 7.1 General requirements; 7.2 Key points in seismic calculation; 7.3 Basic seismic measures.

8 Profiled steel sheeting

Clause 8 is organised as follows: 8.1 Calculation of profiled steel sheeting; 8.2 Detailing requirements of profiled steel sheeting.

9 Roof purlins and wall beams

Clause 9 is organised as follows: 9.1 General requirements; 9.3 Detailing requirements of roof purlins; 9.4 Calculation of wall beams; 9.5 Detailing requirements of wall beams.

10 Roof trusses

Clause 10 is organised as follows: 10.1 Common cold-formed steel roof trusses; 10.2 Extra thin-walled cold-formed steel roof trusses.

11 Gabled frames

Clause 11 is organised as follows: 11.1 General requirements; 11.2 Design of frame beams and columns; 11.3 Connections and joint detailing.

12 Fabrication, erection and coating

Clause 12 is organised as follows: 12.1 Fabrication; 12.2 Erection; 12.3 Anti-corrosion coating; 12.4 Fire protection coating.