

UDC



**National Standard of the People's Republic of China**

P

GB 50018-2002

---

**冷弯薄壁型钢结构技术规范**  
**Technical code of cold-formed thin-wall steel structure**

**Issued on Sep 27, 2002**

**Implemented on Jan 01, 2003**

---

**Jointly Issued by:** the Ministry of Construction, P.R.C  
General Administration of Quality Supervision, Inspection and Quarantine of  
the People's Republic of China

**Notice on Ministry of Housing and Urban-Rural Development  
(MOHURD) of the People's Republic of China**

No.63

Notice on Publishing the National Standard “*Technical code of  
cold-formed thin-wall steel structures*” of MOHURD

The *Technical code of cold-formed thin-wall steel structures* has been approved as a national standard with a serial number of GB 50018-2002, which shall take effect as of Jan 1, 2003. Thereof, Article (Item) 3.0.6, 4.1.3, 4.1.7, 4.2.1, 4.2.3, 4.2.4, 4.2.5, 4.2.7, 9.2.2 and 10.2.3 are compulsory provisions and must be enforced strictly. The *Technical specifications for cold shaped thin-walled steel section structures* (GBJ18-87) shall be abolished simultaneously.

MOHURD of the People's Republic of China  
Sept 27, 2002

## Foreword

According to the requirements of Document Jian Biao [1998] No. 94 issued by Ministry of Construction (MOC), this code is completed by the Hubei Development and Reform Commission, Central-South Architectural Design Institute Co., Ltd jointly with relevant units based on the revision of *Technical specifications for cold shaped thin-walled steel section structures* (GBJ18- 87).

The standard (code) comprises 11 Chapters and 5 Annexes, principal revised contents includes:

1. Added the contents of design life shall be taken into account when varying degrees of security are used according to New National Standard *Unified standard for reliability design of building structures*;
2. Added the design principle of stressed skin construction in single-storey house design;
3. Supplemented the design formulas of stability of homotaxial symmetry section bending-compression parts which action on non-symmetrical plane;
4. Changed the effective flakiness ratio of three kinds of pressure parts as take group as calculate unit, considering the force of constraint of adjacent parts, unified formulas should be used;
5. Added the contents of new connection type such as tapping screw, rivets, drive pin and circular welds, etc;
6. Added the calculation methods of non-combined effect floor, bearing bending moment and shearing force to widespread applied compression steel plates;
7. Added the design stipulations and structural requirements for hollow steel section wall beam with widely application;
8. Supplemented the length calculation formulas in multispans steel frame and supplemented the regulations of limitation of vertical deflection of rigid frame beam and limitation of capital sidesway, etc.

This Code may be revised in the future, relevant revised information and provisions will be published on *Construction Standardized*.

The provision(s) printed in bold type is (are) compulsory one (ones) and must be enforced strictly.

Ministry of Housing and Urban-Rural Development is in charge of the administration of this standard (code) and Central-South Architectural Design Institute Co., Ltd is responsible for the routine management and the explanation of specific technical contents respectively

All relevant organizations are kindly requested to sum up and accumulate your experiences in actual practices during the process of implementing this code. The relevant opinions and advice, whenever necessary, can be posted or passed on to the management group of *Technical code of cold-formed thin-wall steel structures* of Central-South Architectural Design Institute Co., Ltd No.10 Wuchang Central-South Road 2 Wuhan, Hubei (Postcode: 430071, Email: lwssc@public.wh.hb.cn)

The chief development organization, participating development organizations and chief drafting staff are as follows:

Chief development organization: Central-South Architectural Design Institute Co., Ltd

Participating development organizations:

Tongji University

Shenzhen University

Xi'an University of Architecture and Technology

Harbin Institute of Technology

Fuzhou University

Hunan University

Capital Construction Management Department of Dongfeng Automobile

Wuhan University

Shanghai University of Communications

Architectural Design Standards Institute

Zhejiang Hangxiao Steel Structure Co., Ltd

Nanchang University

Fujian Changxiang Steel Structure Co., Ltd

Hilti China Ltd.

Chief drafting staff:

Chen Xueting, Lu Zuxin, Shen Zuyan, Zhang Zhongquan, He Baokang, Xu Houjun, Zhang Yaochun, Wei Chaowen, Zhou Xuhong, Kong Cirong, Fang Shanfeng, Zhou Guoliang, Cai Yiyan, Chen Guojin, Guo Yaojie, Gao Xuanneng, Shan Yinmu, Xiong Hao and Wang Zhi

# Contents

<b>1. General.....</b>	<b>1</b>
<b>2. Terms and Symbols.....</b>	<b>2</b>
2.1 Terms .....	2
2.2 Symbols .....	2
<b>3. Materials .....</b>	<b>6</b>
<b>4. Basic design provision .....</b>	<b>7</b>
4.1 Design principles .....	7
4.2 Design index .....	8
4.3 General regulation of structure .....	10
<b>5. Calculation of members.....</b>	<b>12</b>
5.1 Axial tensile member .....	12
5.2 Axial compressive member.....	12
5.3 Flexural member .....	16
5.4 Stretch bending member .....	19
5.5 Press bending member .....	19
5.6 Compressive elements in member .....	24
<b>6. Calculations and configurations of connection .....</b>	<b>30</b>
6.1 Calculations of connection.....	30
6.2 Configurations of connection.....	39
<b>7. Formed steel plate .....</b>	<b>42</b>
7.1 Calculations of formed steel plate.....	42
7.2 Configurations of formed steel plate.....	45
<b>8. Purlin and wall beam.....</b>	<b>47</b>
8.1 Calculations of purlin.....	47
8.2 Configurations of purlin.....	48
8.3 Calculations of wall beam.....	49
8.4 Configurations of wall beam.....	50
<b>9. Roof truss.....</b>	<b>51</b>
9.1 Calculations of roof truss.....	51
9.2 Configurations of roof truss.....	52
<b>10. Rigid frame .....</b>	<b>53</b>
10.1 Calculations of rigid frame .....	53
10.2 Configurations of rigid frame .....	57
<b>11. Manufacture, installation and anticorrosion .....</b>	<b>58</b>
11.1 Manufacture and installation.....	58
11.2 Anticorrosion.....	61
<b>Appendix A Coefficient of calculation.....</b>	<b>64</b>
<b>Appendix B Section characteristics.....</b>	<b>73</b>
<b>Appendix C Calculation method of design values of strength which considering the effect of cold forming.....</b>	<b>116</b>
<b>Appendix D The classification of the effect of corrosion and the mating and the maintaining annual limit of the priming lacquer, the surface lacquer of</b>	

<b>anticorrosion.....</b>	<b>117</b>
<b>Appendix Wording explanations for this code .....</b>	<b>119</b>

## **1. General**

- 1.0. 1** This code has been worked out for the purpose of implementing the technical and economical policies of the country in design and construction of cold-formed thin-walled steel structure so that the design and construction can be technically advanced, economically reasonable, reliable and safe and ensure the quality of the works.
- 1.0. 2** This code applies to the design and construction of cold-formed thin-walled steel structure works for building engineering.
- 1.0. 3** This code does not cover the special requirements of structure which bearing dynamic loading directly and cold-formed thin-walled steel structure which undergoing intense corrosive effect.
- 1.0. 4** The design principles of this code are constituted according to the present National Standard "United Code for Design of the reliability of Building Structure" GB 50068.
- 1.0. 5** When designing cold-formed thin-wall steel structure, it should ensure that the structure comply with the requirements of intension, stability and rigidity, and accord with the fireproofing and anticorrosion requirements during the course of transportation, installation and performance, the materials, structure schemes and configuration measures should be selected reasonably taken into account of engineering reality.
- 1.0. 6** Apart from the implementation of this code, the design and construction of cold-formed thin-wall steel structure shall also be in conformity with relevant standards being now in use in the country.

---

---

## 完整版本请在线下单

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email: [info@lancarver.com](mailto:info@lancarver.com)

<http://www.lancarver.com>

---

---

## 线下付款方式：

### 1. 对公账户：

单位名称：北京文心雕语翻译有限公司

开户行：中国工商银行北京清河镇支行

账 号：0200 1486 0900 0006 131

---

---

### 2. 支付宝账户：info@lancarver.com

---

---

注：付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！

---



银联特约商户