



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

GB 50205-2020

**Standard for acceptance of construction quality of steel
structures**

Issued on: January 16, 2020

Implemented on: August 1, 2020

Issued by: MOHURD

Table of Contents

Foreword	8
1 General requirements	12
2 Terms and symbols	12
3 Basic requirements	15
4 Materials and products approach	17
5 Welding engineering	30
6 Connection engineering of fasteners	38
7 Processing of steel parts and steel components	42
8 Assembling engineering of steel elements	57
9 Test assembling engineering of steel elements	70

1 General requirements

1.0.1 In order to strengthen the quality management of construction projects, unify the acceptance of construction quality of steel structure projects, ensure the quality of steel structure projects, this standard is hereby formulated.

1.0.2 This standard is applicable to the acceptance of construction quality of steel structure engineering of industrial and civil buildings and structures.

1.0.3 This standard should be used in conjunction with the current national standard "Unified acceptance standard for building construction quality" GB 50300.

1.0.4 In addition to this standard, the acceptance of construction quality of steel structure projects shall also comply with the current relevant national standards.

2.1.1 Part

The smallest unit that constitutes a part or component, such as a gusset sheet, a flange sheet, etc.

2.1.2 Component

A unit composed of several parts, such as welded H-beams, steel brackets, etc.

2.1.3 Element

The basic unit of steel structure composed of parts or parts and components, such as beams, columns, supports, etc.

2.1.4 The smallest assembled rigid unit

In the installation project of steel grid and reticulated shell structure, the smallest installation unit except for the loose parts, which is generally divided into two types. plane truss and cone.

2.1.5 Assemble of high strength bolt

A general term for high-strength bolts and matching nuts and washers.

2.1.6 Slip coefficient of faying surface

In the high-strength bolt connection, the ratio of the external force when the friction surface of the connecting piece is slipped to the sum of the pretension force of the high-strength bolt perpendicular to the friction surface.

2.1.7 Test preassembling

Assembling to check whether the elements meet the installation quality requirements.

2.1.8 Space rigid unit

A space-stable structure composed of elements.

2.1.9 Stud welding

A method of energizing the arc by contacting one end of the welding nail (stud) with the surface of the sheet (or pipe) and, after the contact surface is melted, applying a certain pressure to the welding nail (stud) to complete the welding.

3.0.1 The construction organization of steel structure engineering shall have

corresponding construction technical standards, quality management system, quality control and inspection system; the construction site shall have approved construction program, construction plan and other technical documents.

3.0.2 The acceptance of construction quality of steel structure engineering must

use measuring instruments that have passed metrological verification and calibration. The witness sampling and sample delivery of steel structure engineering shall be completed by

the testing agency.

3.0.3 The engineering technical documents and contract documents used in the

construction of steel structure projects shall have the requirements for the acceptance of the construction quality of not lower than the provisions of this standard.

3.0.4 The construction quality control of steel structure engineering shall be

carried out in accordance with the following provisions.

3.0.5 Acceptance of construction quality of steel structure engineering shall be

carried out in accordance with inspection batches, item work, divisional (sub-divisional) work on the basis of qualified self-inspection by the construction organization. The division of item work in the divisional (sub-divisional) work of the steel structure engineering shall be implemented in accordance with the current national standard "Unified acceptance standard for building construction quality" GB 50300. The steel structure item work shall be composed of one or several inspection batches, the inspection batches of each item work shall be divided according to the provisions of this standard;

meanwhile it shall be confirmed by the supervisor (or construction organization).

4.1.1 The main materials, parts (components), finished parts, standard parts

and other products for steel structure shall be subject to mobilization acceptance.

4.1.2 In principle, the division of inspection batches for mobilization acceptance

should be consistent with the inspection batches of each item work. Inspection batches can also be divided according to the scale of the project and the actual conditions of incoming materials.

4.2 Steel sheet

I Main control item

4.2.1 The variety, specification and performance of steel sheets shall meet

the requirements of current national standards and meet design requirements. When the steel sheet enters the site, the test pieces shall be taken according to the current national standards, to be subject to the testing of the yield strength, tensile strength, elongation and thickness deviation. The testing results shall comply with the current national standards.

Inspection quantity. All quality certification documents are inspected; the sampling quantity is determined according to the mobilization batch and the sampling inspection plan of the

product.

Inspection method. Check quality certification documents and sampling inspection report.

4.2.2 The steel sheet shall be subject to the witnessed sampling and

reinspection in accordance with Appendix A of this standard. The results of the re-inspection shall meet the requirements of the current national standards and meet the design requirements.

Inspection quantity. Inspection for all.

Inspection method. Witness the sampling and sample delivery; check the re-inspection report.

II General items

4.2.3 The thickness of the steel sheet and its allowable deviation shall meet the

requirements of its product standards and design documents.

Inspection quantity. Spot inspection for 10% of each batch of steel sheets of the same variety and specification; meanwhile it is no less than 3 pieces, 3 locations per piece shall be inspected.

Inspection method. Use vernier caliper or ultrasonic thickness gauge to make measurement.

4.2.4 The flatness of the steel sheet shall meet the requirements of its product

standards.

Inspection quantity. Spot inspection for 10% of each batch of steel sheets of the same variety and specification; meanwhile it is no less than 3 pieces, 3 locations per piece shall be inspected.

Inspection method. Use stayguy, steel ruler and vernier caliper for measurement.

4.2.5 The surface appearance quality of the steel sheet shall not only meet the

requirements of the current national standards, but also the following requirements.

5.1.1 This chapter is applicable to the quality acceptance of welding

engineering for steel element welding and stud (welding nail) in the fabrication and installation of steel structures.

5.1.2 The inspection batch of steel structure welding engineering can be divided