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

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Replacing GB 50410-2007

**Code for design of rolling process of hot-rolled section and bar
mill**

型钢轧钢工程设计规范

(English Translation)

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1 General

1.0.1

In order to implement relevant national laws, regulations, guidelines and policies in the construction of section steel rolling projects, to achieve safety, reliability, environmental protection and energy saving, advanced technology, and economical rationality, this specification is formulated.

1.0.2

This specification is applicable to the design of new and reconstructed section steel rolling projects.

1.0.3

In addition to implementing this specification, the engineering design of section steel rolling should also comply with the current relevant national standards.

2.0.1 Hot-rolled section steels

It generally refers to long strips of hot-rolled steel with specific cross-sectional shapes and sizes, and is the main type of steel that is different from strips and steel pipes.

2.0.2 Continuous rolling mill

There are no reversible and reciprocating rolling passes, the racks are basically arranged in-line, and the rolling stock may be rolled simultaneously between two or more racks, which can be divided into full continuous arrangement and unrolling continuous arrangement. layout.

2.0.3 Semi-continuous rolling mill with semi-continuous arrangement

The rough rolling mill or billet rolling mill adopts reversible or reciprocating rolling method, and the middle and finishing rolling mills are continuous rolling mills.

2.0.4 Tandem arrangement rolling mills arranged in succession

The billet rolling mill, intermediate rolling mill and finishing mill are arranged in tandem, and both the billet mill and the intermediate rolling mill adopt reversible rolling.

2.0.5 Multiple single-stand reversing mill

The whole line adopts multiple rolling mills, and each rolling mill is rolled separately.

3 Basic Regulations

3.0.1

The engineering design of section steel rolling should actively adopt advanced and reliable new technology, new process and new equipment.

3.0.2

In addition to special steel types, continuous casting slabs should be used as blanks in the engineering design of section steel rolling.

3.0.3

The continuous casting slab hot delivery and hot charging process should be adopted for the engineering design of section steel rolling.

3.0.4

It is strictly forbidden to adopt the production technology and equipment eliminated by the state in the design of section steel rolling engineering.

3.0.5

The design output of the section steel rolling project should reach an economical production scale, and the annual effective working time and load rate of the rolling mill should be reasonably determined. The main technical and economic indicators of the workshop should reach the domestic advanced level, and the energy consumption of the process should meet the relevant provisions of the current national standard "Code for Energy Conservation Design of Iron and Steel Enterprises" GB 50632.

3.0.6

The technological equipment capabilities of the section steel rolling workshop should match each other to ensure smooth and stable production process, meet the production requirements of the product outline, and the product quality should meet the current relevant national standards.

3.0.7

The level of electrical transmission and automation equipment in the section steel rolling workshop should be compatible with the production process and the equipment level of the production unit.

3.0.8

The fire protection design of section steel rolling works shall comply with the relevant provisions of the current national standard "Code for Fire Protection Design of Buildings" GB 50016 and "Code for Fire Protection Design of Iron and Steel Metallurgical Enterprises" GB 50414.

4.1 Production scale and products

4.1.1

The production scale of the new small section steel production line shall meet the following requirements.

- 1 For a production line whose main product is small-sized section steel, the designed annual output should not be less than 250,000 t.
- 2 For a production line with alloy steel as the main steel type, the designed annual output should not be less than 300,000 tons.
- 3 For production lines with ordinary quality non-alloy steel and ordinary quality low-alloy steel as the main steel types, the designed annual output should not be less than 500,000 tons.

4.1.2

The division of product varieties should meet the following requirements.

- 1 Small-sized round steel, square steel, flat steel, hexagonal steel, octagonal steel and other simple section steels should be classified as small bars.
- 2 Ribbed steel bars and plain steel bars should be classified as steel bars.
- 3 Sectional steels with complex sections such as small-sized angle steels and channel steels should be classified into small-sized shaped steels.

4.1.3

The specification range of main varieties should meet the following requirements.

- 1 Bars should be round steel with a diameter of 8 mm to 50 mm and square steel, hexagonal steel, octagonal steel, (5 to 20) mm x (30 to 100) mm flat steel with corresponding cross-sections;
- 2 The diameter of steel bar should be 8mm~50mm;
- 3 The angle steel should be 2.5

4.2 Blank

4.2.1

The production line shall use continuous casting slabs as blanks, and for some special steel types, rolled or forged slabs may be used as blanks.

4.2.2

The section of the billet should meet the following requirements.

- 1 The section of the billet should be determined according to factors such as the steel type,