

ICS 77.010
CCS P 73



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

GB 50930-2013

Code for design of cold rolling strip plant

冷轧带钢工厂设计规范

(English Translation)

Issued on: November 29, 2013

Implemented on: June 1, 2014

**Issued by: Ministry of Housing and Urban-Rural Development of the
People's Republic of China;**

**General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

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1 General

1.0.1

In order to implement the national iron and steel industry development policy, standardize the design of cold-rolled strip factory, realize the advanced nature, practicability, economy and rationality of cold-rolled strip factory design, and ensure that the factory meets the requirements of energy saving, environmental protection, safety and fire protection, etc.,

develop this specification.

1.0.2

This specification is applicable to the design of new, rebuilt and expanded cold-rolled strip factories and independent workshops, but not applicable to the design of cold-rolled electrical steel factories and cold-rolled stainless steel factories.

1.0.3

The design of the cold-rolled strip steel plant shall not only conform to this specification, but also comply with the current relevant national standards.

2.1.1 Cold rolled strip

Cold-rolled strip steel refers to the strip steel produced by using hot-rolled strip steel as raw material and undergoing processes such as pickling, cold rolling, (degreasing), annealing, smoothing, and finishing.

2.1.2 Coated cold rolled steel strip

Cold-rolled coated strip steel refers to the strip steel produced by cold-rolled steel coil, surface degreasing, annealing, and coating, including hot-dip galvanized strip steel (hot-dip galvanized aluminum 5% Al strip steel, hot-dip galvanized aluminum zinc 55% Al strip steel, etc.), electro-galvanized strip steel, electro-tin-plated steel strip (including chrome-plated steel strip).

2.1.3 Organic coated cold rolled steel strip

Cold-rolled coated steel strip refers to the steel strip produced by surface degreasing, coating or cladding with annealed and flattened steel coil or coated steel coil as raw material, also known as color coated steel strip.

2.1.4 Push-pull pickling line (PPL) push-pull pickling line

The unit does not have a welding machine and a large-capacity looper. The steel coil is uncoiled, corner-cut, pickled, rinsed, dried, edge-trimmed, oiled, coiled and other processes, and the pickling unit is a single-coil intermittent production.

2.1.5 Continuous pickling line (CPL) continuous pickling line

Pickling unit for continuous production of steel coils after uncoiling, welding, mechanical scale breaking, pickling, rinsing, drying, edge trimming, oiling, coil splitting, coiling and other processes.

2.1.6 Cold Reversing Mill (CRM) cold reversing mill

The strip is reciprocally rolled on the rolling mill to finally obtain the required thickness of the rolling mill. There are two kinds of single-stand reversing cold-rolling unit and double-stand reversing cold-rolling unit.

2.1.7 Tandem Cold Mill (TCM) tandem cold mill

A cold tandem rolling unit with 3 or more racks arranged in series. It is divided into conventional tandem cold rolling mill (TCM), full continuous cold tandem rolling mill (FTCM) and pickling and rolling mill combination (PLTCM).

2.1.8 Electrolytic degreasing unit (ECL) electrolytic cleaning line

The cold-rolled steel coil is uncoiled, welded, degreased, coiled and other processes, and the production unit continuously degreases the surface of the strip.

2.1.9 Bell annealing furnace (BAF) batch annealing furnace

An annealing furnace in which the stacked steel coils are recrystallized and annealed in the hood.

2.1.10 Continuous annealing line (CAL) continuous annealing line

The cold-rolled steel coil is continuously annealed through uncoiling, welding, degreasing, annealing, smoothing, trimming, inspection, oiling, coiling, and other processes.

2.1.11 Temper mill

It is a unit used to improve the mechanical properties and flatness of cold-rolled strip steel, eliminate the yield plateau of strip steel after annealing, and improve the surface quality of strip steel. There are two types of separation line leveling unit and online leveling machine.

2.1.12 Continuous hot dip galvani-zing line (CGL) continuous hot dip galvani-zing line

Cold-rolled steel coils are uncoiled, welded, degreased, annealed, hot dipped, (alloyed), cooled after plating, skinned, stretched, post-treated (passivation, anti-fingerprint, phosphating, etc.), (trimmed), inspection, oiling, coiling, and other processes to continuously form a zinc layer (or zinc alloy layer) on the surface of the strip.

2.1.13 Continuous electrolytic gal-vanizing line (EGL) continuous electrolytic gal-vanizing line

The cold-rolled steel coil after annealing and leveling undergoes uncoiling, welding,

(stretching and straightening), degreasing, pickling, electroplating, passivation, inspection, oiling, coiling, and other processes, and the production of continuous electrogalvanizing on the surface of the strip unit.

2.1.14 Continuous electrolytic tin-ning line (ETL) continuous electrolytic tin-ning line

The cold-rolled steel coil after annealing and leveling is continuously electroplated on the surface of the strip through the processes of uncoiling, welding, (stretching and straightening), degreasing, pickling, electroplating, reflow, passivation, inspection, oiling, coiling, and coiling. Tin production unit.

2.1.15 Color coating line (CCL) color coating line

Coating organic color paint or pasting plastic film on cold-rolled or coated or plated substrates to produce colored organic-coated or plastic-coated strip steel production units.

2.1.16 Finishing line

According to user requirements, inspect, trim, (stretch and straighten), coil, cross-cut, slitting and packaging the finished cold-rolled strip, including recoiling (inspection) unit, cross-cutting unit, slitting unit, packaging unit.

2.1.17 Acid regeneration plant (ARP) acid regeneration plant

A facility that reacts the waste acid produced by the pickling unit to generate regenerated acid.

2.1.18 Basic automation system (L1) basic automation system

A control system that realizes the collection and processing of on-site data, data exchange, and the execution of commands required by output devices.

2.1.19 Process automation system (L2) process automation system

A control system that uses computer technology and software engineering to make the production process more efficient and safer.

2.1.20 Manufacturing execution system (MES) manufacturing execution system

Responsible for coordinating the production between processes or workshops, rationally allocating resources, executing and completing the production tasks issued by the enterprise resource planning ERP system, carrying out production planning and scheduling for problems in actual production, and implementing product quality management and control systems.