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

GB/T 8165-2025

Replacing GB/T 8165-2008

Stainless steel clad plate, sheet and strip

不锈钢复合钢板和钢带

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1 Scope

This document specifies the classification and designations, manufacturing processes, ordering information, technical requirements, test methods, inspection rules, packaging, marks, and quality certificates for stainless steel clad plates, sheets and strips [hereinafter referred to as clad plates, sheets (strips)] produced by explosion compounding method, exploded rolling method, and rolled compounding method.

This document applies to clad plates, sheets (strips) consisting of a stainless steel cladding metal and a base metal of carbon steel, low-alloy steel, or alloy steel. It covers single-sided and double-sided clad plates, sheets (strips) used for the manufacture of various pressure vessels, storage tanks, structural components, and the like.

2 Normative references

GB/T 247
 GB/T 708
 GB/T 709
 GB/T 711
 GB/T 712
 GB/T 713.2

GB/T 713.3

GB/T 713.7

GB/T 714

GB/T 3274

GB/T 3280

GB/T 4237

GB/T 4334

GB/T 6396

GB/T 7734

GB/T 8170

GB/T 8651

GB/T 13305

GB/T 17505

GB/T 17897

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Stainless steel clad plate, sheet and strip

A composite material consisting of a carbon steel, low-alloy steel, or alloy steel base metal (3.3) integrally and continuously clad on one or both sides with a layer of stainless steel of a specified thickness, produced using an explosion method or other techniques.

3.2 Cladding metal

The stainless steel layer of a clad steel plate that comes into contact with the working medium and the atmosphere.

NOTE. It is also commonly referred to as multilayer.

3.3 Base metal

The carbon steel, low-alloy steel, or alloy steel in a clad steel plate that primarily bears the structural load.

NOTE. It is also commonly referred to as the base layer.

3.4 Explosion compounding method

A method for achieving the weld-bonding of the cladding metal (3.2) and the base metal (3.3) during an explosion process.

3.5 Rolled compounding method

A method for achieving metallurgical bonding between the cladding metal (3.2) and the base metal (3.3) during the rolling process.

3.6 Exploded rolling method

A method for achieving metallurgical bonding between the cladding metal (3.2) and the base metal (3.3) during the rolling process.

3.7 Compound contact interface

The interface between the cladding metal (3.2) and the base metal (3.3) of the clad steel plate.

3.8 Union rate

The percentage of the total interface area where the cladding metal (3.2) and the base metal (3.3) of the clad steel plate are metallurgically bonded.

3.9 Patched welding

A process involving the removal of the unbonded portion of the cladding metal (3.2) in accordance with specific requirements, the overlay welding of stainless steel onto the cladding metal (3.2), and subsequent treatments to ensure the cladding metal (3.2) of the clad steel plate retains its original properties.

4.1 Classification levels and codes

The classification levels and codes for clad plates, sheets (strips), based on manufacturing method and application, are shown in Table 1.

Table 1 -- Classification levels and codes

4.2 Marking

The product designation shall be composed in the following order. cladding metal designation, base metal designation, dimensions, classification level code, and the number of this document. Example 1.

A level 2 clad plate, sheet (strip) produced by the rolled compounding method - featuring a

1 mm thick S32168 cladding layer and a 16 mm thick Q345R base layer, with dimensions of 2500 mm in width and 8000 mm in length - is designated as.

(S32168+Q345R) - (1+16) x 2500 x 8000-R2-GB/T 8165-2025. Example 2.

A level 1 explosion-bonded clad plate, sheet (strip) with a 3 mm thick S30408 cladding layer and a 20 mm thick Q345R base layer, measuring 2500 mm in width and 8000 mm in length, is designated as. (S30408+Q345R) - (3+20) x 2500 x 8000-B1- GB/T 8165 -2025. Example 3.

A level 2 clad plate, sheet (strip) produced by the rolled compounding method - featuring a 2 mm thick S31603 cladding layer on one side, a 20 mm thick Q345R base layer, and a 0.8 mm thick S30408 cladding layer on the other side, with dimensions of 2000 mm in width and 6000 mm in length - is designated as. (S31603+Q345R+S30408) - (2+20+0.8) x 2000 x 6000-R2-GB/T 8165-2025. Example 4.

A level 2 clad plate, sheet (strip) produced via the explosion-rolling composite process - featuring a 2 mm thick S31603 cladding layer on one side, a 20 mm thick Q345R base layer, and a 0.5 mm thick S30408 cladding layer on the other side, with dimensions of 2000 mm in width and 6000 mm in length - is designated as. (S31603 + Q345R + S30408) - (2 + 20 + 0.5) x 2000 x 6000-BR2-GB/T 8165-2025.

5.1 Manufacturing method

5.1.1 The stainless steel cladding metal of clad plates, sheets (strips) can be bonded to one or both sides of carbon steel, low-alloy steel, or alloy steel substrates.

5.1.2 Clad plates, sheets (strips) can be manufactured using explosion compounding

method, rolled compounding method, or exploded rolling method.

5.2.1 Clad plates, sheets (strips) are delivered in the heat-treated condition, or alternatively in the hot-rolled, normalized-rolled, or thermo-mechanically rolled condition.

5.2.2 Upon the purchaser's request and as specified in the contract, the surface of the cladding metal may undergo treatments such as grinding, polishing, or pickling.

6 Ordering contents

Contracts or orders placed in accordance with this document shall include the following information.

- a) Reference to this document;
- b) Product name;