



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

GB 50683-2011

**Code for Acceptance of Field Equipment, Industrial Pipe
Welding Construction Quality
(English Translation)**

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1 General Provisions

1.0.1 This code was formulated in order to unify the acceptance of welding

1.0.1 This code was formulated in order to unify the acceptance of welding

quality acceptance of field equipment and industrial pipelines and strengthen the engineering quality management.

1.0.2 This code is applicable to the construction quality acceptance of the welding engineering of the metallic materials such as carbon steel, alloy steel, aluminium and aluminium alloy, copper and copper alloy, nickel and nickel alloy, titanium and titanium alloy as well as zirconium and zirconium alloy.

1.0.3 The codes shall be applied together with "Code for Construction of Field Equipment, Industrial Pipe Welding Engineering" GB 50236.

1.0.4 The requirements for the construction quality acceptance of engineering technical document and contract agreement document shall not be less than those specified in this code.

1.0.5 Except meeting this code, the acceptance of welding engineering

construction quality shall also meet the requirements of the current relevant national standards.

2 Terms

2.0.1 100 % examination the entire examination of a specific item in a specified examination batch

2.0.2 Random sampling examination

The examination is conducted on a specific item by a certain proportion of random sampling.

2.0.3 Local sampling examination

A specific part of examination is conducted for a specific item on every piece in a specific examination batch.

3.2 Acceptance of Construction Quality

3.2.1

The quality acceptance of sub-item project shall meet the following requirements.

3.2.3 Where the welding engineering does not meet the requirements of this

code, it shall be processed according to the following requirements.

3.2.4 The weld engineering without acceptance qualification shall not be put into application

3.3 Procedure and Organization for Acceptance of Construction Quality

3.3.1

The sub-item project qualify acceptance shall be conducted based on the self-examination qualification of construction organization and quality acceptance records of sub-item project shall be filled by the project professional quality inspector of the construction organization.

4.0.1 Before the application of base metal, the examination and acceptance shall

be conducted according to the requirements of design document; the material, specification and appearance quality shall meet the requirements of the product standard and design document of base metal. The material marker shall be clear and complete and shall be traced back to the product quality certification.

4.0.2 Before the application of the welding materials, the visual quality,

proof documents, external packing and packing mark shall be examined.

4.0.3 The welding material shall be baked according to the specification before application and shall be kept dry in application process and the baking conditions shall meet the requirements of welding materials directions and relevant technical document.

5.0.1 Where nondestructive testing is required for the groove face in the design

document, magnetic particle testing or penetrant testing shall be conducted.

Groove face quality shall not be lower than Class I as specified in the current professional standard "Nondestructive Testing of Pressure Equipment" JB/T 4730.

Examination quantity. it shall meet the requirements of the design document.

5.0.3 Where the pipe butt weld is assembled, the in-wall misalignment shall

meet the requirements of Table 5.0.3.

5.0.5 Where the butt weld pieces with unequal thickness are assembled, the end surface of thin piece shall be located within that of the thick piece. Where the in-wall misalignment is greater than those specified in Articles 5.0.3 and 5.0.4 or the outer wall misalignment is greater than 3 mm, the groove dimension after processing and finishing shall meet the requirements of Figure 5.0.5.

5.0.6 The position of weld seam of weldment shall meet the requirements of the design documents and the following specifications.

5.0.7 The primary structure dimension and shape of weldment, the form and dimension of groove and the quality of the groove surface shall meet the following requirements.

5.0.8 Before welding, the cleaning quality of the groove surface and the inner

and outer surface on both sides of the groove shall meet the requirements of Table 5.0.8.

6 Welding I Dominant items

6.0.1

As for weld seam with impact ductility requirement, the weld heat input shall be measured in welding and shall be recorded. The weld heat input shall meet the requirements of design document and welding process documents.

Examination quantity. all products.

6.0.2

As for the weld seam specified for intermediate nondestructive testing, the nondestructive testing shall be conducted after the visual examination qualification and the weld quality shall meet the relevant requirements of Chapter 8 in this code.

6.0.3

As for the weld seam with specified requirements for the inter-pass temperature, the inter-pass temperature shall meet the requirements of welding process documents. As for the weldment with the requirements for preheating before welding, the inter-pass temperature shall fall in the scope of the specified preheating temperature.

6.0.4

As for the weld seam with the requirement of back chipping on the rear surface, visual examination shall be conducted after back chipping and the weld seam after back chipping shall expose metallic luster and the groove shape shall be regular and tidy as well as meet the requirements of welding process.

6.0.6

After the tack weld, the slag shall be cleared for examination, and the dimension and quality of tack weld shall meet the requirements of the current national standard "Code for Construction of Field Equipment, Industrial Pipe Welding Engineering" GB 50236 and the requirements of welding process document.

7 Heat Treatment After Welding

I Dominant items

7.0.1

The post-weld heat treatment parameters of the field equipment and pipes shall meet the requirements of design document, the current national standard "Code for Construction of Field Equipment, Industrial Pipe Welding Engineering" GB 50236, heat treatment process document and the following requirements.