

JB

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

JB/T 4734-2002

Replacing JB/T 9071-1999

Aluminium welded vessels

铝制焊接容器

(English Translation)

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1 Scope

This standard specifies the requirements for the design, manufacturing, inspection and acceptance of aluminium welded vessels (including vessels with such components as enclosure made of aluminium or line with aluminium).

1.1

This standard is applicable to the atmospheric pressure vessels and the pressure vessels with design pressure no larger than 8MPa.

1.2

The design temperature range applicable to this standard shall be determined according to the allowable service temperature of aluminium products.

1.3

This standard is not applicable to the following various vessels .

- a) Directly-fired vessels;
- b) Vessels in the nuclear-energy plant;
- c) Compression vessel chambers as the component parts of such motive mechanical equipments with rotation or back and forward motion (such as centrifugal pump shell, cylinder body of reciprocating pump, cylinder body of compressor, cylinder body of refrigerating machine, case of blower, wobbling drum of centrifuge, etc .);
- d) Frequently-transported vessels;
- e) Vessels with internal diameter be less than 150mm (means width, height or diagonal line for the noncircular section, such as the diagonal line of rectangular or the major axis of ellipse);
- f) Vessels requiring fatigue analysis.

1.4

For the compression components with structural dimension not being determined by this standard, the following methods may be adopted in the design of these compression components, but they shall be evaluated and approved by the National Technical Committee on Pressure Vessels of

Standardization Administration of China.

- Stress analysis , including finite element method;
- Replication experiment analysis (such as experimental stress analysis and replication hydraulic pressure test);
- Comparison empirical design by using such comparable structures that have been in service.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. For dated reference, subsequent amendments to , or revisions of, any of these publications do not apply. However, all parties coming to an agreement according to this standard are encouraged to study whether the latest edition of these documents is applicable. For undated references, the latest edition of the normative document is applicable to this standard.

GB/T 8063 "Designation of Cast Nonferrous Metals and Their Alloys"

GB/T 943 8-1999 "Aluminium Alloy Castings"

GB/T 10571 - 1989 "Wrought Aluminium and Aluminium Alloy-Welded Tube"

GB/T 10858 - 1989 "Aluminum and Aluminium Alloy Welding Rods and Wires"

GB 12337 " Steel Spherical Tanks"

GB/T 164 74 "Wrought Aluminium and Aluminium Alloy-Designation System"

GB/T 16475 "Temper Designation System for Wrought Aluminium and Aluminium Alloy"

GB/T 16865 "Test Pieces for Tensile Test for Wrought Aluminum and Magnesium Alloy Products"

JB/T 4 700 "Type and Specification for Pressure Vessel Flanges"

JB/T 4 701 "A-type Socket-weld Flange"

JB/T 4702 "B-type Socket-weld Flange"

JB/T 4 703 "Welding Neck Flange"

JB/T 4 704 "Nonmetallic Gaskets"

JB/T 4 705 "Spiral Wound Gaskets"

JB/T 4 706 "Double-jacketed Gaskets"

JB/T 4 707 "Stud Bolts"

JB 4 708 "Welding Procedure Qualification for Steel Pressure Vessels"

JB/T 4 709 "Welding Specification for Steel Pressure Vessels"

JB/T 4 710 "Steel Vertical Vessels Supported by Skirt"

JB 4730 "Nondestructive Testing of Pressure Vessels"

JB/T 4735 "Steel Welded Atmospheric Pressure Vessels"

JB/T 4744 "Mechanical Property Tests of Product Welded Test Coupons for Steel Pressure Vessels"

JB/T 4 746 "Formed Heads for Steel Pressure Vessels "

"Technologic Supervision Regulations on Safety of Pressure Vessels" (Issued by the former State Bureau of Quality and Technical Supervision in 1999)

"Examination and Administrative Rules for Welders Specializing in Boilers and Pressure Vessels and Pressure Pipes" (Printed and Distributed by the General Administration of Quality Supervision,

Inspection and Quarantine in 2002)

3.1

The design, manufacturing, inspection and acceptance of the vessels shall not only be in accordance with those specified in this standard, but also comply with the relevant laws and decrees and regulations issued by the State.

3.2.1.1

The design and manufacturing organizations of the vessels shall be with sound quality management system. The design organization of pressure vessel shall hold the corresponding pressure vessel design approval letter and the manufacturing organization possess hold the pressure vessel manufacturing license.

3.2.1.2

The design and manufacturing of pressure vessels shall be under the supervision of the pressure vessel safety supervision mechanism.

3.2.2.1.1

The design organization shall be responsible for the accuracy and integrity of the design document.

3.2.2.1.2

The vessel design documents shall at least include the design calculation book and design drawing.

3.2.2.1.3

The general design drawing of design pressure vessel shall be stamped with the seal for pressure vessel design qualification.

3.2.2.2.1

The manufacturing organization shall manufacture in accordance with the requirements of the design drawing and can modify the original design only with the approval of the original design organization.

3.2.2.2.2

The inspection department of the manufacturing organization shall carry out various specific inspections and tests for the vessels according to the requirements of this standard and drawings during the manufacturing process or after the completion of vessels, propose