
Industry Standard of the People's Republic of China

JB 4708—2000

JB / T 4709—2000

JB 4744—2000

**Welding Procedure Qualification
For Steel Pressure Vessels
Welding Specification
For Steel Pressure Vessels
Mechanical Property Tests of Product
Welded Test Coupons
For Steel Pressure Vessels**

Issued on August 15, 2000

Implemented on October 1, 2000

**Issued by State Bureau of Machine Building Industry and
State Bureau of Petroleum and Chemical Industry**

Notice of Issuing Four Industry Standards Such as “Welding Procedure Qualification for Steel Pressure Vessels” etc..

Guojiguan (2002)401

To units concerned,

According to the examination and approval procedure of industry standard for pressure vessels, which is stipulated by State Bureau of Quality and Technical Supervision, we issue the four industry standards such as “Welding Procedure Qualification for Steel Pressure Vessels” etc.. The number and name of the standards are as follows:

Mandatory standards:

- JB 4708--2000 Welding Procedure Qualification for Steel Pressure Vessels (replacing JB 4708—1992)
- JB 4710—2000 Steel Tower Vessels (replacing JB 4710—1992)
- JB 4744—2000 Mechanical Property Tests of Product Welded Test Coupons for Steel Pressure Vessels
(replacing Annex E of GB 150—1998)

Voluntary standards:

- JB / T 4709--2000 Welding Specification for Steel Pressure Vessels
(replacing JB / T 4709—1992)

The above standards come into effect on October 1, 2000, the publishing and issuing of which are to be organized and completed on time by the China National Standardization Committee on Pressure Vessels.

State Bureau of Machine Building Industry
State Bureau of Petroleum and Chemical Industry

Dated on August 15, 2000

Contents JB 4708—2000 Welding Procedure Qualification for Steel Pressure Vessels

Foreword	3
1. Scope	5
2. Normative Reference	5
3. Terminology	6
4. General Rules	6
5. Rules for Welding Procedure Qualification for Butt welds and Fillet Welds	7
6. Rules of Procedure Qualification for the anti-rusting and build-up Welding	16
7. Test Requirements and Result Evaluation	17
Annex A (for the Standards) The Welding Procedure Qualification of Stainless Steel and Compound Steel	27
Annex B (for the Recommends) Welding Process Instructions and Recommended Format for The Table of Welding Procedure Qualification	28
1.Scope	38
2.Normative Reference	38
3. Welding Materials	38
4. Welding Procedure Qualification and Welders	39
5. Preparation Before Welding	39
6. Welding	52
7. Post Heating	53
8. Heat Treatment After WeldingD	53
9. Services After Welding	55
10. Welding Test	56
Annex A(Standard Appendiox) Welding Specification for The Stainless Steel and Compound Steel	57
Annex B(Recommended Annex) The Recommended Format for Welding Specification Table	61
Jb 4744—2000 Mechanical Property Tests of Product Welded Test Coupons For Steel Pressure Vessels	
Preface	69
1 Scope	70
2 Quoted Standards	70
3 Mark	70
4 Requirements on the Preparation of Product Welded Test Coupons	71
5 Preparation of the specimens for Product Welded Test Coupons	71
6 Tensile Test	72
7 Bending Test	73
8 Impact Test	74
9 Retest	75

JB 4708—2000

Welding Procedure Qualification For Steel Pressure Vessels

Foreword

This Standard is the revision of JB 4708-1992.

This standard is changed based on the experiences obtained after the JB 4708-1992 came into effect and on the reference to the similar international standards in recent years.

1. Add the clauses of Terminology and Annex A-the Welding Procedure Qualification of Stainless Compound Steel.

2. Repeal “Annex B Instruction for the use of standards” in JB 4708-1992. The contents concerning the technologies such as the steel qualification and the secondary factor, which are not listed in the GB 150, are written into the text.

3. Add the requirements for type test and repeal the qualification clauses and the specimen drawings concerning the combined welds in Chapter 3, Chapter 4 and Chapter 5 of the JB 4708-1992.

4. Chapter 4 of JB 4708-1992 is definitely divided into two parts (Chapter 5 and Chapter 6) in this standards including i.e., Chapter 5: “Welding Procedure Qualification for Butt welds and Fillet Welds” and Chapter 6: “Rules of Procedure Qualification For The Anti-Rusting and Build-Up Welding” with the clause order rectified and the technologies changed as follows:

- (a) Add and cancel some steel grades and set the type and group for the added steel grades according to the changes of GB 150-1998.
 - (b) Redefine the type of heat treatment after welding and add the re-appraisal clauses for conducting impact test.
 - (c) Modify the effective scope of the qualified specimen thickness applicable to the weldment thickness.
 - (d) Add the clauses for the specimen thickness and for the applicable weldment thickness when conducting the specified impact tests and performing the qualification of the partially through welding weldments and butt welding weldment with different thickness.
 - (e) Modify the clauses for specimen thickness and the applicable weldment thickness when performing rewelding, repairing welding and back welding.
 - (f) Table 1 changes some factors on Welding Procedure Qualification.
5. Chapter 6 (Chapter 4 of JB 4708—1992) rearranges the corrosion resisting build-up welding and welding qualification terms into Table 9 and changes some welding terms.
6. Chapter 7 (Chapter 5 of JB 4708—1992) has the following main changes:
- (a) Add the specifications on the size of the anti-corrosion build-up welding specimens.
 - (b) Modify the Qualification Specifications for the aspect test and NDI of the butt welding specimen and the aspect test of the fillet welding specimen.
 - (c) Add the test items and specimen numbers when $T < 1.5\text{mm}$ and modify the note for the Table.
 - (d) Modify the clauses of the tensile specimen used for making multiple slices.
 - (e) Modify the bending specimen processing, test method and qualification specifications.
 - (f) Modify the Qualification Specifications for the impact test.
 - (g) Provide the basis of Qualification Specifications for the mechanical property tests and bending property tests of welded joints of different types by the changes of items (e) and (f) .
 - (h) Add the stipulate map for making the bending specimen of corrosion resisting build-up welding, modify the stipulate map for analyzing and sampling of the chemical components of build-up welded metal and add the measurement of the smallest thickness for overlay qualification.

7. Annex B changes according to the changes of the contents of the text.

This standard replaces JB 4708-1992 from the date of its implementation.

Annex A of this standard is the standard Annex.

Annex B of this standard is the recommended Annex.

This standard is put forward and completed by China National Standardization Committee on Pressure Vessels.

JB 4708—2000

This standard is drafted by: Hefei GM Machinery Research Institute and the Safety Inspection Bureau for Boiler and Pressure Vessel of State Bureau of Quality and Technical Supervision.

This standard is mainly drafted by: Ge Zhaowen, Zhang Jianrong

The units and personnel in charge of the formulation and edition of this standard:

Consulting firm of Sinopec: Shou Binan and Yang Guoyi

Safety Inspection Bureau for Boiler and Pressure Vessel of State Bureau of Quality and Technical Supervision:
Gao Jixuan

China National General Machinery Engineering Corp.: **Zhang Zhongkao**

China Chemical Reconnaissance Design Association: Liang Zhixun

Hefei GM Machinery Research Institute: Li Jingchen

Liangning Bureau of Quality and Technical Supervision: Wang Jun

This standard is issued first in April of 1992

This standard is to be explained by China National Standardization Committee on Pressure Vessels.

Welding Procedure Qualification For Steel Pressure Vessels

Replacing JB 4708--1992

Scope

This standard stipulates the rules of welding procedure qualification for steel pressure vessels, test method and qualification specifications.

This Standard is applied to the welding procedure qualification for gas welding, arc welding by electrodes, hidden arc welding, MIG Welding, gas tungsten-arc welding, electroslag welding, corrosion resisting build-up welding, etc. of the steel procedure vessels.

2. Normative Reference

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

GB 150 1998 Steel Pressure Vessels

GB / T 228 1987 Metal Tensile Test Method

GB / T 229—1994 Metal Charpy Nick Impact Test Method

GB / T 232 1988 Metal Bending Test Method

GB 713 1997 Steel Plate for Boilers

GB/T 912—1989 Hot Rolled Sheet Steel and Steel Band Made of Carbon Constructional Steel and Low Alloy Constructional Steel

GB 3087 1982 Seamless Steel Pipe for Low/Medium Pressure Boilers

GB / T 3274 1988 Hot Rolled Sheet Steel and Steel Band Made of Carbon Constructional Steel and Low Alloy Constructional Steel

GB / T 3280—1992 Stainless Steel Cold-Rolled Plate

GB 3531 1996 Low Alloy Steel Plate for Low-Temperature Pressure Vessel (Including No. 1 Modification Note)

GB / T 4237 1992 Hot Rolled Stainless Steel Plate

GB 5310---1995 Seamless Steel Pipe for High-Pressure Boilers

GB 6479—1986 Steel High-Pressure Seamless Pipe For Fertilizer Equipments

GB 6654 1996 Steel Plate For Pressure Vessels (Including The No. 1 and No. 2 Modification Notes)

GB / T 8163 1987 Seamless Steel Pipe Used For Conveying Liquids

GB 9948 1988 Seamless Steel Pipe For Petroleum Cracking

GB 13296 1991 Seamless Steel Pipe of Stainless Steel For Heat Exchanger of Boiler

GB / T 14976 1994 Seamless Steel Pipe of Stainless Steel Used For Transporting The Liquid

JB 4726—2000 Carbon Steel and Forgings of Low Alloy Steel For Pressure Vessels

JB 4727—2000 Forgings of Low Alloy Steel for Low-Temperature Pressure Vessels

JB 4728—2000 Forgings of Stainless Steel For Pressure Vessels

JB 4730—1994 Nondestructive Inspection of Pressure Vessels

Approved By State Bureau of Machinery Industry and

State Bureau of Petroleum and Chemical Industry

Implemented on October 1, 2000



北京文心雕语翻译有限公司
Beijing Lancarver Translation Inc.

完整版本请在线下单

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email: info@lancarver.com

<http://www.lancarver.com>

线下付款方式：

1. 对公账户：

单位名称：北京文心雕语翻译有限公司

开户行：中国工商银行北京清河镇支行

账 号：0200 1486 0900 0006 131

2. 支付宝账户：info@lancarver.com

注：付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！

