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Replacing GB/T 2652-2008

Destructive Tests on Welds in Metallic Materials – Longitudinal Tensile Test on Weld Metal in Fusion Welded Joints

(ISO 5178:2019, IDT)

金属材料焊缝破坏性试验 熔化焊接头焊缝金属纵向拉伸试验

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 *Directives for Standardization – Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

This Document replaced GB/T 2652-2008 *Tensile Test Methods on Weld and Deposited Metal*. Compared with GB/T 2652-2008, the major technical changes of this Document are as follows besides the structural adjustments and editorial modifications:

--- Change the requirements of "Scope" (see Clause 1 of this Document, Clause 1 of the 2008 Edition);

--- Add the requirements for continuously increasing the test force (see Clause 5 of this Edition);

--- Add marking requirements (see 6.2 of this Edition);

--- Change the processing requirements of "other metal materials" (see 6.4.3 of this Edition; 5.4.3 of the 2008 Edition);

--- Change the tolerance requirements of the surface quality of the specimen (see 6.7 of this Edition; 5.5.1, 5.7 of the 2008 Edition);

--- Change the requirements for test report (see Clause 9 of this Edition; Clause 8 of the 2008 Edition).

This Document equivalently adopts ISO 5178:2019 *Destructive Tests on Welds in Metallic Materials – Longitudinal Tensile Test on Weld Metal in Fusion Welded Joints*.

Please note some contents of this Document may involve patents. The issuing agency of this Document shall not assume the responsibility to identify these patents.

This Document was proposed by China Machinery Industry Federation.

This Document shall be under the jurisdiction of National Technical Committee on Welding of Standardization Administration of China (SAC/TC 55).

Drafting organizations of this Document: Shanghai Research Institute of Materials; Harbin Welding Institute Co., Ltd.; Baoji Petroleum Steel Pipe Co., Ltd.; Xiamen Chengcan Industrial Equipment Co., Ltd.; Shenzhen Jinbofang Laser Technology Co., Ltd.; Shanghai Institute of Special Equipment Inspection and Technical Research; Jiangsu Province Special Equipment Safety Supervision and Inspection Institute; China Machine Intelligent Equipment Innovation Research Institute (Ningbo) Co., Ltd.; Taiyuan Heavy Industry Co., Ltd.; and Guangdong Foreweld Co., Ltd.

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Destructive Tests on Welds in Metallic Materials – Longitudinal Tensile Test on Weld Metal in Fusion Welded Joints

1 Scope

This Document specifies the specimen dimensions and test procedure for the longitudinal tensile test of circular cross-section specimens of fusion welded joint weld metal to determine its mechanical properties.

This Document is applicable to all kinds of metal material products manufactured by fusion welding methods and whose joint dimensions can be made into circular cross-section specimens according to ISO 6892-1.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

ISO 6892-1 Metallic Materials – Tensile Testing – Part 1: Method of Test at Room Temperature

NOTE: GB/T 228.1-2021 Metallic Materials – Tensile Testing – Part 1: Method of Test at Room Temperature (ISO 6892-1:2019, MOD)

3 Terms and Definitions

For the purposes of this Document, there are no terms and definitions apply.

4 Symbols and Abbreviations

The symbols and abbreviations used in the longitudinal tensile test shall be in accordance with the provisions of ISO 6892-1.

machine.

6.7 Surface quality

The specimen tolerance shall comply with the provisions of ISO 6892-1.

Specimens shall be free from strain hardening or overheating.

7 Test Procedure

The test force shall be applied to the specimen in a continuous and gradual manner according to the provisions of ISO 6892-1.

8 Test Results

8.1 General requirements

The test results shall be determined in accordance with the provisions of ISO 6892-1.

8.2 Fracture surface inspection

After the specimen breaks, the surface of the fracture shall be inspected; and any flaws on the fracture that may adversely affect the test shall be recorded in the report, including the type, size and quantity of the flaws. If white spots appear, they shall be recorded and only the central area of the white spots shall be considered as a flaw.

9 Test Report

In addition to the content required by ISO 6892-1, the test report shall also include the following content:

a) The reference number of this Document, such as GB/T 2652-2022;

b) The location of the specimen, if necessary, attach a schematic diagram (see Figures 1 and 2);

c) The test temperature when the test is not carried out at room temperature;

d) Type, size and number of the observed flaws;

e) Sample diameter, d_0.

Appendix A gives an example of a typical test report. If necessary, the specified plastic elongation strength R_p and its corresponding test force F_p in Table A.1 can be replaced by the

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