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THE PEOPLE'S REPUBLIC OF CHINA
中华人民共和国国家标准**

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GB/T 7735-2004

Replace GB/T 7735-1995

**Steel tubes - The inspection Method On
Eddy Current Test**

钢管涡流探伤检验方法

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**Jointly by the State Administration for Quality Supervision and Inspection and
Quarantine (AQSIQ) and the Standardization Administration of
China**

Foreword

This standard adopts ISO 9304: 1989 "Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes; eddy current testing for the detection of imperfections" (English edition) by amendment.

This standard replaces GB/T 7735-1995 "Steel tubes - The inspection method on eddy current test".

Redrafted on the base of ISO 9304: 1989, this standard has the following technical differences from ISO 9304: 1989:

Chapter (Article)	Difference
2 Normative references	YB/T 145 "Steel tubes-Measurement method of sizes of standard artificial defect for flaw detection" and YB/T 4083 "Measurement method of comprehensive properties for automatic eddy current flaw detection system for steel tubes" replace ISO 235 "Parallel shank jobber and stub series drills and Morse taper shank drills" and ISO 4200 "Plain end steel tubes, welded and seamless - General tables of dimensions and masses per unit length".
4 Test theory	Add defect determination and comparison in test method and theory
6.5.3 Verification	Add the requirements in the dimension and shape measurement method of borehole and longitudinal groove in artificial defect
7 Test equipment	Add the content about the configuration of steel tube eddy current test system.

In order to make it convenient for use, this standard makes the following editing modification:

- "International Standard" is revised as "this standard";
- "," used as decimal point is replaced with ".";
- cancel the foreword in the "international standard".

The Annex A of this standard is informative.

This standard is proposed by China Iron & Steel Association.

This standard is under the jurisdiction of the National Technical Committee for Standardization of Steel.

Drafting organizations: Baoshan Steel Corporation - Shanghai Steel Tube Co., Ltd., Eddysun (Xiamen) Electronic Co., Ltd., Fuzhou Qing'an Testing Technical Services Ltd., Guangdong Electric Power Research Institute, China Metallurgical Information and Standardization Research Institute

Chief drafting staffs: Cai Yaping, Lin Junming, Zhao Fenglan, Lin Jiedong, Huang Ying, Luo Yuqing, Han Ming

All previously replaced editions hereof are as:

- GB 7735—1987, GB/T 7735—1995.

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Steel tubes - The Inspection Method on Eddy Current Test

1 Scope

This standard specifies test theory, test requirements, test method, standard sample, test equipment, test equipment operation and adjustment, and test result of eddy current test for seamless steel tube and welded steel tube (except submerged arc welded tube).

This standard is applicable to the eddy current test for steel tubes whose outer diameter is not less than 4 mm.

The acceptance level arranged in this standard comes with Level A and Level B (see Table 1 and Table 2).

2 Normative References

Provisions of the following documents, through reference in this standard, constitute provisions of this standard. For dated references, all subsequent modifications (excluding correction contents) or revisions are not applicable to this standard. However, all parties coming to an agreement according to this standard are encouraged to study whether the latest editions of these documents are applicable. For undated references, the latest editions of the normative documents are applicable to this standard.

YB/T 145 "Steel tubes-Measurement method of sizes of standard artificial defect for flaw detection"

YB/T 4083 "Measurement method of comprehensive properties for automatic eddy current flaw detection system for steel tubes"

3 Test Theory

3.1 Eddy current test is based on electromagnetic induction principle. When a steel tube is inserted through a coil energized with A.C. current, the discontinuity (like defect) of steel tube body will result in the change of eddy current field, and the one on or adjacent to the surface has great effect, which cause the change of coil impedance or induced voltage. Above change can indicate the information of tube body or discontinuity.

3.2 The judgment on the test result in this standard refers to the amplitude value comparison on the standard artificial defect and the natural defect display signal. Standard samples are used for setting and calibration for eddy test equipment.

4 Test Requirements

4.1 The eddy current test (inspection) for steel tube is generally conducted after all tube production processing is completed.

4.2 The steel tube eddy current test shall be operated by the personnel holding the eddy current test technology qualification certificate authorized by the related department, and supervised and issued the report by the personnel with level II or higher level qualification certificate designated by the supply party. The test (inspection), if needed, shall be approved



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