NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 36915-2019

Steel wire and wire products - General test methods

Issued on: March 25, 2019 **Implemented on: February 1, 2020**

Issued by: SAMR; SAC

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify and use ISO 22034-1:2007

"Steel wire and wire products - Part 1: General test methods".

As compared with ISO 22034-1:2007, this standard has structural adjustments.

Appendix A lists the comparison of clause numbers between this standard and ISO 22034-1:2007.

There are technical differences between this standard and ISO 22034-1:2007. The terms involved in these differences have been marked by a vertical single line (|) in the blank position of the outer margin. Appendix B gives the corresponding technical differences and their causes.

This standard also made the following editorial changes:

- CHANGE the standard name to "Steel wire and wire products - General test methods".

This standard was proposed by the China Iron and Steel Association.

This standard shall be under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC 183).

Drafting organizations of this standard: National Wire Rope Product Quality Supervision and Inspection Center, Guangdong Jianlang Hardware Products Co., Ltd., Jiangsu Shenyuan Group Co., Ltd., Shandong Daye Co., Ltd., Nantong Songcheng Industrial Co., Ltd., Metallurgical Industry Information Standards Institute.

1 Scope

This standard specifies the tensile test, torsion test, bending test, winding test, compression test, acid-leaching test, hardness test, hardenability test, fatigue test, ring-shape measurement, artificial aging, stress-relaxation test, microstructure test, decarburization layer test, grain size test, segregation test, non-metallic inclusion test, non-destructive testing, chemical analysis, zinc-layer quality, retest, other general test methods of steel wire and wire products.

This standard applies to cold-worked steel wire with constant cross-section (circular or profiled), annealed steel wire, quenched and tempered steel wire, coated steel wire, etc.

2 Normative references

The following documents are essential to the application of 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) are applicable to this standard.

GB/T 224 Determination of depth of decarburization of steels (GB/T 224-2008, ISO 3887:2003, MOD)

GB/T 228.1 Metallic materials - Tensile testing - Part 1: Method of test at room temperature (GB/T 228.1-2010, ISO 6892-1:2009, MOD)

GB/T 230.1 Metallic materials - Rockwell hardness test - Part 1: Test method (GB/T 230.1-2018, ISO 6508-1:2016, MOD)

GB/T 231.1 Metallic materials-Brinell hardness test - Part 1: Test method (GB/T 231.1-2018, ISO 6506-1:2014, MOD)

GB/T 232 Metallic materials - Bend test (GB/T 232-2010, ISO 7438:2005, MOD)

GB/T 238 Metallic materials - Wire - Reverse bend test (GB/T 238-2013, ISO 7801: 1984, MOD)

GB/T 239.1 Metallic materials - Wire - Part 1: Simple torsion test (GB/T 239.1-2012, ISO 7800:2003, MOD)

GB/T 239.2 Metallic materials - Wire - Part 2: Reverse torsion test (GB/T 239.2-2012, ISO 9649:1990, MOD)

GB/T 1839 Test method for gravimetric determination of the mass per unit area of galvanized coatings on steel products (GB/T 1839-2008, ISO 1460:1992, MOD)

GB/T 2103 General requirements for acceptance, packing, marking and quality certification of steel wire

GB/T 2972 Test method for uniformity of zinc coating on zinc-coated steel wire by the copper sulphate dip (GB/T 2972-2016, ISO 7989-2:2007, NEQ)

GB/T 2975 Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (GB/T 2975-2018, ISO 377:2017, MOD)

GB/T 2976 Metallic materials - Wire - Wrapping test (GB/T 2976-2004, ISO 7802:1983, IDT)

GB/T 4337 Metallic materials - Fatigue testing - Rotating bar bending method (GB/T 4337-2015, ISO 1143:2010, MOD)

GB/T 4340.1 Metallic materials - Vickers hardness test - Part 1: Test method (GB/T 4340.1-2009, ISO 6507-1: 2005, MOD)

GB/T 6394 Metal - Methods for estimating the average grain size

GB/T 10561 Steel - Determination of Content of Nonmetallic Inclusions - Micrographic Method Using Standards Diagrams (GB/T 10561-2005, ISO 4967:1998, IDT)

GB/T 13298 Inspection methods of microstructure for metals

GB/T 21839 Steel for prestressed concrete - Test methods (GB/T 21839-2008, ISO 15630-3:2002, MOD)

YB/T 4413 Metallographic evaluation method for center segregation of high-carbon steel wire rod

3.1 General requirements

The tensile test shall be carried out in accordance with GB/T 228.1. Determine the mechanical properties such as tensile strength, yield strength, elongation, percentage reduction of area, modulus of elasticity of the steel wire.

3.2 Preparation of specimens

The sample can be made according to GB/T 2975. Generally, the full section is used, that is, the part where the steel wire is not machined. When the specimen is straightened, damage should be avoided.

3.3 Cross-sectional area of specimen