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GB/T 8358-2014

Replacing GB/T 8358-2006

Steel Wire Rope –

Determination of Measured Breaking Force

(ISO 3108:1974, Steel Wire Rope for General Purposes – Determination of Actual Breaking Load, NEQ)

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Standardization Administration of PRC.

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Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB/T 8358-2006 *Method of Breaking Tensile Test for Steel Wire Ropes*; compared with GB/T 8358-2006, this Standard makes significant changes and supplements in the aspect of the following technical contents:

--- Modify the standard name;

--- Modify the normative references;

--- Delete the terms and definitions on minimum breaking force and measured breaking force;

--- Add the requirement for minimum test length of single-strand steel wire rope;

--- Increase the requirement for minimum test length ≥3000mm of the steel wire rope with nominal diameter d>60mm;

--- Refine the specimen preparation by method of alloy poured socketing and method of ferrule pressing;

--- Increase the clause on the specimen preparation by method of resign pouring;

--- Delete the clause on the specimen preparation by method of direct gripping, and method of wrapping.

--- Adjust the provision on judging whether the test results are effective from “breaking within 1*d* (30mm) away from grip holder” to “breaking within the less one between 6*d* away from grip holder and 50mm”;

--- Delete Appendix A, Appendix B, Appendix C.

This Standard adopts the re-drafting method to prepare in reference to ISO 3108: 1974 *Steel Wire Rope for General Purposes – Determination of Actual Breaking Load*; this Standard is not equivalent to ISO 3108:1974 in the aspect of consistency degree.

This Standard was proposed by China Iron and Steel Industry Association.

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

Drafting organizations of this Standard: National Quality Supervision and Inspection Center for Metal Products, Shanghai Entry-Exit Inspection and Quarantine Bureau, Shanghai Zhengshen Metal Products Co., Ltd., China Metallurgical Information and Standardization Institute, Guizhou Wire Rope Co., Ltd., Juli Sling Co., Ltd., and Wuxi

Steel Wire Rope – Determination of Measured Breaking Force

1 Scope

This Standard specifies the terms and definitions, test principles, specimen preparation, test equipment, test procedures, test report and the like for determination of measured breaking force of steel wire rope.

This Standard is applicable to the determination of measured breaking force of various steel wire ropes. Method of alloy poured socketing is suitable for the steel wire rope with diameter greater than and equal to 6mm or 0.5mm; method of resign pouring and method of ferrule pressing are suitable for all types of steel wire rope; method of direct gripping is suitable for the single-strand steel wire rope, it is also suitable for other structures of steel wire rope; the method of wrapping is suitable for the steel wire rope with diameter no greater than 20mm.

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 document.

GB/T 8706 Steel Wire Rope – Vocabulary, Designation and Classification (GB/T 8706-2006, ISO 17893:2004, IDT)

GB/T 16825.1 Verification of Static Uniaxial Test Machines – Part 1: Tension/Compression Testing Machines – Verification and Calibration of the Force-Measuring System (GB/T 16825.1-2008, ISO 7500-1:2004, IDT)

3 Terms and Definitions

The following terms and definitions stipulated in GB/T 8706 are applicable to this document.

3.1 Force at first wire breaking

The tensile strength of the first wire breaking during the tensile test of the steel wire rope.

specimen surface.

6 Test Equipment

This test can be carried out on any tensile tester that meets the requirements of this Standard.

The tester force-measuring system shall be calibrated as per GB/T 16825.1; its accuracy shall be Class-1 or above.

7 Test Procedures

7.1 Unless otherwise is specified, the test shall be carried out at the room temperature of 10°C~35°C. For the test with strict requirements for the temperature, the test temperature shall be 23°C±5°C.

7.2 Install the specimen onto the tester, and ensure the specimen axis coincides with the axis of the tester grip holder.

7.3 For the tensile specimen by pouring method, when using vertical tensile tester to test, firstly place the specimen into the upper and lower jaw seats, make the specimen suspend into the jaw seats; return the tester to zero, then perform the tensile test.

7.4 For the method of ferrule pressing, directly grip the pressed ferrule specimen into the jaw; then the tensile test can be performed.

7.5 For the method of direct gripping, use appropriate fixture; in necessary, sandwich an aluminum foil stained with emery between specimen and fixture, so that avoid the fixture damage the specimen.

7.6 For the method of wrapping, firstly fix one end of specimen onto the test wheel; then wrap the specimen on the test wheel; stretch the specimen; finally fix the other end of specimen, then the tensile test can be performed.

7.7 Smoothly loading during the test period. When exerting the test force, if it is no greater than 80% minimum breaking force of steel wire rope, the test force can be exerted at a fast speed; if the test force is greater than 80% minimum breaking force of steel wire rope, the test force shall be exerted at a slow speed; the force increasing speed shall not exceed 0.5% minimum breaking force per second.

7.8 Take effective measures during the test period, prevent the rotation of steel wire rope specimen, and avoid the influence on the accuracy of the test results.

7.9 If the steel wire rope specimen is broken within 6*d* or 50mm (take the less

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