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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 31304-2026

Replacing GB/T 31304-2014, GB/T 21073-2007

Epoxy-coated high strength wire stay cable

环氧涂层高强度钢丝拉索

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

This document supersedes GB/T 31304-2014 "Epoxy Coated High-Strength Steel Wire Cable" and GB/T 21073-2007 "Epoxy Coated Seven-Wire Cable".

Compared with GB/T 31304-2014 and GB/T 21073-2007, the main changes in "Prestressed Steel Strand" are structural adjustments and editorial modifications.

The technological changes are as follows.

- The scope has been changed (see Chapter 1, GB/T 31304-2014);
 - The definition of "nominal breaking strength" has been changed (see 3.2, GB/T 31304-2014).
 - The requirements for installing auxiliary components at the embedded pipe location have been changed (see 5.1.1.3, 5.1.2.3 of GB/T 31304-2014);
 - The requirements for coated epoxy-coated steel strands have been deleted (see sections 3.2, 4.1.1, 4.2, and 9.1 of GB/T 21073-2007);
 - The designation method for epoxy-coated seven-wire prestressed steel strand has been changed (see 5.2.2, 4.2 of GB/T 21073-2007);
 - The main technical specifications of the epoxy-coated steel wire have been changed (see 6.1.1.1, 6.1.1 of GB/T 31304-2014);
 - The technical requirements and test methods for high-strength polyester fiber tape have been revised (see 6.1.1.2, 7.1.1.2, and 6.1.2 of GB/T 31304-2014).
- 7.1.2);

---The technical requirements for high-density polyethylene sheathing materials have been revised (see 6.1.1.3, 6.1.3 of GB/T 31304-2014);

---The technical requirements and test methods for anchorages have been revised (see 6.1.1.4 and 7.1.1.4, and 6.1.4 and 7.1.4 of GB/T 31304-2014);

---The compressive strength requirement for cold-cast anchoring filler has been changed (see 6.1.1.5, 6.1.5.2 of GB/T 31304-2014);

---The shrinkage rate requirement for polyethylene heat shrink sleeves has been removed (see section 6.1.6.3 of GB/T 31304-2014);

---The tensile strength and nominal strain at break requirements for polyethylene heat shrink sleeves have been changed (see 6.1.1.6.3, GB/T 31304-2014).

6.1.6.4);

---The requirements for auxiliary components have been changed (see 6.1.1.7, 6.1.7 of GB/T 31304-2014);

---The allowable deviation requirement for the thickness of the hot-extruded polyethylene semi-parallel epoxy steel wire cable sheath has been changed (see 6.2.1.1, GB/T 31304-).

---The requirement for the outer surface of the stylos has been removed (see 6.2.1.2 of GB/T 31304-2014);

---The fatigue performance requirements and fatigue stress amplitude values have been changed (see 6.3.1.3, 6.3.3 of GB/T 31304-2014);

---Added requirements and test methods for the fire resistance performance of hot-extruded polyethylene semi-parallel epoxy steel wire cables (see 6.3.1.5, 7.5);

---The requirements for the mechanical properties of epoxy-coated seven-wire prestressed steel strand have been revised (see 6.3.2.1, 9.2.1 of GB/T 21073-2007);

---The requirement for the number of twisted overlapping layers has been removed (see 6.5.1 of GB/T 31304-2014);

---Change "pre-tensioning" to "over-tensioning" (see 6.4.1.4, 6.5.4 of GB/T 31304-2014);

---Added test methods for the tensile strength and nominal strain at break of polyethylene heat shrink sleeves (see 7.1.1.5.3);

---The method for calculating and measuring the length of hot-extruded polyethylene semi-parallel epoxy-coated steel wire cables has been revised (see 7.2.1, GB/T 31304-).

2014 (7.2)

---The inspection rules have been changed (see Chapter 8 of GB/T 31304-2014);

---The requirements for marking, packaging, transportation, and storage have been

changed (see Chapter 9 of GB/T 31304-2014);

---The technical parameters for hot-extruded polyethylene semi-parallel epoxy coated steel wire cables have been revised (see Appendix B, GB/T 31304-2014).

Appendix A);

---The main dimensions of the hot-extruded polyethylene semi-parallel epoxy coated steel wire cable anchorage have been modified (see Appendix C, GB/T 31304-2014).

Appendix B);

---Added bending fatigue test for hot-extruded polyethylene semi-parallel epoxy coated steel wire cables (see Appendix E);

---Added static water tightness test for hot-extruded polyethylene semi-parallel epoxy coated steel wire cables (see Appendix F);

---Added dynamic water tightness test for hot-extruded polyethylene semi-parallel epoxy coated steel wire cables (see Appendix G).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183).

1 Scope

This document specifies the symbols, structural forms, models and specifications, technical requirements, test methods, and inspection procedures for epoxy-coated high-strength steel wire cables.

Rules, marking, packaging, transportation and storage.

This document applies to high-strength steel wire cables with hot-extruded polyethylene semi-parallel epoxy coating for bridges, mainly including stay cables, suspension cables, and tie rods.

This document also applies to prestressed steel strands used in prestressed engineering, including internally prestressed steel strands, externally prestressed steel strands, and prestressed steel strands used in soil and rock anchoring.

Stressed steel strands and cable strands for cable-stayed bridges, etc.

This document does not apply to epoxy-coated prestressed steel strands of the monofilament spray type.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 228.1 Metallic materials - Tensile testing - Part 1: Test method at room temperature
GB/T 239.1 Metallic materials - Wire - Part 1: Unidirectional torsion test method GB/T 699
High-quality carbon structural steel GB/T 700 Carbon Structural Steel GB/T 1804-2000
General tolerances - Tolerances for linear and angular dimensions without specified
tolerances GB/T 3077 Alloy Structural Steel GB/T 4162-2022 Ultrasonic Testing Method for
Forged and Rolled Steel Bars GB/T 4237 Hot-rolled stainless steel plates and strips GB/T
4336 Determination of Multi-Element Content in Carbon Steel and Medium-Low Alloy Steel
by Spark Discharge Atomic Emission Spectrometry (Conventional Method) GB/T 4956
Measurement of Non-Magnetic Coating Thickness on Magnetic Substrates - Magnetic
Method GB/T 5223 Steel wire for prestressed concrete GB/T 5224 Steel strands for
prestressed concrete GB/T 5796.2 Trapezoidal Threads - Part 2: Diameter and Pitch Series
GB/T 6402-2024 Ultrasonic Testing Methods for Steel Forgings GB/T 8923.1-2011 Visual
assessment of surface cleanliness of steel surfaces before coating - Part 1: Uncoated steel
surfaces Rust level and treatment level of steel surface and steel surface after complete
removal of original coating.

GB/T 10125 Corrosion test under artificial atmosphere - Salt spray test GB/T 11170
Determination of Multi-Element Content in Stainless Steel by Spark Discharge Atomic
Emission Spectrometry (Conventional Method) GB/T 13452.2 Determination of film
thickness of paints and varnishes GB/T 20123 Determination of Total Carbon and Sulfur
Content in Iron and Steel - Infrared Absorption Method After Combustion in a
High-Frequency Induction Furnace (Conventional Method) GB/T 20124 Determination of
Nitrogen Content in Iron and Steel - Inert Gas Molten Thermal Conductivity Method
(Conventional Method) GB/T 20125 Determination of Multi-Element Content in Low-Alloy
Steels by Inductively Coupled Plasma Atomic Emission Spectrometry