

ICS 77.040.10

CCS H 22



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

GB/T 43491-2023

Steel wire ropes - Creep testing method

钢丝绳蠕变试验方法

Issued on: December 28, 2023

Implemented on: April 1, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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" Drafting: Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents: This document is proposed by the China Iron and Steel Industry Association: This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183): This document was drafted by: Guizhou Steel Rope Co., Ltd., China Machinery Testing Equipment Co., Ltd., Kunshan Wangzhang Testing Technology Co., Ltd: Division, National Wire Rope Product Quality Inspection and Testing Center (Nantong Product Quality Supervision and Inspection Institute), Xiamen Special Equipment Inspection and Testing Institute, Shenzhen Shenzhen Sansi Zongheng Technology Co., Ltd., Metallurgical Industry Information Standards Research Institute: The main drafters of this document: Yan Zhiyuan, She Zhongming, Chen Qingfeng, Zhang Dongmei, Chen Jianhao, Fu Xibin, Dong Li, Liang Tingfeng, Leng Jun, Xie Ke, Wang Jing, Yang Jinyan, Lai Yongquan, He Guangcheng, Hou Huining, Feng Ligang: Wire rope creep test method

1 Scope

China's national creep testing method for steel wire ropes. Creep in a wire rope is not the metallurgical creep of a metal at high temperature but a structural one: a new rope under sustained load elongates as its wires and strands bed down against each other and the lay tightens, and that constructional stretch continues for a long time before it stabilises. It matters wherever a rope's length is part of the structure's geometry. A cable-stayed bridge,

a tensile roof, a suspended facade or a prestressed structure is designed to a set of cable lengths and forces, and a cable that lengthens after installation sheds load onto its neighbours and changes the geometry. The remedy is to prestretch the rope before it is cut to length, and the test is what establishes how much stretch to expect and how long the treatment must be - which is a specification item on any structural cable order.

This document specifies the principles, test equipment, specimens, test procedures, test data processing and test reports of wire rope creep tests: This document is applicable to the determination of creep properties of steel wire ropes under constant load:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 8170 Numerical rounding rules and expression and determination of limit values

GB/T 8358 Method for determination of breaking tension of steel wire ropes

GB/T 12160 Calibration of extensometer systems for uniaxial testing of metallic materials
GB/T 16825:

1 Inspection and calibration of static uniaxial testing machines for metallic materials Part 1: Tensile and/or compression testing machines Inspection and calibration of force measuring systems

GB/T 24191 Determination method of actual elastic modulus of steel wire rope

3 Terms and definitions

The terms and definitions defined in GB/T 8358 and GB/T 24191 and the following apply to this document: 3:

1 Under the conditions of maintaining constant load and constant temperature, the length of the wire rope elongates with time after eliminating time-independent inelastic deformation: Phenomenon: 3:

2 Af Under constant load and constant temperature conditions, the ratio of the increment of the reference length of the wire rope at any time to the original reference length Score:

4 Symbols and descriptions

The symbols and descriptions given in Table 1 apply to this document: Table