

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

Code for engineering surveying

GB 50026-2007

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NOTICE

This code is written in Chinese and English. The Chinese text shall be taken as the ruling one in the event of any inconsistency between the Chinese text and the English text.

**Announcement of Ministry of Construction of the People's
Republic of China**

No.744

Announcement of Ministry of Construction on the national standard

Code for engineering surveying

Code for engineering surveying has been approved as a national standard with a serial number of GS 50026-2007, and will be implemented on May 1, 2008. Thereinto, Clauses 5.3.43(1), 7.1.7, 7.5.6, 10.1.10 article (item) are compulsory provisions and must be enforced strictly. GB 50026-93 Code for engineering surveying shall be abolished simultaneously.

Authorized by the Standard and Ration Institute of the Ministry of Construction, this Code is published and distributed by China Planning Publishing House.

Ministry of Construction of the People's Republic of China

October 25,2007

Foreword

In accordance with requirements of JB [2002]85 "Notice on the Printing of Formulation and Revision Plan of 2001-2002 Engineering Construction Standard" by Ministry of Construction, based on the comprehensive revision of "Code for Engineering Surveying" GB 50026-93, this national standard is established by chief editing department Xi'an Engineering Investigation & Design Research Institute of China National Nonferrous Metals Industry, together with the survey, design and research departments of industries of non-ferrous metallurgy, petroleum, chemical engineering, water conservancy, electric power, mechanism, navigational, urban construction, etc.

During the revision, monographic study was carried out. After surveys and summaries over the practice on engineering survey home and abroad in recent years, absorption of the outcome of related scientific research and technological development in this field, and collecting suggestions nationwide in many ways, plus many discussions and amendments by the revision group, first draft was formed, and successively exposure draft and approval draft, finally, this standard is finalized after approval.

After the revision, this national standard has 10 chapters and 7 annexes. Added contents include terms and signals, and Appendix A mean square error evaluation method of high accuracy project. The chapter of Drawing and Duplicating is deleted.

Main contents increased in the revision include:

1. Satellite positioning;
2. GPS fitting height measurement;
3. Digitalization of paper topographic map;
4. Digital elevation model (DEM);
5. Bridge construction survey;
6. Tunnel construction survey;
7. Distortion detection of underground works;
8. Distortion detection of bridge;
9. Landslide detection.

Main contents deleted include:

1. Requirements on triangulation station signal erection;

2. Requirements of Invar wire baseline measurements and subtense bar parallax method range measuring;

Main supplemental regulatory contents include:

1. Triangulation network, trilateration network and triangulation are generally called triangular network survey;

2. Combine the survey contents of filling pile, boundary post and red line into **industrial** and civilian construction survey.

This standard takes electronic recording, computer aided drawing, and computer data processing as the main line of compiling, and at the same time handwork is retained.

In this national standard, provisions in bold are compulsory provisions and must be enforced strictly. Ministry of Construction is in charge of this national standard management and the interpretation of mandatory provisions. During the predominance process, each department shall combine with engineering practice and summarize the experience carefully. In case that any amendment or supplement is needed, please send your advices and suggestions to Xian Engineering Investigation & Design Research Institute of China National Nonferrous Metals Industry, (Address: Shanxi Province Xian City Xiying Road No. 46, Postal Code: 710054) for the reference later on in revision.

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1 General Provisions

1.0.1 For the purpose of unifying technical specifications of engineering survey, and thus make the survey utilize state-of-art technology and realize economic feasibility, ensure a reliable quality and safe application, this national standard is established hereby.

1.0.2 This national standard is applicable to general surveying work in engineering construction.

1.0.3 This national standard takes quadratic mean error as the standard in judging the plotting accuracy and two times the quadratic mean error is taken as the limit error. For projects with higher accuracy requirement, method in Appendix A can be used in evaluating the observation accuracy.

Note: Quadratic mean error, closing error, tolerance and comparative difference, other than specified additionally, they shall all be expressed with variation of sign.

1.0.4 Instruments and related devices used in the engineering survey shall be checked and rectified timely, and maintenance shall be reinforced. Prophylactic repair is required.

1.0.5 Quoted measurement sources in the project shall be examined.

1.0.6 For all kinds of surveying work, not only the requirements stipulated in this standard, but also those in the current relevant ones of the nation shall be complied with.

2 Terms and Symbols

2.1 Terms

2.1.1 Satellite positioning

Determine the relative position of corresponding points on the surface by using two or more receivers to receive the signals of many position location satellites simultaneously

2.1.2 Satellite positioning control network

Control Network established by using satellite positioning technology.

2.1.3 Triangular network

Control network formed by a chain of connected triangles. It is a general designation for the previously triangulation network, trilateration network and rim angle.

2.1.4 Triangular network survey

Method to determine the positions of control points through determining the horizontal angle of vertex, length of the sides of each triangle in the triangular network. It is a general designation for the previously triangulation, trilateration survey and triangulation.

2.1.5 2" class instrument

2" class instrument refers to angular instrument with one measuring-process nominal quadratic mean error in horizontal direction as 2", including total station instrument, electronic theodolite, and micrometer instrument. Definition methods for 1" class instrument and 6 "class instrument are similar.

2.1.6 5mm class instrument

5mm class instrument refers to instruments with ranging quadratic mean error as 5mm calculated by electro tape nominal accuracy equation when the range measurement is 1 km, including range finder and total station instrument. Definition methods for 1mm class instrument and 10 mm class instrument are similar.

2.1.7 Digital topographic map

Topographic map stored in computer data format, made by computer based on terrain intelligence, certain rules and methods.

2.1.8 Paper topographic map



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