



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

GB 50517-2010(2023)

Replacing GB 50517-2010

**Code for construction quality acceptance of metallic piping in
petrochemical engineering (2023 revision)**

石油化工金属管道工程施工质量验收规范（2023年版）

(English Translation)

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Explanation of the partial revision

This partial revision of the code was carried out on national standard GB 50517-2010 Code for construction quality acceptance of metallic piping in petrochemical engineering by SINOPEC Tenth Construction Co., Ltd. together with SINOPEC Engineering Incorporation, SINOPEC Fourth Construction Co., Ltd., SINOPEC Fifth Construction Co., Ltd., the General Station of Petrochemical Engineering Quality Supervision, Wison Engineering (China) Co., Ltd. and other organizations, in accordance with the requirements of the Notice on Issuing the 2019 Plan for the Development of Engineering Construction Codes and Standards and Related Work (Jianbiaohan [2019] No. 8) of the Ministry of Housing and

Urban-Rural Development.

The main contents of the partial revision include:

1. Some referenced standards have been updated;
2. The petrochemical piping classification table has been modified;
3. The classification criteria for acute toxicity categories of toxic media and the acute toxicity classification criteria for toxic mixture media have been clarified;
4. The scope of the inspection grades for austenitic stainless steel has been delimited and explanations have been added;
5. The requirements for valve acceptance and valve pressure tests have been revised;
6. The inspection proportions and sampling quantities for re-inspection in the acceptance of materials have been adjusted;
7. The requirements for welding ambient temperature and weldment temperature have been revised;
8. Requirements for bevel preparation and fit-up of piping components of aluminium, nickel, titanium, zirconium, etc. and their alloys have been added;
9. Requirements for fit-up, welding and heat treatment of branch connection joints of different forms have been added;
10. Requirements for welding and installation of jacketed pipes have been added;
11. The heat treatment temperature requirements for welded joints of commonly used materials and the preheating requirements before welding have been adjusted;
12. Technical requirements for phased array ultrasonic testing and time-of-flight diffraction ultrasonic testing have been added;
13. It has been clarified that the proportion of non-destructive testing of welded joints shall be counted by inspection lot;
14. The sampling proportion and sampling method of non-destructive testing and the progressive examination method have been revised;
15. The leak test requirements have been revised;
16. Annex A and Annex B have been deleted.

The underlined parts of the provisions of this code are the modified contents; the provisions printed in bold type are mandatory provisions and shall be strictly implemented.

Chief development organization of this partial revision: SINOPEC Tenth Construction Co., Ltd.

Participating development organizations: SINOPEC Engineering Incorporation; SINOPEC Fourth Construction Co., Ltd.; SINOPEC Fifth Construction Co., Ltd.; General Station of Petrochemical Engineering Quality Supervision; Wison Engineering (China) Co., Ltd.

Foreword

This code was jointly developed by SINOPEC Tenth Construction Company together with SINOPEC Fourth Construction Company, SINOPEC Fifth Construction Company, Wison Engineering (China) Co., Ltd. and other organizations, in accordance with the requirements of the Notice on Issuing the Plan for the Formulation and Revision of Engineering Construction Standards and Codes in 2006 (Second Batch) (Jianbiao [2006] No. 136) of the former Ministry of Construction.

During the development of this code, the drafting group carried out special studies and fairly extensive investigation, summarized the practical experience of petrochemical engineering construction in recent years, adhered to the guiding principle of 'separating verification from evaluation, strengthening acceptance, improving means and controlling the process', solicited comments from design, construction, supervision and other parties in various forms, discussed the main issues several times, and finally finalized the code after review.

This code comprises 12 chapters and 2 annexes. The main contents include: general provisions, terms, basic requirements, piping classification, acceptance of piping materials, piping prefabrication, piping welding, piping installation, inspection and examination of piping welds, piping tests, piping blowing and flushing, and technical documents for handover.

The provisions printed in bold type in this code are mandatory provisions and shall be strictly implemented.

The Ministry of Housing and Urban-Rural Development is responsible for the administration of this code and the interpretation of the mandatory provisions, China Petrochemical Corporation is responsible for the routine management, and SINOPEC Tenth Construction Company is responsible for the interpretation of the specific technical contents. During the implementation of this code, all organizations are requested to sum up experience and accumulate data in combination with engineering practice, and to send comments or suggestions at any time to SINOPEC Tenth Construction Company (address: No. 29 Jianshe Road, Linzi District, Zibo City, Shandong Province; postcode: 255438) for reference in future revision.

Chief development organization: SINOPEC Tenth Construction Company

Participating development organizations: SINOPEC Fourth Construction Company; SINOPEC Fifth Construction Company; Wison Engineering (China) Co., Ltd.