

ICS 91.120.99

CCS J 04



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

GB/T 43667-2024

**Technical specification for corrosion monitoring and testing of
steel reinforced concrete**

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Issued on: March 15, 2024

Implemented on: October 1, 2024

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

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

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Engineering Corrosion Control Research Institute Ltd., Zhejiang Yuxi Corrosion Control Co., Ltd., Shenzhen Guoneng Chentai Technology Co., Ltd., Qingdao University of Technology, MCC Building Research Institute Institute Co., Ltd., Shanghai Jianye Technology Co., Ltd., Fuzhou Rongjian Engineering Testing Co., Ltd., Wuhan Cost Instrument Co., Ltd., Guangzhou Port Engineering Quality Inspection Co., Ltd., Beijing Hongruijia Technology Development Co., Ltd., China International Corrosion Control Engineering Technology Research Institute (Beijing) Co., Ltd., China Corrosion Control Technology Association, Beijing Bihaiyunzhi New Materials Technology Co., Ltd. The main drafters of this document are. Lin Liwen, Lin Changjian, Chen Bo, Wang Xijun, Wang Zhenyu, Han Guanghui, Zhou Jingzhong, Li Na, Liu Zhiqiang, Zhang Wei, Lei Ying, Fan Lei, Wu Huacheng, Zheng Pengyu, Zhang Kai, Ye Zhilong, Liu Fangliang, Li Xiaolong, Li Yi, Li Yan, Mo Yeqiang, Sun Yongliang, Wu Fangyun, Gao Yanbin, Luo Junping, Zang Hanyu, Tan Simin, Lin Bin, Liu Xiaoxin, He Xiaoyu, Zhang Xiuli, Jin Guoqiang, Liu Hongyi, Liu Hongqun, Zhao Xia, Jin Zuquan, Ou Shuhui, Dong Zehua, Yang Houyi, Gu Zhijun, Luo Jiaqi, Zhang Hongtu, Xu Xiaomei, Hao Tingyu, Wang Dengtang, Fang Xiang, She Hailong, Liu Yanqiang, Di Taishen, Chen Jiguo, Li Xia, Wang Guiming, Wang Yajie, Wang Wanyu, Shao Qian, and Wang Guilin. Technical specification for corrosion monitoring of reinforced concrete

1 Scope

GB/T 43667-2024 is the Chinese technical specification for monitoring and testing the corrosion of reinforcement in concrete. Reinforcement corrosion is the dominant durability failure of concrete infrastructure and it is invisible until the cover spalls, by which time the section is already lost; the answer is embedded instrumentation that reads the state of the steel while it is still sound. The document specifies the composition of the monitoring and testing system, the distribution of the test points, which is the decision that determines whether the system tells you anything, the installation, the commissioning, the acceptance and the operation, and it describes the corrosion evaluation methods, half-cell potential, resistivity, corrosion rate and the electrochemical techniques behind them. It applies to the corrosion monitoring, testing, evaluation and engineering acceptance of reinforcement in reinforced concrete structures, both those without cathodic protection and those with it. It takes effect on 1 October 2024.

This document specifies the composition, test point layout, installation, and adjustment of the reinforced concrete corrosion monitoring and detection system (hereinafter referred to as the "monitoring and detection system"). Testing, acceptance and operation are described, and the evaluation method of reinforced concrete corrosion is described. This document is applicable to the monitoring, corrosion evaluation and project acceptance of steel bar corrosion in reinforced concrete structures. It can be used for both those without cathodic protection and those with cathodic protection. Highly protected reinforced concrete structure.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 7665 General terminology for sensors

GB/T 10123 Terminology of corrosion of metals and alloys

GB/T 33373 Terminology for electrochemical corrosion protection

GB/T 38894-2020 General principles for electrochemical testing of non-destructive testing

GB 50168 Construction and acceptance standard for cable lines for electrical installation projects

GB/T 50344-2019 Technical Standard for Building Structure Inspection JGJ/T 152 Technical Standard for Detection of Steel Bars in Concrete

3 Terms and definitions

The terms and definitions defined in GB/T 7665, GB/T 10123 and GB/T 33373 and the following apply to this document.

3.1 The process by which steel bars in concrete structures degrade under environmental influences.

3.2 Mixed potential of a corrosion cell of steel bars in concrete without impressed current polarization.

3.3 The amount of corrosion of steel bars in concrete per unit area and per unit time.

Note. There are three ways to express the corrosion rate of steel bars.

- a) The mass of steel bars lost per unit area and per unit time;
- b) The amount of steel bar diameter thinning per unit area and per unit time;
- c) Corrosion current per unit area and per unit time.

3.4 Protection potential protection potential After cathodic protection is applied to reinforced concrete, the steel bars are subjected to the electrode potential of cathodic polarization.