



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

GB/T 51464-2024

**Technical standard for the durability of concrete structures in
coastal engineering**

海岸工程混凝土结构耐久性技术标准

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Foreword

This document was issued on 23 August 2024 by the Ministry of Housing and Urban-Rural Development of the PRC and takes effect on 1 January 2025.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies.

The document runs to 130 pages. The identification, the dates, the classification and the table of contents on this page are taken from the cover and the printed contents of the standard itself.

This standard was approved and issued by the Ministry of Housing and Urban-Rural Development of the People's Republic of China as Announcement No. 143 of 2024, dated 23 August 2024, and takes effect on 1 January 2025.

The document is organised around the life of the structure rather than around the trades: environmental action, materials, design, construction and maintenance, with the annexes carrying the calculation methods and the test procedures, among them the determination of the water-binder ratio and the mineral admixture content and the test for the critical chloride concentration at which reinforcement depassivates.

1 Scope

GB/T 51464-2024 is the Chinese technical standard for the durability of concrete structures in coastal engineering: sea walls, quays, breakwaters, groynes and the structures of a port. The marine environment is the hardest one ordinary reinforced concrete has to survive, because chloride from sea water reaches the reinforcement and destroys the passive layer that protects it, and the tidal and splash zones are worse than permanent immersion because the wetting and drying pumps chloride in. The standard addresses that directly: it classifies the environmental action into categories and grades by exposure zone, then sets requirements on the materials, the concrete constituents and performance, the reinforcement and the anti-corrosion materials, on the design including cover, crack control and additional protective measures, on the construction, and on the maintenance of the structure in service. Six annexes carry the calculation and test methods, among them the determination of the water-binder ratio and the mineral admixture content and the test for the critical chloride concentration at which reinforcement depassivates. For a port designer, a contractor or an owner in China, this is the governing text.

2 Terms and symbols

Clause 2 is organised as follows: 2.1 Terms; 2.2 Symbols.

4 Environmental action

Clause 4 is organised as follows: 4.1 General rules; 4.2 Environmental categories and grades of environmental action.

5 Materials

Clause 5 is organised as follows: 5.1 General rules; 5.2 Concrete materials; 5.3 Concrete performance; 5.4 Reinforcement; 5.5 Anti-corrosion materials; 5.6 Other materials.

6 Design

Clause 6 is organised as follows: 6.1 General rules; 6.3 Additional anti-corrosion design.

7 Construction

Clause 7 is organised as follows: 7.1 General rules.