Professional Standard of the People's Republic of China

Code of Energy-saving Design for Port and Waterway Engineering

JTS/T 150—2022

Prepared by: CCCC Water Transportation Consultants Co., Ltd.
Approved by: Ministry of Transport of the People's Republic of China
Implementation Date: February 1, 2023

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Introduction to Translated Version

A complete set of technical standards has been built on a wealth of experience accumulated in the construction of port and waterway engineering for the past decades of China's development. A part of the current standards has been translated into English.

Code of Energy-saving Design for Port and Waterway Engineering (JTS/T 150—2022) is part of the standard system and shall be used in conjunction with other relevant standards. In the meantime, compliance with this Code does not exempt its user from any liability that arises.

The translation of this Code is organized by the Waterborne Transport Bureau of the Ministry of Transport and undertaken by CCCC Water Transportation Consultants Co., Ltd. If any different interpretation arises from the English version, the Chinese version shall prevail. The Waterborne Transport Bureau of the Ministry of Transport is in charge of the explanation of the Chinese version.

翻 译 说 明

经过几十年的发展,中国的水运工程建设积累了丰富的经验,同时也建立了一套完整的技术标准体系。部分先行的中国标准已经被翻译成了英文版。

《水运工程节能设计规范》(JTS/T 150—2022)是技术标准体系中的一部分,应与其他相关标准配套使用。同时,使用本规范不意味着自动免除使用者应负的责任。

本规范的翻译工作由交通运输部水运局组织,中交水运规划设计院有限公司承办。英文版与中文版相关内容含义不一致的,以中文版为准。交通运输部水运局负责对中文版本的解释。

Public Notice about Issuing Professional Standard *Code of Energy-saving Design for Port and Waterway Engineering*

(JTS/T 150—2022)

No. 70, 2022

It is hereby announced that the *Code of Energy-saving Design for Port and Waterway Engineering* (hereafter simplified as the Code) has been approved as the recommended professional standard for the construction of port and waterway engineering, numbered JTS/T 150—2022, and shall be enforced from February 1, 2023. The *Code of Energy-saving Design for Port and Waterway Engineering* (JTS 150—2007) shall be abolished simultaneously.

The Waterborne Transport Bureau of the Ministry of Transport is in charge of the administration and explanation of this Code. The consultation on specific usage issues during the implementation will be explained by the chief editing unit, CCCC Water Transportation Consultants Co., Ltd. The file of this Code can be searched and downloaded from the 'Professional Standards for Port and Waterway Engineering' column of the Waterborne Transport Construction Comprehensive Management Information System on the government website of the Ministry of Transport (mwtis. mot. gov. cn/syportal/sybz).

Hereby notice.

Ministry of Transport of the People's Republic of China

December 29, 2022

Foreword

For the purpose of unifying the standards for energy-saving design of water transport projects and increasing energy efficiency, the Ministry of Transport revised and issued the *Code of Energy-saving Design for Port and Waterway Engineering* in 2007. Since its implementation, the Code has been playing an important role in regulating energy-saving design and energy saving of water transport projects, with significant economic and social benefits.

During the 14th Five-Year Plan period, China's ecological civilization construction entered a critical period of focusing on carbon reduction as the strategic direction, promoting the synergistic effect of pollution reduction and carbon reduction, promoting the comprehensive green transformation of economic and social development, and realizing the improvement of ecological environment quality from quantitative to qualitative change. In order to promote the green and low-carbon transformation of transport and help achieve the goal of carbon peaking and carbon neutrality, optimize energy structure, and increase energy efficiency, the Waterborne Transport Bureau of the Ministry of Transport organizes relevant units, sums up the experience of energy-saving design of port and waterway engineering, solicits opinions from the relevant units and experts, and combines with the status of water transport engineering in China and the need for development of energy-saving and low-carbon design, The *Code of Energy-saving Design for Port and Waterway Engineering* has been revised.

The revised *Code of Energy-saving Design for Port and Waterway Engineering* includes 12 chapters and 3 appendices. It mainly includes the general layout of ports, port handling technology and equipment, service boat, navigation structures, buildings for operation and auxiliary operation, heating, ventilation and air conditioning, water supply, sewerage and wastewater treatment, power supply and lighting, control and management, aids to navigation and other technical content.

The chief development organization of this Code is CCCC Water Transportation Consultants Co., Ltd., and the participating organization is China Communications Construction Co., Ltd. The drafting staff of this Code are as follows:

1 General Provisions: WU Lixin ZHANG Yupeng

2 Basic Regulations: WANG Dan ZHANG Yupeng

3 General Layout of Ports: XUE Xiaoxiao

4 Port Handling Technology and Equipment: WU Lixin

5 Service Boat: ZHANG Yupeng

6 Navigation Structures: LI Shuhai

7 Buildings for Operation and Auxiliary Operation: LIN Qiang

8 Heating, Ventilation and Air Conditioning: YANG Dongmei

9 Water Supply, Sewerage and Wastewater Treatment: WANG Shan

10 Power Supply and Lighting: WANG Chuang

11 Control and Management: CHEN Shuai SUN Yixuan

12 Aids to Navigation: LIU Yonggang

Appendix A: WANG Chuanyu BI Hui

Appendix B: ZHANG Yupeng WU Lixin

Appendix C: ZHANG Yupeng

This Code was approved by the Ministry of Transport on April 15, 2022, issued on December 29, 2022, and will be implemented on February 1, 2023.

The Waterborne Transport Bureau of the Ministry of Transport is in charge of the administration and explanation of this Code. In the process of implementation, each unit may submit problems and advice to the Waterborne Transport Bureau of the Ministry of Transport (Address: No. 11, Jianguomen Inner Street, Beijing, Technical Management Office, Waterborne Transport Bureau of the Ministry of Transport, 100736, China) and the management team of this Code (Address: CCCC Water Transportation Consultants Co., Ltd. No. 28, Andingmen Inner Guozijian Street, Dongcheng District, Beijing, 100007, Tel: 010-84199490) for future reference in the next revision.

Contents

1 General Provisions

1.0.1 This Code is prepared to standardize the energy-saving design of port and waterway engineering, optimize the energy structure, increase energy efficiency, control energy consumption and reduce carbon emissions.

1.0.2 This Code is applicable to the energy-saving design of newly built, rebuilt, and expanded ports, navigation structures and aids to navigation projects.

1.0.3 The energy-saving design for port and waterway engineering shall comply with not only provisions prescribed in this Code but also provisions prescribed in the currently enforced national standards.

2 Basic Regulations

2.0.1 The design of port and waterway engineering shall follow the principle of overall consideration, comprehensive utilization of resources and reduction of carbon emissions, and shall actively adopt new energy-saving technologies, materials, processes, equipment and measures.

2.0.2 The energy-saving design of port and waterway engineering shall include the type of energy consumption, the quantity of energy consumption, main energy efficiency indicators, energy consumption equipment, energy utilization status, energy-saving measures, etc.

2.0.3 Energy-saving shall be regarded as one of the important factors in the comparison and selection of design schemes for port and waterway engineering. And energy consumption index shall be compared and evaluated. Schemes with high energy efficiency should be adopted.

2.0.4 The selection of energy varieties for port and waterway engineering shall be coordinated with urban or regional energy development plan, make full use of renewable, new and clean resources of energy, and follow the principle of resource sharing.

2.0.5 The selection of energy consumption equipment for port and waterway engineering shall meet the limit requirements of energy efficiency index and carbon emission index, and the equipment that has obtained energy-saving and low-carbon product certification should be selected. The energy efficiency index of the general equipment should be level 1.

2.0.6 Energy measurement equipment shall be equipped for energy consumption equipment and facilities in port and waterway engineering operation, auxiliary operation and subsidiary operation projects and the relevant provisions in the current national standard *General Principle for Equipping and Managing of the Measuring Instrument of Energy in Organization of Energy Using*(GB 17167)shall also be complied with.

2.0.7 The port and waterway engineering construction projects shall implement the energy-saving standards and measures mentioned in the energy-saving evaluation documents.

2.0.8 Energy consumption and main energy efficiency indicators shall include annual comprehensive energy consumption, process energy consumption of main energy consumption equipment, energy consumption per unit output of product or value, etc. Energy consumption shall be given in terms of physical quantity and converted standard coal. The converted standard coal coefficient can be referred to in Appendix A, in which the standard coal coefficient of electric power shall be the equivalent value.