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Zhoushan Xihoumen Bridge—The world's longest box-girder suspension bridge

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Abstract

The Zhoushan Xihoumen Bridge is a two-span continuous steel box girder suspension bridge with a main span of 1 650 m. The design criteria, construction conditions, general design, and detailed structure design of the main bridge are introduced and presented in this paper.

Keywords: Xihoumen Bridge, General Design, Design of Main Bridge

1. Introduction

The Zhoushan Xihoumen Bridge Project, which is located in the city of Zhoushan, Zhejiang Province of China, is the fourth major bridge project in the 50 km long Zhoushan Islands-to-Mainland Linking Project. It will connect Cezi Island and Jintang Island across the Xihoumen waterway. The Main Structure of Zhoushan Xihoumen Bridge is a two span continuous steel box girder suspension bridge with a main span of 1 650 m. This span currently ranks second worldwide and first in China. The bridge is also the longest steel box girder suspension bridge in the world. The total length of the bridge is 2 588 m and the total investment amounts to RMB 2.2 billion.

2. Design Criteria

- Highway Grade: Four-lane expressway.
- Design Vehicle Speed: 80 km/h.
- Design Load: Highway Grade Ⅰ.
- Route Width: 2 × 11.5 m.
- Navigation Criteria: