

Introduction of Several New Bridge Construction Techniques

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ABSTRACT

This experience exchange article focuses on three new bridge construction techniques: Firstly, the section installation technique of the single-column steel leaning tower of the Fujian Qiyun Bridge. This process takes the self-elevating crane developed by CCCC as the technical core. It implements the lifting and alignment installation of the inclined variable-section steel tower segment. Secondly, the steel tower (including steel beam) and steel girder installation process of Shunxing Bridge in Foshan, Guangdong. In response to the nearly 300-ton hoisting load of the entire section of the steel tower, the builder abandoned the commonly used super-large tower crane and developed a self-climbing crane, which realized the installation of the 200m steel tower section and the steel beams of the upper, middle, and lower three-story tower body. At the same time, by replacing the functional kit, the tower segment hoist is transformed into a bridge deck crane, forming the function of installing the steel main girder. Thirdly, the installation process of the main arch rib and steel girder of Chongqing Liaozi Bridge. Facing the special environment such as ditches and mountains, the builder proposed and implemented the single arch rib vertical lifting, horizontal rotation, vertical placement and closure process, and completed the main arch rib installation. And they developed its own arch-load traveling crane to carry out the longitudinal transportation and erection of the steel girder. The common features of the new processes above are safer, faster, less labors and lower cost.