

Cable bridges on slopes

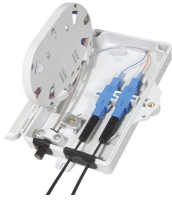


Overview

A cable-stayed bridge is a structural system with a continuous girder (or bridge deck) supported by inclined stay cables from the towers (or pylons), as shown in Fig. Cable-stayed bridges are a subcategory of suspended structures. They use cables to support the deck, offering a combination of strength, durability, and cost-effectiveness.



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Due to the relative flexibility of the girder-tower system during erection, it is easier to adjust the profile by adjusting the cable lengths compared to conventional cantilever-constructed bridges.



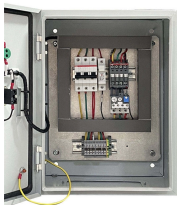
To solve this problem, transportation engineers developed the Cable Stayed Bridge. In a cable stayed bridge, the roadway is supported by cables that run directly to the suspension towers.



Unlike suspension bridges, the cables in a cable stayed bridge connect directly from the deck to the towers in a straight line. This design provides greater rigidity, making it ideal for long ...



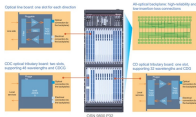
After being built, cable corrosion and weather-induced vibrations are among the main concerns for cable-stayed bridges. The unwanted vibrations can weaken cables and even lead to ...



Cable-stayed bridges trace their origins to early European structures. Engineers in the 16th and 17th centuries experimented with inclined cables for bridge support.



The Sunniberg Bridge (Figure 1), close to the village of Klosters, Switzerland, designed by Christian Menn is an example of a cable stayed bridge. It was completed in 1998 and it has gained worldwide ...



Cable-stayed bridge, bridge form in which the weight of the deck is supported by a number of nearly straight, diagonal cables in tension running directly to one or more vertical towers. The towers ...



In suspension bridges, large main cables (normally two) hang between the towers and are anchored at each end to the ground. This can be difficult to implement when ground conditions are poor. The ...



The cable stays are the key load carrying and transferring members in cable-stayed bridges, and the main problems with early cable-stay bridges were deficiencies with the anchorage system, steel ...

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