

Technical Research on OVM280 PSC System and a new generation of double slip resistance saddle

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Abstract

With the development of modern long-span cable-stayed bridges, due to the Parallel strand cable (PSC) being assembled on-site strand by strand, which has the advantages such as no need for large-scale equipment for cable-making, delivery, hoisting, traction, tensioning, and the corrosion protection of the cable is excellent, it is more and more favored by designers.

OVM280 is a new type of cable system with high fatigue resistance and high durability developed based on OVM250 steel strand cable. By optimizing the anchoring unit of the steel strand cable, reducing the deviation angle of the steel strand in transition section, and improving the raw material quality of the steel strand at the same time, so that the comprehensive fatigue stress amplitude can be increased to 280MPa. According to the S-N curve of the cable fatigue test, the fatigue life is nearly 4 times that of the 200MPa stress amplitude and 1.71 times that of the 250MPa stress amplitude, and the anchoring performance and fatigue resistance performance are greatly improved.

A new generation of double slip resistance saddle for OVM280DK strand cable has been developed, which solves the fretting wear problem in the saddle section. In addition, this saddle can be applied to the saddle with curvature radius less than 2 meters, which increases the ability of the saddle to adapt to different conditions.

Keywords: high fatigue strength; corrosion protection; slip resistance; saddle



Fig 1. Front view of the Mingyuexia Yangtze River Bridge of Chongqing Donghuan Railway