

BRIDGE JOB REFERENCE



WUHAN YINGWUZHOU YANGTZE RIVER BRIDGE

- PPWS: 128-5.25x127, Main span 850m, Hanger Cable 5x151, 5x211.
- Wuhan Yingwuzhou Yangtze River Bridge is large-scale suspension with 3 pylons. The main bridge span layout is (225+2×850+225) m. Two kinds of PWS cables were used as the hanger cables, 5x151-512pcs and 5x211-24pcs, a total of 536pcs.
- With special processing, the cable length tolerance is well controlled not more than 2mm and the relative tolerance of the two cables in the same location is less than 1mm. So far this project is our company involved in manufacturing of the hanger cables with length of highest precision and technological requirements of the most complex project.



SHANTOU BAY BRIDGE

- Shantou Bay Bridge is the first large span suspension bridge in China. The bridge layout is 154m+452m+154m. It was finished in December 1995. With many years operation, now all the hanger cables have to be replaced.
- The galvanized wire rope terminated with sockets was used as the hanger cable. The rope size is 6x36WS-IWRC-46mm, 1960MPa. A total of 484pcs.



GUIWENG HIGHWAY QINGSHUIHE BRIDGE

- Qingshuihe Bridge is a large scale suspension bridge with main span 1130m and main tower 220m high.
- The main span is the longest among the bridges in Guizhou province, also the No.1 steel trussed suspension bridge in Asia mountainous area.
- The wire rope terminated with sockets was used as the hanger cable. The rope size, 6x36WS-IWRC, 60mm-1770MPa & 64mm-1870MPa.



CHANGZHOU LONGCHENG BRIDGE

- The main bridge span layout is 72+113.8+30m; the middle span uses suspension cable structure while the side span consists of 5 stay cables to balance the tension from main cable.
- It is the first self-anchored bridge that used a combined cable system in the world.
- The main cable with one end PPWS type and the other end divided into 7 PWS Cables that anchored to the main pylon, this type is also the first time used in the world.

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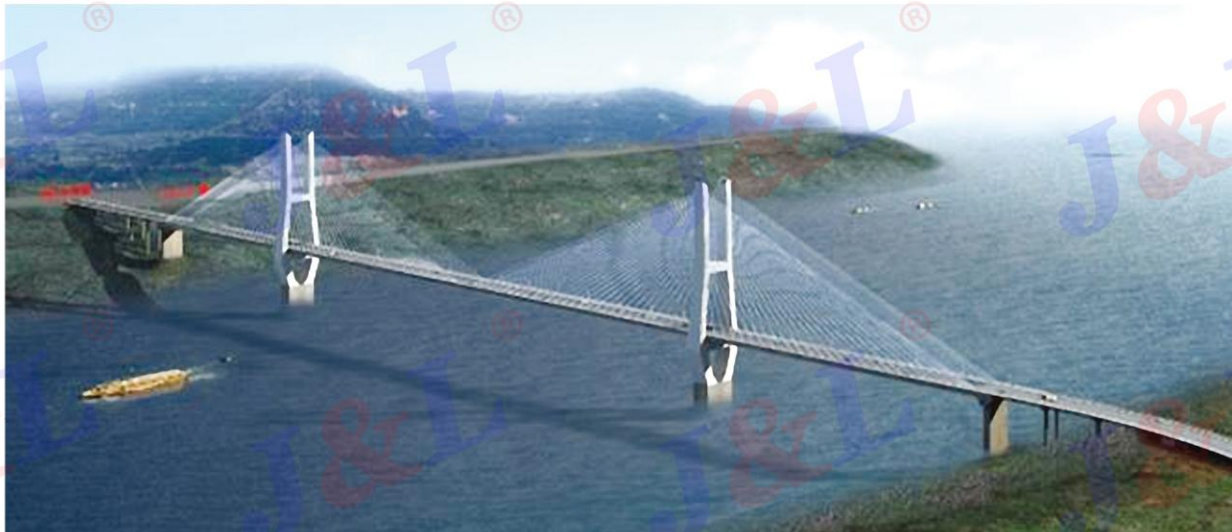
LIUJIAZIA YELLOW RIVER BRIDGE

- PPWS: 88-5.2x127; Main span:536m
- Hanger: 5x73



CHONGQING WUJING RIVER 2nd BRIDGE

- Cable size: $\Phi 7 \times 187$, $\Phi 7 \times 223$, $\Phi 7 \times 253$, $\Phi 7 \times 301$, $\Phi 7 \times 379$, $\Phi 7 \times 421$.



CHONGQING CHANGSHOU YANGTZE RIVER BRIDGE

- Cable size: $\Phi 7 \times 127$, $\Phi 7 \times 139$, $\Phi 7 \times 163$, $\Phi 7 \times 199$, $\Phi 7 \times 211$, $\Phi 7 \times 241$, $\Phi 7 \times 283$.
- The total length of this bridge is 1200m, with main span 460m and width 20.5m. The PWS cable size includes $\Phi 7 \times 127$, $\Phi 7 \times 139$, $\Phi 7 \times 163$, $\Phi 7 \times 199$, $\Phi 7 \times 241$, $\Phi 7 \times 283$.
- The size of $\Phi 7 \times 283$ was executed with fatigue test, with upper load 0.45MBF, stress range 250MPa, 2million cycles, after the fatigue loading, the cable specimen reloaded and developed a minimum tensile force equal to 0.95MBF and 3.18% wire breakage which meet the relevant standards.



TIANJIN HAIHE RIVER BRIDGE

- Cable size: $\Phi 7 \times 85$, $\Phi 7 \times 109$, $\Phi 7 \times 139$, $\Phi 7 \times 151$, $\Phi 7 \times 187$, $\Phi 7 \times 199$, $\Phi 7 \times 211$, $\Phi 7 \times 367$.

BRIDGE JOB REFERENCE



NINGBO QINGFENG BRIDGE

■ PPWS:37-5.1X91 , Main span 280m , Hanger Cable 5X91 , Hanger Cable 5X121.



DATONG PINGCHENGJIE YUHE BRIDGE

■ Cable size: $\Phi 7 \times 55$.



BEIJING CHANGPING BRIDGE

■ PPWS:19-5.4X127 , Main span 177m , Hanger Cable 7X73.



TIANJIN DAGU BRIDGE

■ Cable size: $\Phi 5 \times 37$, $\Phi 5 \times 73$.

BRIDGE JOB REFERENCE



CHONGQING FULING LIDU YANGTZE RIVER BRIDGE

■ Cable size : $\Phi 7 \times 109$, $\Phi 7 \times 127$, $\Phi 7 \times 151$, $\Phi 7 \times 163$, $\Phi 7 \times 187$, $\Phi 7 \times 211$, $\Phi 7 \times 223$, $\Phi 7 \times 253$, $\Phi 7 \times 265$.



QINZHOU ZICAI BRIDGE

■ PPWS: 37- $\Phi 5.3 \times 127$, Main span: 158m , Hanger cable: $\Phi 7 \times 121$ and hanger rod $\Phi 250$.



XIANGJIANG RIVER 4th BRIDGE

■ Cable size : $\Phi 7 \times 61$, $\Phi 7 \times 109$, $\Phi 7 \times 139$, $\Phi 7 \times 187$.



BEIJING MIYUN XITONGXIAN CHAObAIHE BRIDGE

■ PPWS: 88-5.2x127, Main span: 165m , Hanger cable: $\Phi 5 \times 73$.

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SIXIANJIAO BRIDGE AND BEIJIANG BRIDGE

- Sixianjiao Bridge and Beijiang Bridge, both the main span is steel truss beam cable stayed bridge with (57.5+109.25+230+109.25+57.5) m.
The main tower is a vase-shaped reinforced concrete structure.
The PWS cable size are $\Phi 7 \times 349$, $\Phi 7 \times 379$, $\Phi 7 \times 421$, 72pcs, 780tons.



ECUADOR SUSPENSION BRIDGE

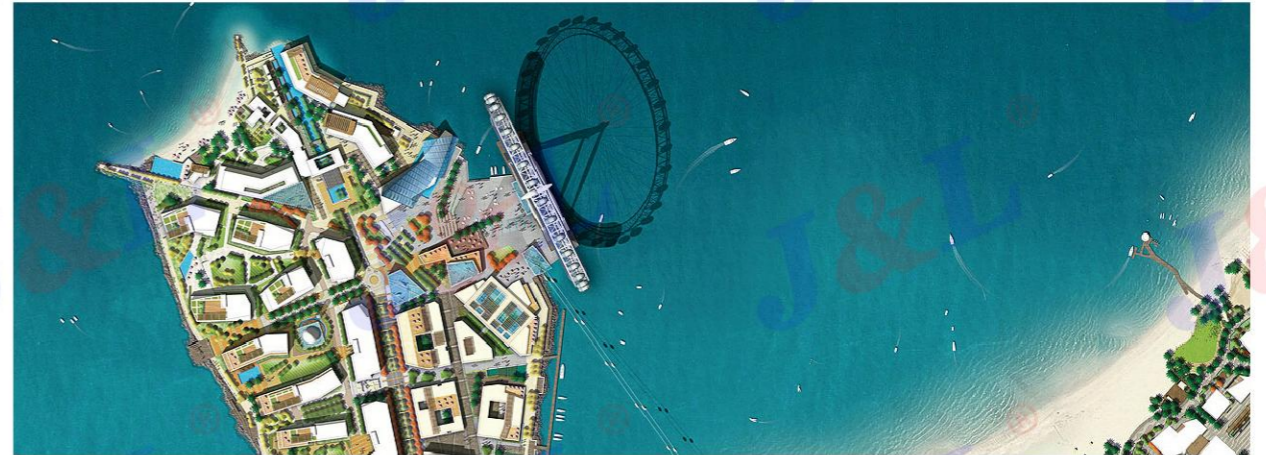
- This bridge is ground- anchored suspension bridge with two towers, the span layout is 60.5m+220m+60.5m. Two main cables with each consist of 6 spiral strand cable.
- Main Cable size 86mm, 1770MPa.
- Hanger Cable size 36mm, 1670MPa.
- This is the first time that the Chinese spiral strand cable used in suspension bridge which lays foundation to the bridge development.

CABLE FOR STRUCTURES



XINJIANG EXHIBITION & CONVENTION CENTER(PHASE II)

- Cable size: $\Phi 7 \times 583$, $\Phi 7 \times 379$, $\Phi 5 \times 31$.
- Xinjiang Exhibition & Convention Center (Phase II), total building area is about 200,000sq.m, reinforced concrete frame structure and the proof using the steel truss structure with span 120m. The PWS cable with size $\Phi 7 \times 583$, $\Phi 7 \times 379$, $\Phi 5 \times 31$ used in this project, while $\Phi 7 \times 583$ is by far the biggest size for the stay cable that used in bridge and construction project in China. The diameter is 218mm with tensile strength 1770MPa and breaking load over 39713kN.



DUBAI EYE WHEEL

- Cable size: $\Phi 7 \times 109$.
- The Dubai Eye is an observation wheel with a diameter of 250 meters and 48 capsules. The total height of the wheel will be approximately 260 meters from the ground level. The Dubai Eye , located in Dubai UAE on an island in front of the Dubai coast line, nearby Dubai Marina and West of Palm Jumeira.
- The spoke cables are made by steel pre-fabricated low twist/large pitch Parallel Wire Strand (PWS) with parallel wire bundle with external extruded HDPE sheath.
- The bending fatigue tests (5 tests) were devised to simulate the loading condition of the spoke cables occurring on the wheel in long term operation by reproducing the axial and transverse angular deviation of the spoke cables. The axial fatigue tests (3 tests) to evaluate fatigue life of the proposed PWS cable, after axial fatigue loading with upper loading 0.45MBF, stress range of 250 MPa, 2 million load cycles, the breaking force of the cable must be not less than 0.95MBF.
- All the required tests were completed in MPA Lab, Germany.