IBC 2005 PRESENTS LONGEST SINGLE SPAN BRIDGE IN THE WORLD:

Strait of Messina Bridge Project Highlights Plenary Session

BY: DAVID TEORSKY, ESWP

The 2005 International Bridge Conference will present a special plenary session on the Strait of Messina Bridge Project, which, when opened in 2012, will lay claim to the longest single span bridge in the world. This extraordinary project will connect Sicily to Southern Italy, will conduct 6 lanes for vehicle traffic (3 each way), and 2 sections of railway tracks, offering capacity for 6,000 vehicles per hour and 200 trains per day.

Stretto di Messina S.p.A., the governing organization for the project, anticipates creating greater production and commercial exchanges by bringing the two shores together. The Bridge will enlarge the marketplace by facilitating greater trade between companies and creating new business opportunities, promoting greater integration between the regional economies, including tourism.

The Strait of Messina Bridge deck is 3,666 meters long and 60.40 meters wide. The steel aerofoil is supported by multiple steel hangers bound to the cables at 30 meters intervals. The total weight of steelwork is 66,500 tons. The deck is formed by three boxes connected every 30 meters by cross beams spanning between the hangers. It carries a pair of rail tracks in the center and a triple carriageway with an emergency lane on each side. A service road is positioned below the level of the remainder of the deck.

The two towers are over 380 meters high and stand in the Sicilian and Calabrian shores. The lamellar structure is made of high strength steel with a thickness of over 60 mm. Each tower has two legs with a diamond cross-section of 16 x 12 meters, connected by four horizontal crossbeams 17 meters high and 4 meters wide. Each leg is vertically composed by 21 sections 17 meters high and a top saddle for the main cables. The towers support the load of the two pairs of cables, equal to 102,500 tons on the tower in Sicily and to 98,800 tons on the tower in Calabria. Their aerodynamic performance has been optimized in the wind tunnel. The towers are built on round concrete plinths, with a diameter of 55 meters in Sicily and of 48 meters in Calabria. The first section of each leg is cemented at 12 meters depth into the foundation. The total weight of each tower is 56,000 tons. The suspension system is the "backbone" of the bridge and it is composed by two pairs of steel cables at the distance of 52 meters. Each cable, formed by thousands of wires, has a diameter of 1.24 meters after the compaction and is over 5,000 meters long between the anchor blocks. In particular, the cables length in the central span is 3,370 meters, while the side spans cables are 1,020 meters long in Sicily and 850 meters long in Calabria.

In the central span the four cables are formed by 88 strands with a diameter of 13.5 cm, for a total number of wires equal to 44,352. The high strength steel wires with a diameter of 5.38 mm are galvanized by hot dipping and surface treated to make them corrosion resistant in order to protect the cable coat against chemical and environmental factors. The total weight of wires is 166,800 tons. The cables of each pair are linked together by clamps every 30 meters and multiple hangers link the cable clamps to the deck to hold it up.

Mr. Pietro Ciucci, CEO and Giuseppe Fiammenghi, Chief Technical Officer of Stretto di Messina S.p.A., will present this special session for an early look into this world-class bridge project. The session will be presented on Tuesday June 14 at 11:00am, during the 22nd Annual IBC, at the Hilton Hotel, Pittsburgh, PA.

(*Specificiations Source: www.strettodimessina.it)*