

## Suspension bridge over the Messina Channel

The bridge over the Messina Channel which will connect the region of Reggio Calabria, in the South of the Italian Peninsula, with the Island of Sicily, is a 3.70km long suspension bridge with a central span of 3.30km.

The 60.00m wide steel deck is composed of three longitudinal lenticular-shaped box-girders connected by transversal diaphragms every 30.00m and completed with two lateral cantilevers. This deck accommodates two carriageways (external beams), a two track railway line (central beam) and two additional lanes (on cantilevers). It will reach a maximum height of 65.00m above sea level to permit the flow of seaborne traffic.

The main span of the deck is held by two sets of 1220mm diameter, high-resistant steel closed cables, to which groups of hangers are connected from the

borders of the diaphragms. Each group of hangers is composed of 2, 3 or 4 units of closed cables with diameters ranging from 64 to 88mm. The set of main cables, which are anchored to counterweights, transmit the loads to two 382.60m high piers. These piers are composed of a steel framework with octagonal shafts and four intermediate braces whose on plan dimensions reach 16.00 x 12.00m when joined with the concrete foundations.

Amongst the most important conditioning factors in the project are, on one hand, the wind speeds which may reach up to 216 km/h and, on the other, the local seismic phenomena with earthquakes of 7.1 points on the Richter scale which provokes a maximum design acceleration of 1.4g.



### Spain /2005 Project data

Structural type:  
Large span Suspension bridge  
Location:  
The Messina Channel. Italy  
Tender Competition:  
May, 2005  
Proprietor:  
Stretto di Messina  
Client:  
ASTALDI (Italy) and  
FERROVIAL-AGROMÁN (Spain)  
Scope of Works:  
Supervision of Tender Project and  
Structural Optimization