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The Strait of Messina Bridge

Media Kit

EXECUTIVE SUMMARY

• A WORLD RECORD

The Bridge over the Strait of Messina will be the longest suspended single span in the world, with its central deck at 3,300 meters. At a total of 3,666 meters, it will be one kilometer longer the current record-holder, the Çanakkale Bridge in Turkey.

• THE BRIDGE'S SKYSCRAPERS

The Bridge's two towers will stand 399 meters tall — just like the skycrapers overlooking Central Park in Manhattan. The suspension system will consist of four cables, each 1.26 meters in diameter. The cables will be composed of steel wires whose combined total length will be 940,000 kilometers, equal to 2.5 times the distance between the Earth and the Moon.

• A HIGHWAY ACROSS THE STRAIT

At a width of 60 meters, the deck will be the widest of its kind in the world. It will support three lanes in each direction (two for traffic and one for emergencies), a double-track railway, and a service lane in each direction. The bridge will be open 24 hours a day, 365 days a year. It will support the passage of 200 trains a day and 6,000 vehicles per hour.

• INNOVATIVE DECK

The Bridge's design is based on the Messina Type Deck, which was developed decades ago precisely for this project. It is aerodynamically stable, able to withstand winds of up to 270 kilometers per hour in speed. The design has already been applied in the construction of suspended bridges elsewhere in the world.

• GLOBAL ENGINEERING EXCELLENCE

Eurolink, the General Contractor, is a consortium is led by the Webuild Group, an Italian global leader in large, complex infrastructure. Other members include IHI (former Ishikawajima-Harima Heavy Industries) of Japan and Spain's Sacyr.

• STRATEGIC HUB

The Bridge is part of a broader infrastructure plan to connect the regions of Sicily and Calabria. By connecting Sicily to the Continent, it will complete one of the Scandinavian-Mediterranean Corridor of the Trans-European Transport Network (TEN-T). It will help turn Sicily into a strategic logistical hub for Italian and European goods in the Mediterranean Basin, strengthening economic, cultural and diplomatic ties with countries to the South.

• WEBUILD'S 1,022 KILOMETERS

Webuild brings its experience to the construction of the Bridge. Its track record includes 1,022 kilometres of bridges and viaducts, including projects such as the two bridges across the Bosphorus in Turkey and the Genova-San Giorgio Bridge in Italy.

WORLD'S LONGEST SUSPENDED BRIDGE

The project involves the construction of the bridge with the longest suspended single span in the world. Its total length is 3,666 meters, while its span is 3,300 meters. The bridge will have multimodal capacity, allowing the transit of both vehicles and trains. The deck will have a total width of approximately 60 meters, and the two towers will reach 399 meters in height. The suspension system will consist of four cables, each 1.26 meters in diameter. The cables will be composed of steel wires whose combined total length will be 940,000 kilometres, equal to 2.5 times the distance between the Earth and the Moon.

PROJECT'S HISTORY

The Strait of Messina Bridge project is backed by more than 50 years of work and studies. The first international contest for its construction was called by Italy's Public Works Minister in 1969. A final design was drafted in 1992 by the concessionaire company, Società Stretto di Messina.

In 2003, the preliminary design for the project was approved, and in 2004 a European tender was launched for the final and executive design, as well as the construction of the work, which was definitively awarded in 2005. In 2006, Stretto di Messina signed a contract assigning the final and executive design and construction of the project to the project company Eurolink S.C.p.A., which had won the international tender and is led and majority-owned by the Webui

On December 20, 2010, Eurolink delivered the final design after a series of studies. On July 29, 2011, the Società Stretto di Messina approved the final design. Works were halted by Italian Law-Decree October 18, 2012, no. 179. But Italian Law-Decree March 31, 2023, no. 35 (Conversion Law May 26, 2023, no. 58) allowed for the renewal of works .

THE CONSORTIUM

The general contractor is led by Webuild, an Italian group and one of the world's leading players in the field of complex infrastructure, with completed projects in 50 countries.

Other consortium members include Japan's IHI (former Ishikawajima-Harima Heavy Industries), renowned for building suspension bridges like the Akashi in Japan and the Osman Ghazi in Turkey. There is also Spanish group Sacyr, which collaborated with Webuild on the expansion of the Panama Canal, one of the most complex engineering challenges of the century.

PROJECT DESIGNERS

The team of designers includes the world's leading experts in suspended bridges, including COWI, a Danish engineering firm with more than 90 years of experience. It helped in the design of some of the biggest suspended bridges in the last two decades, including the Çanakkale Bridge in Turkey and the Great Belt Bridge in Denmark.

TECHNICAL RECORDS

The Bridge will connect Sicily and Calabria at the point where the two shores are closest, serving as the hub of an integrated infrastructure network across the two regions.

- **Total length between expansion joints:** 3,666 meters
- **3 traffic lanes in each direction** (fast, normal, emergency)
- **2 railway tracks**
- **2 service lanes**
- **Open 365 days a year, 24 hours a day**

THE DECK

- **Multi-box wing-type steel deck** (universally known as the "Messina Type Deck"). Wind tunnel tests conducted in some of the world's leading facilities have shown that the Bridge, thanks to the unique structure of its deck, is stable up to a wind speed of 270 kilometers per hour
- **Length of the central span:** 3,300 meters
- **"Embedded rail" railway system**, which reduces weight compared to traditional solutions and limits noise emissions

THE TOWERS

- **Two towers made of highly resistant steel** each consist of two legs connected by three crossbeams
- **Height:** 399 meters
- **Weight:** 55,000 tonnes
- **Foundations:** two circular reinforced concrete footings connected by a crossbeam (diameter: 55 meters for the Sicily tower and 48 meters for the Calabria tower)

SUSPENSION SYSTEM

- Four cables, each 1.26 meters in diameter. The cables will be composed of steel wires whose total length will be 940,000 kilometers, equal to 2.5 times the distance between the Earth and the Moon.

MAIN CABLES

- **2 pairs of high-strength steel cables** spaced 52 meters apart; each cable is made of prefabricated parallel wire strands (PPWS)
- **Cable diameter:** 1.26 meters
- **Each cable consists of 349 prefabricated strands**, each made of 127 wires
- **Total wires per cable:** 44,323

- **Strand length:** approximately 5,300 meters
- **Total weight of the 4 cables:** approximately 170,000 tonnes

HANGERS

The hanger system consists of pairs of vertical high-strength steel ropes that support the deck on both sides, connecting it every 30 meters to the pairs of main cables.

ANCHOR BLOCKS

The anchor blocks are massive in size but have minimal visual impact.

Total volume: 533,000 cubic meters

EARTHQUAKE RESISTANCE

Suspended bridges are the most reliable structures in seismic areas since they have a low sensitivity to earthquakes. In fact, many of them have been built in areas known for seismic activity, such as California, Turkey and Japan.

The Strait of Messina Bridge project assumes peak ground acceleration (PGA) values greater than those expected by the applicable Italian building code for earthquakes with the same probability of occurrence.

WIND RESISTANCE

The Bridge is designed to resist wind forces of a magnitude that have never been registered in the Strait. Indeed, the project requires the Bridge to be aero-elastically stable for winds speeds at deck level equal to 270 kilometers per hour. Tests carried out in some of the most important wind tunnels in the world (NRCC in Canada, BMS in England, FORCE in Denmark, and Milan's Politecnico University) demonstrated its stability thanks to its particular deck structure: the Messina Type Deck.

Note that the maximum wind speed (gust speed) registered during 20 years of monitoring in the Strait of Messina have never exceeded speeds of 144 kilometers per hour.

NAVIGATIONAL CLEARANCE

The deck's clearance above sea level will be 72 meters over a width measuring 600 meters. Such clearance is to 70 meters under normal traffic conditions with a full load of trains and vehicles.
These parameters are in line with, or greater than, those of existing bridges across large international navigation routes.

COMPLEMENTARY WORKS

Over 40 kilometers of roads and railways, a significant portion of which will be built in tunnels, along with around 10 viaducts and three new railway stations: these are works that will complement the Bridge, creating an infrastructure network serving both sides of the Strait.

In Calabria, the road connections will extend for approximately 10 kilometers, while the railway section will measure 2.7 kilometers, designed to connect both to the historic Tyrrhenian line and the future Salerno–Reggio Calabria high-speed/high-capacity line. There will also be a multifunctional centre on the Calabrian side.

Among the major works planned in Sicily are three railway stations in Messina (Papardo, Annunziata, and Europa). The rail line they will serve will link the bridge with the university, hospitals, and the city center.

On the island, 10.4 kilometers of roads and 17.5 kilometers railways will be built. The railways will connect the existing Messina–Palermo regional network and the Messina–Catania–Palermo corridor, which is under construction (Webuild is responsible for seven lots totaling 200 kilometers).

All these works will profoundly transform mobility in the two regions, while also protecting the environment. Twelve million cubic meters of excavated material in Sicily and 4.5 million in Calabria will be reused for road embankments, environmental restoration, and coastal replenishment along the coasts.

EMPLOYMENT AND GDP IMPACT

The Bridge will act as a catalyst for investment in Southern Italy. Its construction is expected to generate over 100,000 jobs in total—an important figure for regions like Sicily and Calabria, where employment rates remain below both national and European averages.

According to OpenEconomics, the construction sites will have a positive impact on GDP exceeding €23 billion, with a spending multiplier effect of 1.71.

BROADER INVESTMENT PLAN FOR SOUTHERN ITALY

The Bridge represents a key element in a national and European strategy for the infrastructural integration of Southern Italy. It is part of a broader plan to strengthen road and rail networks, with the goal of connecting Sicily and Calabria to the rest of Italy and Europe.

The European Union has included the Strait of Messina Bridge in the Trans-European Transport Network (TEN-T) —an integrated transport infrastructure system designed to support the single market and ensure free movement.

In Southern Italy, as part of the TEN-T Scandinavian–Mediterranean Corridor, Webuild is already working on major projects commissioned by Rete Ferroviaria Italiana (RFI), including key sections of the Palermo–Catania–Messina high-capacity rail line, the Salerno–Reggio Calabria high-speed line, and the Naples–Bari high-speed/high-capacity line.

The Bridge is therefore not just a link between Messina and Reggio Calabria, but part of a broader and more strategic vision, a link between Northern and Southern Italy. It is part of a larger infrastructure development plan for the South, along a strategic route connecting Italy with the rest of Europe.

According to the 2024 Industrial Plan of the Ferrovie dello Stato Italiane (FS), by 2034, over €50 billion will be invested to improve the quality of service on the railway network managed by RFI, with an additional €60 billion allocated for transforming the network itself. State road manager ANAS will invest €40 billion in roads and highways, including €25 billion for new projects and €15 billion to improve service quality.