

World’s Longest Suspension Bridge Will Connect Europe and Asia

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Scheduled to open in 2023, the Canakkale 1915 bridge will be a steel-built infrastructure first, spanning the Dardanelles strait that separates the European and Asian continents.

As the Turkish government undertakes an ambitious infrastructure investment program, parts of the country are being transformed by new megatunnels and bridges. The Canakkale 1915 bridge is one such project, conceived to open as a tribute to mark 100 years of the modern Turkish republic.

The northwestern region of Turkey functions as an important connection between Europe and Asia, with ground traffic currently funneling through the narrow stretch of land surrounding Istanbul which leads on to the borders of Greece and Bulgaria.

Turkey’s rising economic growth as a result of agricultural expansion, increased transit links and the country’s growing popularity as a tourist destination, has led to serious congestion around its major cities.

The growing struggle facing the existing transport system has caused the government to announce its Vision 2023 program, which aims to boost capacity across road, rail and sea networks.

A Towering Achievement

The suspension bridge is being constructed in the northwestern Turkish province of Canakkale and will service the 320-km-long Kinalı-Tekirdağ-Çanakkale-Balıkesir motorway which will connect the Anatolian peninsula and East Thrace once completed. Currently, this journey requires a 30-minute ferry ride, but once the bridge is in place this will be reduced to a short drive of just 10 minutes.



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With the span between its two towers sitting at 2,023 m, the Canakkale 1915 is set to become the world's longest suspension bridge, outstripping Japan's Akashi Kaiky bridge by 32 m. Its full length, including the approach viaducts, will stretch to 4,608 m.

Formed of a reinforced concrete deck, the bridge structure supporting the road surface will be underpinned by a pair of shear-connected longitudinal steel box beams. These will in turn be interconnected by steel crossbeams that sit on external cantilevers.

The 45-m-wide deck is expected to handle large amounts of commercial and private traffic, with three lanes moving in both directions and maintenance walkways on either side, contributing significantly to the socioeconomic development of the region.

The towers, which sit on a pair of steel platforms each mounted just above sea level on massive 65,000-metric-ton submerged caissons, will make the bridge the fourth tallest in the world, with its striking design stretching 318 m into the sky.

A Partnership Forged in Steel

Once completed, the Canakkale bridge will have 128,000 metric tons of steel deployed in its construction, a mammoth undertaking for a single company.

As such, the steel elements of the bridge represent a partnership between Turkish and South Korean suppliers, with Turkey's Çimtaş and South Korea's POSCO agreeing to supply 35,000 metric tons of heavy steel plate for the tower structures, cabling systems and road surface.

The partnership is also supplying 52,000 metric tons of steel plate for the bridge deck and 41,000 metric tons of steel wire rods for the suspension system.

The Canakkale is being run as a "design-build" project. Typically for bridge construction, the design is completed before contractors and suppliers are selected. For this project, however, construction and design take place concurrently, requiring coordination between the architect and contractors from very early on.

A US\$3 billion investment, this record-breaking, steel-built suspension bridge is set to be transformative for the region's transport systems, with socioeconomic effects for Turkey and eastern Europe.

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