

PROJECT SHEET

ÇANAKKALE 1915 BRIDGE, TURKEY
LIFTING SERVICES, ENGINEERING AND PROJECT MANAGEMENT SERVICES

BOSKALIS

Royal Boskalis Westminster is a leading global marine contractor and services provider. With safety as our core value, we offer a wide variety of specialist activities to the oil & gas and renewables sectors. These activities include marine installation and decommissioning, seabed intervention, marine transport and services, subsea services and marine survey. In addition, Boskalis is a global dredging contractor, provides towage and terminal services across the globe and delivers marine salvage solutions.

By understanding what drives our clients we are able to provide the solutions that enable them to meet their specific business goals. For this reason we are constantly looking for new ways to broaden and optimize our offering and are committed to expanding our proposition, supported by our financial strength.

With our committed professionals in engineering, project management and operations, 900 specialized vessels and an unprecedented breadth of activities in 90 countries across six continents we help our clients in the offshore industry push boundaries and create new horizons.

ÇANAKKALE 1915 BRIDGE

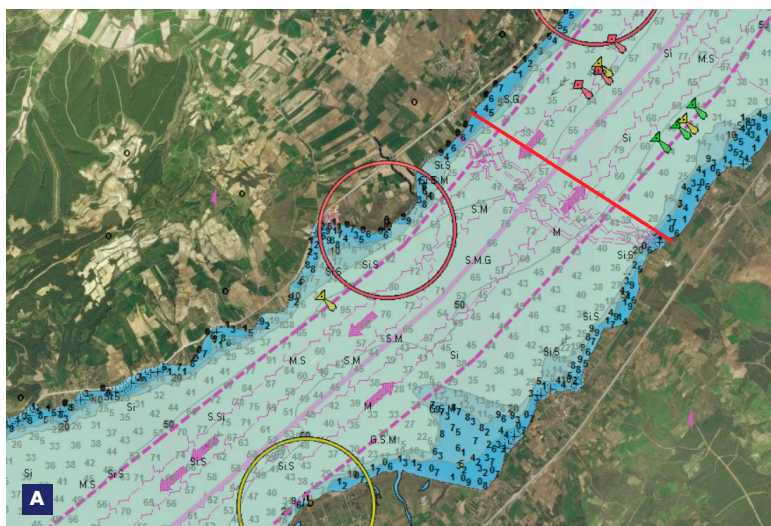
The 1915 Çanakkale Bridge, also known as the Çanakkale Strait Bridge, is a proposed suspension bridge being constructed in the Çanakkale area in Turkey. Situated just south of the towns of Lapseki in Asia and Sütlüce Village in Europe. The bridge will span the Dardanelles strait, about 10 km south of the Sea of Marmara.

The bridge is the centerpiece of the 324 km long Kinalı-Balıkesir Motorway, which will connect the O-3 and O-7 motorways in East Thrace to the O-5 motorway in Anatolia. With a main span of 2,023 m, the bridge will become the longest suspension bridge in the world.

The total length of the bridge will be 3,563 m and together the approach viaducts the length reaches 4,608 m. The total height of the bridge's two towers will be 318 m tall. The deck of the bridge will be at 72.8 m high and have a total width of 45.06 m and a maximum thickness of 3.5 m. The deck will carry six lanes (three in each direction) of motorway, together with two walkways on each side for maintenance.

FEATURES

Client	DLSY JV
Location	Çanakkale Bridge, Turkey
Period	January 2019 - December 2019



A Location map
B Installation Steel shaft

On January 26, 2017, a consortium SK Engineering & Construction Co., Daelim Industrial Co., Limak Insaat Sanayi ve Ticaret AS and Yapi Merkezi Insaat Sanayi ve Ticaret AS was appointed as contractor for the construction of the bridge.

On March 18, 2017, the groundbreaking ceremony was held, marking the commencement of the construction works. Construction activities are underway and scheduled to be completed by March 2022.

Boskalis Offshore Marine Services was contracted to execute a part of the lifting operations ,a float-over scope to install the tie-beam and deliver a part of the vessels for transport and installation of the foundation caissons.



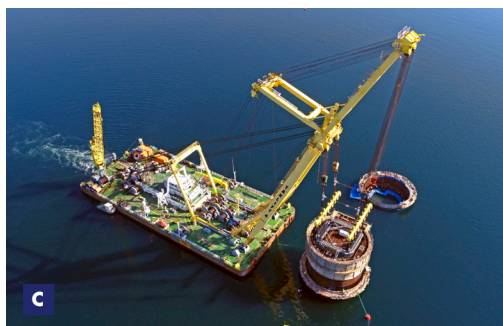
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BRIDGE SECTION INSTALLATION

Boskalis performed the engineering and prepared the method statements for the installation activities of 58 bridge sections by the Taklift 4 assisted by AHT Sapphire. The first part consisted of executing several lifts for the foundations of the bridge:

- Bottom slabs (4 x 145 t)
- Steel shafts (2 x 580 t & 2 x 650 t)
- Anchor frame (4 x 210 t)
- Rebar cage (4 x 1,120 t)



After installation of the steel shafts on the caissons of both European and Asian side the caissons were towed into position with Boskalis providing two vessels for the tow-out and positioning (Fairmount Glacier & Union Lynx).

The next stage was preparing for the float-over operation to install the tie-beam including work platforms:

- U-tie beam (2 x 1,535 t)
- Work platform (2 x 350 t & 2 x 420 t)

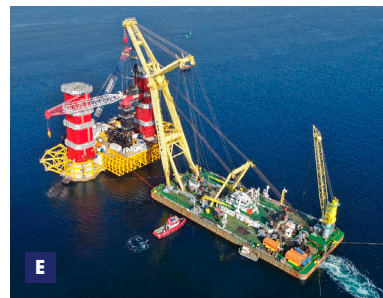
The U-tie beam was installed on Boka Barge 6 and 7 for further construction resulting in the tie-beam which was prepared for a float-over operation. On the same barges the work platforms were installed onto the tie-beam.

After finalizing the construction by the client the tie-beam was installed by executing a float-over operation by means pulling in the barge into location by the Taklift 4 and Sapphire and by ballasting the semi-submersible barge fixing the tie-beam into position. This operation was a precision operation and innovative due to being a combination of lifting and ballasting to get the structure in position.



The last stage was installation of the upper structures consisting of:

- Tower blocks 24 pieces (ranging from 715 t to 195 t)
- Tower crane foundation (2 x 315 t)
- Tower crane (2 x 575 t)
- Work platforms (4 x 175 t)



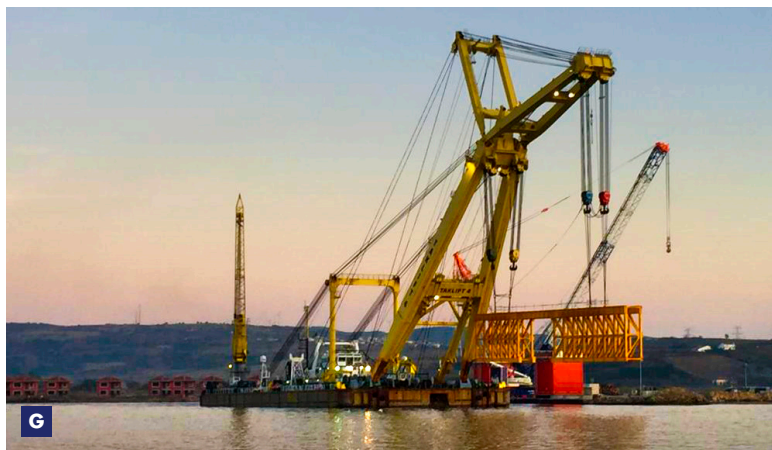
SAFETY

The project was executed with an excellent safety performance by vessel crew's and project personnel achieving the safety targets set at the kick off of the project.

CONCLUSION

The project was an excellent example of the combined expertise of several departments within Boskalis.

Maintaining the highest safety and sustainability standards, Boskalis provided innovative and competitive all round solutions to our clients in the civil construction sector.



- C** Installation Rebar Cage
- D** Float-over operations
- E** Installation Tower Crane
- F** Installation Tower
- G** Installation Work Platform

Boskalis

PO Box 43
3350 AA Papendrecht
The Netherlands
T +31 78 69 69 000
offshore.energy@boskalis.com
www.boskalis.com/offshore