



Engineering Structures for Life



TRANSPORTS - PORTS

APDL – IC1 motorway viaduct over Port of Leixões

ABOUT

Widening and Rehabilitation

The IC1-A28 motorway viaduct over the River Leça and the Port of Leixões was built between 1956 and 1961 and is composed of two 405 meters long separated viaducts spread over 15 spans. The viaducts are constituted by a concrete slab supported on prestressed concrete girders and the foundations are on precast reinforced concrete piles.

The enlargement and rehabilitation of this viaduct sought to solve the problems caused by an intense traffic flow, not just on the IC1 motorway but also the one generated by the Port of Leixões, and some serviceable problems. With this purpose, GEG developed in 1998 the traffic study and the design of the enlargement of the viaduct and its accesses, from 2×3 to 2×4 lanes, plus walkways, and developed the viaduct rehabilitation design, which included new expansion joints, bearing replacement and concrete rehabilitation.

The enlargement structural solution comprised a reinforced concrete slab, which rests in longitudinal metal girders, supported by steel frames located in the alignment of the existing reinforced concrete frames.

FACTS

Year: 1998-1999

Client: APDL – Administração dos Portos do Douro e Leixões

Services: Detailed design, Structural Engineering, Transport studies, Rehabilitation and refurbishment design, Consulting and on-site technical support

TEAM

LOCATION

Matosinhos, Portugal

This project is included in GEG's vast portfolio of projects in the Port of Leixões – one of the most important port infrastructures and maritime communication gates of Portugal – where GEG has been developing, for over two decades, a continuous and full range of activities in multiple areas.

Engineering solutions to solve collision damages

In 2006 a vehicle collided with a steel beam causing the warpage in its entire length and breaking the connection between the bracing struts and the inferior beam. GEG was responsible for the inspection of the structural damage and defined a temporary structure and a new beam to replace the damaged one.

In 2010 another accident occurred with the collision of a vehicle on the steel structure. GEG made the inspection analysis to the damaged area and defined an engineering solution which consisted on the implementation of corrective and rehabilitation measures on the damaged structure.



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