



▲ Perdigão Viaduct with 600 m length

Perdigão viaduct is part of the A23 highway, consisting on two independent decks; each formed by two steel girders and a pre-cast concrete slab.

Only the steel structure was launched.

The viaduct is 600 m long, with extreme 40 m spans and 52 m current spans and the variation on the launching leaning from -0,5% to +4,6%.

Scope of works performed

- Design and execution of launching method
- Structure lifting
- Special pot bearings supply
- Joints supply
- Prefabrication area layout
- Steel details design.

A 12 m steel launching nose was used to control the structure bending during the launching.

Two jacks, erected in the nose's front were enabled to lift the structure, thus compensating the deflection, allowing the nose to reach the pile bearings.

These special free-sliding bearings, supplied by VSL/CTT, had an inox sheet cover that would be removed when the launching was completed, allowing the structure to be connected to the bearings.

During the incremental launching, elastomeric pads with PTFE were placed between the beam and the bearing, assuring a minimum friction force. At the pre-cast yard the steel work structure was

erected over capping bars that slid over a concrete beam, covered by a steel rail.



▲ SLU jack connected to the steel girder

SLU jacks 70/330 were used to pull the structure.

Tendons were installed along the casting yard with dead-end anchorages in each edge. The jacks (one for each girder) are then connected to the structure, moving along with it.

This assembling allows to reverse the process, pushing back the structure, in case of strong winds or any other unforeseen situation.



▲ A free-sliding bearing placed at the abutment

▼ Hydraulic jacks at the tip of the nose



▼ The two decks in place



▼ One more segment being launched



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To do so, it is only necessary to remove the jacks and install them backwards.

The current spans were assembled and launched on a weekly cycle, allowing the construction schedule to be completed in time.



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