

Case Study: Foundation Grout Bag System

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Proserve's foundation grout bag system is being used to form insitu concrete foundations to 48 N° precast concrete bridge piers for the 'Nouvelle Route du Littoral' project in La Reunion, with a total foundation area of 16,420 m².

The new 5.4 km long bridge is being built 100 m off shore, replacing the current coastal dual carriageway which is prone to closure due to rock falls from the steep volcanic cliffs.



New Coastal Route
(Lavigne Chéron Architectes)



Pier Base
(Viaduc Littoral/Sébastien Marchal)

A specially commissioned jack-up barge 'Zourite' is used to transport, place and grout the pre-cast bridge pier elements.

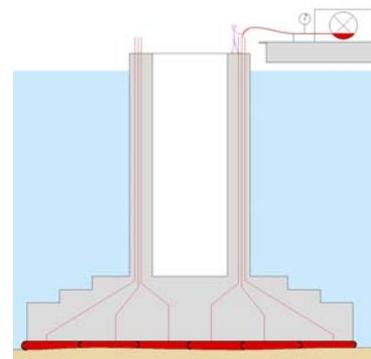
Grout bags are pre-fitted to the underside of the 20 and 23 m base diameter precast concrete pier units, in the fabrication yard. Pier units are transported to the worksite and placed above the pre-prepared gravel bed using an on board gantry crane, and 4 N° temporary external jack legs for positioning control.

The grout bags are filled insitu in automated fashion from the surface via filler pipes cast into the tower with a highly fluid sand:cement micro concrete from the on-board batching plant. Intimate foundation contact is achieved using open vent sleeves to the perimeter of the base which control the filling pressure. Automated grout sensors in the vent sleeves indicate when grout bag filling is complete.

The grout bag foundation system allows high element positioning tolerances required for bridge deck construction to be reliably achieved. The 6 N° grout bag compartments manage risk for controlled grouting of each pier foundation in tremie fashion in some 12 - 16 hours.



Grout Bag Test
(Viaduc Littoral)



Automated Foundation Grout Bag System