

New Open-Sea Breakwater, seabed consolidation takes shape

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Operations proceed smoothly at the Port of Genoa's underwater site for the construction of the open-sea breakwater.

The consolidation of the seabed is underway in a designated site, nominated Test Area 1, with the installation of the first offshore gravel columns set to support the new barrier. A total of 70,000 columns will be constructed and positioned along the entire perimeter of the breakwater. To date, already 100 columns have been built, whilst plans are afoot to create a further 850 in Test Area 1 in the forthcoming month, with the objective of completing them all in 17 months.

An innovative technique, the "Wet Top Feed - Blanket Method", has been deployed to construct the granular columns. It foresees the use of a vibroflot, a 17-21 metre vibrating probe connected to 40-metre-high cranes on pontoons, lowered across the seabed to the layer of gravel already in place to accommodate the 13-metre high columns. The deep-vibratory process, accompanied by water-air jetting, ensures that the probe can successfully penetrate the seabed creating a tube-like space into which the surrounding gravel circulates. As it flows, the future columns take shape, and compaction is progressively achieved.

The work to lay the gravel on the seabed proceeds simultaneously, with at this juncture approximately 185,000 tonnes of material deposited by a 3,600-ton capacity ship and two smaller vessels with a total capacity of 700 tons, which transport daily on average 3,000 tons of gravel for a total of 90 voyages to/from Piombino and Genoa.

The new open-sea breakwater, under construction by PERGENOVA BREAKWATER led by Webuild in partnership with Fincantieri Infrastruttura Opere Marittime, Fincosit and Sidra, has been commissioned by the Western Ligurian Sea Port Authority, and ranks as the Italian port industry's greatest infrastructure facility underway. A sophisticated feat of engineering, which will replace the existing structure further out at sea, designed to ensure safe access to the port by the ultra-large vessels which require wider navigation channels and turning basins. The breakwater is the focal point of the Port Authority 3-billion euro far-reaching plan to improve access by sea, road and rail to the Port of Genoa's cargo terminals to cater for the projected increase in volumes and consolidate the Ports of Genoa and Savona-Vado's strategic role as the leading European modern logistics platform in the Mediterranean for global trade.