

Sonda Emigranti Sh.p.k.

SPECIAL FOUNDATIONS



History

Sonda Emigranti, founded and leaded by Defrim Hoxhaj, started its operation in 1997 in Vlora, producing the first modern water well in the region with big diameter. After a long experience enriched by the geological diversity of the region, whith mountains and sea in a very short distance, but also by the multiple professional consulting services with the Italian associated companies, the next step to take was to increase the personnel and the capabilities of the company. In the 1999 and 2000 the high request of the construction industry represented the optimum condition to start applying new technologies and modern methods, which were still to discover in Albania. From that moment on, investments in any of the fields of special foundations in construction and infrastructure started. This enabled Sonda Emigranti to cooperate with many international and multinational companies, as well as with the local general contractors. All of the above mentioned steps were fountamental to confirm our company at a national level but not only.



(Mr. Hoxhaj was chacking the Dredging in port of Vlora)



About Special Foundations

This is a reference to piling techniques that are constructed under a stabilizing fluid to maintain integrity. Specific techniques include Diaphragm Wall, Bored Pile, Barrette, and Cut off Wall.

Sonda Emigranti sh.p.k. is a company operating in the special foundation works sector for over twenty years. The specialization areas belong to the whole range of special underground works (special foundations) and in particular the consolidation of foundation soils, rocky walls or tunnel faces (consolidation), and the poles for support and / or consolidation of shallow foundations in the field of residential or industrial buildings (piling). Aside them, we offer other kind of works such as steel piles and steel sheet piles walls and combi-wall, micropiles, concrete bored piles, jet grouting, bored ground anchors and tie-rods, "Rock socket" works.



(Bridge on ByPass Vlore 1200 mm for 20 meters)

With the experience gained over time, and the many interventions made, our company offers the full range of practical solutions addressing the specific geotechnical problems from a technical and economic point of view.

The presence of highly qualified personnel selected over the years, so as proprietary equipment, makes Sonda Emigranti sh.p.k., one of the most interesting realities in Albania



- **Diaphragm walls**

The excavating system consists of a clamshell bucket (Grab).

The grab has the same thickness of the wall to be built.

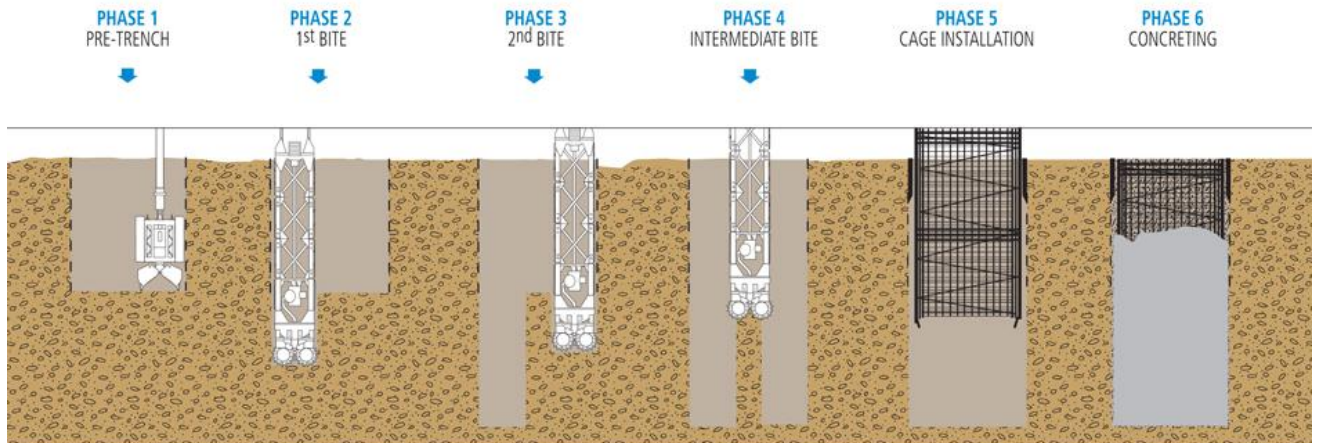
The excavation is carried out with primary and secondary panels, with bentonite or polymeric slurry.

The panels are reinforced with prefabricated steel cages.

Before the cage lowering, the slurry into the trench has to be treated and cleaned.

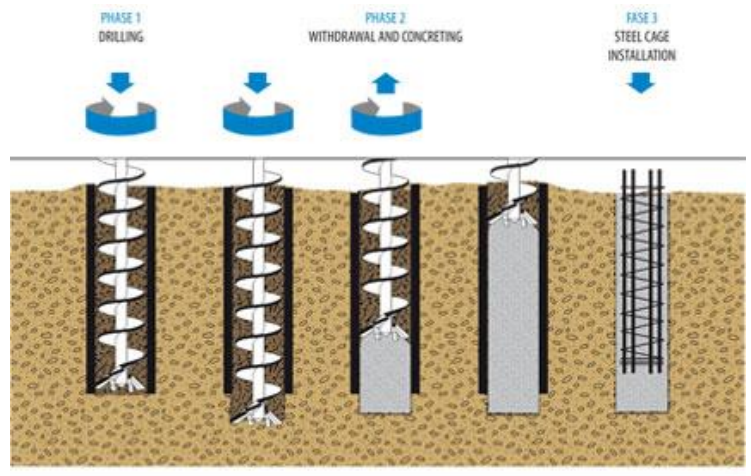


PRIMARY PANELS



- **Secant Bored Piles**

Closely spaced bored piles can be used to form a retaining wall, perhaps for the construction of a deep basement or a cut and cover tunnel. The piles may be constructed so that they virtually touch each other (contiguous). The gaps between the piles can be grouted to form a watertight retaining wall.



Alternatively (secant piles) every other pile may be constructed, with their centres less than two diameters apart. In-fill piles are then bored, cutting into the adjacent piles to form a continuous structure. To aid construction, the first sets of piles may be cast with a lower grade of concrete. These may not be load-bearing and act as 'seals' between the main load bearing piles.



As the piles interlock, this form of construction leads to a more efficient form of structure. During excavation of the soil, the piles will generally require propping before the permanent floor and/or roof structure are completed.



(protection of an old building in Vlora)

Because of the form of construction, the exposed piles will be fairly rough in appearance. Thus, in most cases, an inner wall, which may or may not be structural, will be built or some decorative surface applied, e.g. sprayed concrete or cladding. A method of drainage will generally be required between the piles and any inner wall.



- **Steel piles and steel sheet piles**

Steel Sheet Piling

With multiple stocking facilities throughout the United States, Hammer & Steel has a large selection of steel sheet piling products available for sale or rental. The "ball and socket" connection interlock allows for flexibility in setting while remaining very durable under driving conditions.



(protection of pier of bridge for TAP project in Seman, Fier.)

Combi-Wall Systems

Combined Wall Systems are formed by using beams and steel sheet piles for added strength for applications including river cofferdams, bridge pier protection, foundations, and levee construction.



(port of Vlora, bulding new quay.)



- **Jet grouting, bored ground anchors and tie-rods, “Rock socket” works.**

Micropiles

A “multipurpose” technology in foundation engineering.

Structural elements (100 350 mm diameter, 30 35 m average length) for :

- ✓ Deep Foundations
- ✓ Underpinning Foundations
- ✓ Soil Nailing
- ✓ Retaining Walls
- ✓ Tunnel Construction

Main Advantages:

- ✓ All range of soils and rocks
- ✓ High bearing capacity in comparison with drilling holediameter
- ✓ Capability to overpass pre-existing foundations
- ✓ Use of light weighting and small sized drilling rigs in restricted



- **(LDP) Large Diameter Piles**

(LDP) Large Diameter Piles performed with telescopic kelly bar and drilling tool (auger, bucket, core barrell) is the most commonly used technology throughout the world, as it allows to drill piles in any type of soil or rock. Bored pile is a cast-in-place concrete pile where the bored piles have to be cast on job site.

The operating sequence includes the following steps: boring – generally using steel casing or stabilizing mud such as bentonite suspension – drilling and for uncased piles mud de-sanding. After these, reinforcement bar will be put into the bore hole and concrete will be poured into the bore hole.



Advantages

- ✓ Telescopic kelly bar allows to perform very deep piles.
- ✓ Extensive range of drill tools, casings and other auxiliary equipment suited to any type of soil or rock.
- ✓ The large diameter bored piles are often applied in the execution of foundations of piles for bridges and viaducts in the water.
- ✓ Length and diameter can be readily varied to suit varying ground conditions.
- ✓ Large excavations and subsequent backfill are eliminated.
- ✓ Absence of vibration will not disturb adjacent piles or structures.
- ✓ Offer higher capacities with potentially better economics than driven piles.



(Piles with bentonit and vibration casing in Velipoj-Shkoder)

Technical data

Pile diameter: 600 to 3500 mm depending on soil diameter and consistency.
Pile depth: 60 to 100 m depending on soil diameter and consistency.



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Special foundations

- **Prefabricated Pile Cage**

We are a specialist manufacturer and supplier of prefabricated pile cages that meet the design requirement of specific contracts.

Product Features

- Pile cages can be pre-assembled in our factory or fixed on site.
- Pile cages are manufactured from weldable material
- Pile cages are supplied with 'Z Bars' or circular 'Stiffener Rings' to maintain the pile shape while being transported or being installed.



(ByPass vIora, Serenissima Costruzioni)



(cages with sonic test pipes, 1000mm)



(welding the rebars on our site)



Our Best Projects

In the present there are lists some of our activities and bring work completed in the arc of the last years some of our most used machines with respective members of company.

Porto Romano, Durres:

Tanks for refueling. long piles 25 m, diameter 800 mm.

Client: Piro Bare.

Thermo power plant, Vlora:

Vibro piling in the sea and dry land. Sheet piling of length 12 m.

Client: Sallilari.

Thermo power plant, Vlora:

Vibro piling Sheet piling of length 14 m.

Client: Maire Enginerine Turin.

Highway Durres - Kalimash:

Bridges in the city of Fan Vogel and Rreps. long piles 18m and diameter 1000 mm.

Customer: Delia Grup sh.p.k.

Levan-Vlore highway:

long piles 15 m diameter and 1000 mm. d armor welded cages assembly

Client: Alpine Bau GmbH.

Fierza:

Piles 16 m in length and diameter 1200 mm.

Client: C.A.E sh.p.k.

Lezhe:

Piles 36 m in length and diameter 1200 mm.

Client: Kolacem Albania.

Highway Fier - Levan

Length piles 30 meters in diameter 1000 mm

Client: Geoservice sh.p.k. - Serenissima

Costruzioni s.p.a.

TAP pipeline Seman - Fier

Piles for bridges from 30 meters in diameter 1200 mm, sheet piling to piling works in river insulation.

Client: Gener2

TAP pipeline Korce - Proger

Gravel Piles for soil improvement 8 meters in diameter 800 mm,.

Client: SPIECAPAG – AlbStar

Oil Well Shpirag - Berat

First drilling 40 meters in hard rock 1400 mm diameter with 13 meter drive casing.

Installation and concreting the first casing 800mm for drilling machine.

Client: SHELL – AlbStar

Gramesh Hydroelectric plant.

Piles from 15 meters in diameter 1200 mm.

Client: Euroteorema Group sh.p.k.

7 Bridges and elevated to Levan-Fier Highway (bypass Fier).

Piles 40 meters length 1000 mm with bentonit and cross-hole test with sonic pipe inside.

Client: A4 Holding- SERENISSIMA SPA



2 Bridges to Vlora bypass Highway.

Piles 20 meters diameter 1200 mm, and cross-hole test with sonic pipe inside and core boring test 110 mm.

Client: A4 Holding- SERENISSIMA SPA

**Peshkepia bridge, Vlora,
Bridge Palace Shigjeta, Tirana,
Bridges, Kashar Tirane,
Bridges and elevated to Mamurras,
Bridges and elevated to Thuman,
Bridges and elevated Patok,
Bridges and elevated to Laç.**

Length 30 m and diameter of 1200-1500 mm.

Client: Euroteorema Group sh.p.k.

Bridges and elevated Milot.

Piles from 30 meters in diameter 1000 mm

Client: Euroteorema Group sh.p.k.

Bridges, Velipoj – Shkoder.

Piles drilled by bentonit and vibrator casin, length 20 meter diameter 1000 mm

Client: Albtiefbau sh.p.k.

Bridges, Velipoj – Shkoder.

Piles drilled by bentonit and vibrator casin, length 20 meter diameter 1000 mm

Client: Denis05 sh.p.k.

Port of Vlora.

Drag line, dredging, piling steel sheet piles and tubular metal shirts.

Client: Piacentini Costruzioni s.p.a.

Vlora Waterfront.

Variation of piles of different sizes and depths, excavation works with tracked vehicles for waste water.(5.000 meter linear)

Client: Xh & M sh.p.k.

Vlora Waterfront Platform.

Piles with vibrator 15 meters diameter 600 mm .

Client: Xh & M sh.p.k.

Retaining Wall, Kacanik (Kosov).

Piles from 800 mm deep 25 meters.

Client: Avduli sh.p.k.

Water supply wells, Levan.

Wells 30 meters

Client: Todini s.p.a.

Aqueduct of Elbasan.

Wells 30 meters

Client: AlbStar

Marinz – Fier.

Stands for refueling tanks. Piles 15 m in length, 600 mm in diameter.

Client: AlbStar

Construction of Wells 'water for irrigation and personal use: More than 2000 boreholes across the nation of Albania.

Piles for private buildings or retaining walls for earthworks: More than 100 buildings, for secant piles, throughout Albania and some locations of Kosovo.



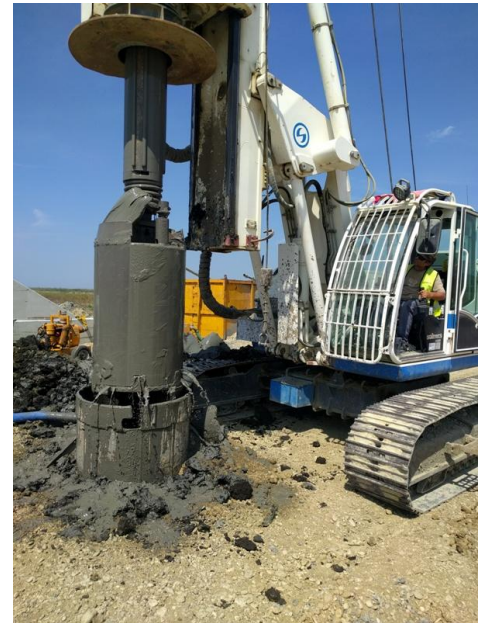
Work Gallery

- OIL WELL.**



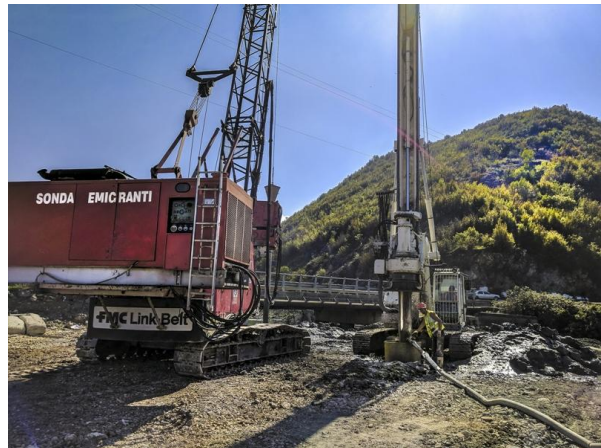
- **PILES AND SECANT PILES.**





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Special foundations



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Special foundations

Drills and Drilling:

- ✓ MAIT HR 130
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- ✓ Soilmec SR30
- ✓ Soilmec SR30
- ✓ Soilmec RT3S (Rotary)
- ✓ Soilmec SM21 (Micropails)

Cranes and lifters:

- ✓ Link Belt 108 HD 60 ton
- ✓ Link Belt LS 108B 50 ton
- ✓ Link Belt LS 108B 50 ton
- ✓ Dieci telescopic Icarus 4 ton
- ✓ Komatsu 10 ton
- ✓ DRAG LINE system for cranes
- ✓ Vibrator PTC 30 10 ton
- ✓ Crabs for diaphragm walls

Truck:

- ✓ MAN 18-510 XXL (tractor)
- ✓ DAF 96XF 380 (tractor)
- ✓ Renault G300 36 tons (10 tons crane)
- ✓ Mercedes Benz 19-48 12 tons (5 tons crane)
- ✓ CTB balance 3 axes 35 ton 12 mt
- ✓ floor semitrailer 3 axes 30 ton 12 mt

Shovels and excavators:

- ✓ Terex TC 75 8 ton excavator rubber tracks
- ✓ Dieci fratelli icarus 4 ton wheel loader
- ✓ Atlasfiat FL4M 6 ton crawler loader
- ✓ Caterpillar 320



Completion equipment:

- ✓ 4 motorized Wellpoint pumps 2 cylinders
- ✓ 1 motorized pump VM 6 cylinders
- ✓ 2 mono cylindrical pumps
- ✓ 2 moto welding MOSA
- ✓ 2 generators 50 kw
- ✓ Professional Welding equipment
- ✓ Flush continuous welding (argon)
- ✓ Jackhammer for 10 ton excavator
- ✓ 30 meters casing 900 mm
- ✓ 24 meters casing 700 mm
- ✓ 20 meters casing 640 mm
- ✓ Tools and casing 400 mm up to 1500 mm

Tube machine:

- ✓ Mario Croci & Figli MACH 3152-TX
- ✓ LOREV 120 matic
- ✓ Concrete plant for supply of machinery
- ✓ Vibrant Plane with respective molds to order

Cages machine:

- ✓ GTM 200-1100-14E Saf 2000

When facing new and challenging projects, the need of additional or special resources has always been successfully fulfilled by SOILMEC and TREVI s.p.s., with which there is a stable, reliable and professional partnership relation.

The two companies have a shared experience especially when involved in big projects and accounts. Sharing technical knowledge and engineering resources has been a key factor for the accomplishment of the most complex and challenging projects.

Supporting each other with tools and human resources has led to the mutual growth of our companies and a successful path against competitors.

