

Treatment of fluvial and marine erosion by STABIPLAGE® a soft and sustainable technique of coastline management

The company **ESPACE PUR – Studies and Works**, (at Le Guilvinec (29) – Brittany, Paris (75) and Perpignan (66)) is specialised in the treatment of **marine and fluvial erosion**. It develops a new and patented technology: the **STABIPLAGE®**, a structure made of geocomposite material, ultra-resistant and injected by water pressure. These one-block works are manufactured (with materials of high quality, abrasion resistant, UV resistant, hydrocarbons, alkaline, etc), laid and injected by **ESPACE PUR**.

Presentation

The technology of the **STABIPLAGE®** was developed with a view to offer a **soft method of protection against erosion**. For this reason the works are designed to be integrated in an optimal way in the ecosystem: integration in natural sedimentary dynamics, respect of the biomass and of the users.

- ▶ **the STABIPLAGE® does not disrupt nature.**
- ▶ **It does not disrupt either the balances that govern it; it assists them.**

The technique was developed starting from a good knowledge of the coastal, river and lake environments. It is based on the use of materials of high quality to create new works adapted to each site, each ecosystem and each one of its needs.

The STABIPLAGE® is manufactured, dimensioned and laid according to needs:

A. In maritime or lake areas:

- Sediment catchers, laid at an angle to the coastline,
- Immersed works: groynes without negative impacts or works creating a “perched beach”,
- Works at the bottom of a dune, with possibility of covering,
- Creation of artificial surfing spots.

B. In fluvial or lake areas:

- Consolidation of banks,
- Sediment catchers, laid at an angle to the coastline,
- Creation of artificial banks,
- Fight against the floods,
- Creation of hydraulic thresholds,
- Deflecting works,
- Creation of coffer dams.

C. Positioning:

- Immersed or emerged,
- Perpendicularly or parallel to the coastline,
- Perpendicularly or parallel to the river banks,
- With or without anchoring according to the type of sea, tides or hydrodynamics.

ESPACE PUR Company manufactures, transports, lays and injects its works in France and abroad. All these elements thus enable us to answer a broad panel of requirements in term for treatment for erosion while bringing out tailor-made solutions: **each work is new**.

To call upon companies (hiring of equipment) or local work force is possible.

The STABIPLAGE® is a geocomposite structure injected hydraulically with aggregates. These are the latter which give him its shape and maintain it overall elliptic ("potato" shape) crosses from there, and cylindrical over the length. The materials used, tested in laboratories and tested in-situ, are resistant to the extreme natural conditions of pressure and temperature.



The **patented double-layered structure**: a permeable filter, covered with a resistant shell, makes it possible to ensure longevity in time of the shape of the work and its resistance to the agents of erosion: abrasion by sand, UV, hydrocarbons, various waste carried out by the currents or the tides.

The STABIPLAGE® offers **adaptability** and an optimal **effectiveness** on **many types of substrates**, and in **many types of environments**. The needs for maintenance are null under «normal use» conditions.

STABIPLAGE® properties

A. Respect of the ecosystem:

- Not needs to use heavy technologies to set up the works,
- Speed of intervention,
- No needs for maintenance,
- Possibility of arranging ecological niches on the immersed works,
- The sediment catchers naturally become covered with sand,
- When using an artificial covering (dams, banks, bottom of dune), the materials allow the drainage necessary to the life of the ground,
- No cavities allowing the reception of waste.

B. Respect of sedimentary dynamics: integration in dynamic balance

- **No domino effect** regarding perpendicular works: the works are dimensioned to establish a judicious sedimentary collecting, without blocking the long shore current and nor a peremptory necessity to lay several works,
- The monolithic aspect, related to a minimum of plane surfaces, ensures an **optimal stability** of the work: no effect of under/over-pressure, no effect of resonance; the swell is "accompanied" and not countered. The permeable character and the technique of installation of the works make it possible, in addition, to eliminate the risks of underminings.

C. Respect of the users:

- Works which are not oversized, before natural covering; the user can cross or to go easily on the work,
- When they are immersed, the works do not present a risk of trapping (no cavities) nor of dangerous "iceberg" effect for the bathers and nautical plays



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