The structural and hydraulic stability of this concept has been verified through numerical calculations and 2D and 3D physical scale model tests.

The ACCROBERM<sup>™</sup> I et II offer high levels of stability compared with conventional toe berms, and are easy to place with the usual construction tools.





CLI Head Office : 6, rue de Lorraine 38130 ECHIROLLES - France Tel : 33 (0)4 76 33 47 74 - Fax : 33 (0)4 76 33 47 75 cli@concretelayer.com - www.concretelayer.com S.A.S AU CAPITAL DE 74 000 € - 440 449 965 RCS GRENOBLE - SIRET 440 449 965 00027- NAF 7112B www.bleupiment.fr - 09/2018



## **ACCROBERM**<sup>™</sup>

## Another economical solution for improving stability and biodiversity



ACCROPODE<sup>™</sup> Concrete Armour Units have been recognised for nearly thirty years as reliable, effective and economical solutions. In ensuring that the armour facing remains stable, one of the essential factors is the toe upon which the entire structure rests



ARTELIA and CLI have hence developed an innovative armour toe system that offers solutions geared to most of the design situations that can arise The ACCROBERM<sup>™</sup> concept is a toolbox developed on the basis of a flexible, adaptable set of toe blocks. It can be modified in line with the objectives to be achieved.

## It offers concrete solutions for:

- Stabilising the toe in the surf zone
- · Eliminating most stabilizing toe trenches
- · Eliminating the heavy stone toe berm
- · Facilitating deployment and ensuring reliable execution
- Saving on materials, since it is often more economical than the other solutions
- Reducing the footprint of structures in the maritime domain
- Adapting to an ecologically sensitive site, by offering possibilities for eco-designs with high added value.

## Two versions are available, and both can be adapted in line with site conditions



The ACCROBERM<sup>™</sup> I is designed to stabilise the toes of armour facings in the most exposed locations. Its excellent stability stems from its conical circular shape, its very low centre of gravity and its vent holes.

This single component is a substitute for both the first row of ACCROPODE<sup>™</sup> units at the toe and the heavy stone toe berm. If necessary it can be anchored in the rock with tie rods, ensuring it remains stable even in the severest cases of wave attack. **The ACCROBERM™ II** is an economically viable option when the heavy stone toe berms would have to be excessively heavy or when an eco-design approach offers more significant advantages.

This ring-shaped unit creates a support at the toe of the structure offering new habitats that are well suited to target species of marine flora and fauna.



This unit is filled with rubble or materials that will attract larvae and juveniles as well as adults, either creating a new ecosystem or re-creating a preexisting one.





