



# Concrete Layer Assistance & Survey

## CLAS ESTABLISHED A CLASSIFICATION OF THE ARMOUR LAYERS

With our experience both in expertise on old books and full-time site assistance and monitoring, we have been the privileged witnesses of degradation that the quality of installation authorizes or does not allow, depending on whether it has been more or less rigorous. This classification concerns armour layers constructed with ACCROPODE™, ACCROPODE™II, ECOPODE™, CORELOC™ and X-bloc® blocks.

### Class B

Work whose durability is not guaranteed due to an unknown part of the quality of construction or non-repaired level 2 nonconformities and / or approval given on the basis of surveys submitted by the company and follow up without CLAS accredited diving inspectors.

ACCROPODE™ armour layer presenting major disorders and premature obsolescence.



Expertise of works built without the supervision of CLAS inspectors showed nonconformities that do not appear in as-built documents and construction site logs. Except in extreme cases, the direct consequences of these nonconformities are very difficult to assess, particularly the date of occurrence of the damages. These ACCROPODE™, ACCROPODE™II, ECOPODE™, CORELOC™ and X-bloc® armour layers must be considered as potentially fragile.

## CONCRETE LAYER ASSISTANCE & SURVEY

RES. PRAT DE BAIX D'ENVALIRA - EDIFICI F PORTA 2 - AD100 SOLDEU CANILLO - ANDORRA

[www.clascertification.com](http://www.clascertification.com)

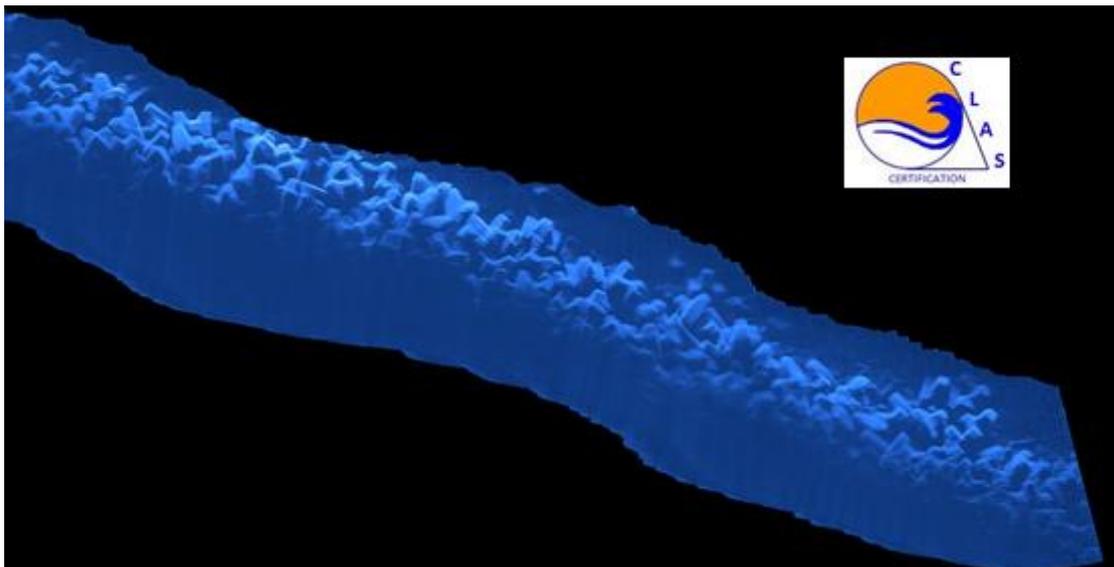


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ACCROPODE™ armour partly destroyed



The placement tools for the construction which one confers by mistake the virtues of tool of inspection and approval, do not make it possible to highlight all the nonconformities. The same goes for acoustic tools such as multibeam and acoustic cameras. We have tested and evaluated the most precise and modern acoustic tools. The IMCA and HSE approved professional diving qualifications of the CLAS inspectors allow them to dive to compare the reality of the construction with the computer generated images produced by these tools. This gives CLAS a considerable advantage and a more refined understanding of these tools and their limitations. Thus we have highlighted that there is a "mask effect" which makes the acoustic tools fixed on boats unreliable and often unable to highlight the defects of imbrication and the actual size of the holes.



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These tools also point to non-conformities that do not exist, penalizing companies that rely on advice based on these technologies. Based on the tests that we conducted until 2017, these tools can only be used once the recognized shell CLAS TECHNOLOGY COMPLIANT™. These tools also point to non-conformities that do not exist, penalizing companies that rely on advice based on these technologies. Based on the tests that we conducted until 2017, these tools can only be used once the recognized shell CLAS TECHNOLOGY COMPLIANT™ to make a survey that will be attached to the folder as-built as part of the future monitoring of the work. As part of this future monitoring, the comparison of old and recent images may highlight significant degradations. Otherwise, carapaces using ACCROPODE™, ACCROPODE™II, ECOPODE™, CORELOC™ and X-bloc® technologies should be classified as CLASS B armour protection to make a survey that will be attached to the folder as-built as part of the future monitoring of the work. As part of this future monitoring, the comparison of old and recent images may highlight significant degradations. Otherwise, carapaces using ACCROPODE™, ACCROPODE™II, ECOPODE™, CORELOC™ and X-bloc® technologies should be classified as CLASS B armour.

The project is potentially fragile and will require annual monitoring and preventive maintenance.

The CLASSE B armour layers do not receive the quality mark  because all our works have shown that with the presence of a CLAS inspector on the project the production is doubled and the work complies with CLASS A.

**CLAS has no interest in compromising on construction strategies that lead to the delivery of potentially fragile works.**

**Warning:**

*This classification and the CLAS TECHNOLOGY COMPLIANT™ trademark are protected by national laws and international conventions governing intellectual property. Consequently, any use of this classification and the CLAS TECHNOLOGY COMPLIANT™ mark is strictly prohibited, except with the written permission of CLAS (CLAS, Prat de Baix d'Envalira, AD100, Canillo, ANDORRA). We invite you to report any use that seems suspicious to verify the authenticity. CLAS disclaims all liability for the unauthorized use of its classification and mark; such unauthorized use may be particularly perilous (error in the compliance of the work, in particular), in addition to the risk of counterfeiting and unfair competition to which unauthorized users may be exposed. © CLAS - 01 March 2017.*

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