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Report on the use of the NCT - Nanocement product in tests for waterproofing in two works of the GEARH in the province of Havana and Mayabeque:

The first test was held in a section of the Gallery of the dam Coca in belonging to the provincial company of hydraulic exploitation of Havana and the second on a stretch of canal Pedroso Mampostón belonging to the Mayabeque hydraulics use Provincial company.

In general qualify tests satisfactory, exists the perception that we are in the presence of a product that would help definitively consolidate the rehabilitation of channels lined with concrete and galleries efficiently eliminating the scourge of losses by filtration.

Product NCT - Nanocement is preceded a great acceptance in the international market, backed by applications in a number of important works in different countries with highly satisfactory results, demonstrating his qualities as a sealer, as well as repair of the concrete considerably increasing their parameters of resistance and stopping corrosion of reinforcing steels.

In the testing the first very important aspect that can be seen is the ease of implementation of NCT - Nanocement, operation completely conventional masonry that requires no equipment or special conditions for its implementation.

For channels to cleaning them impose serious mechanical stress on joints, given the conditions and existing equipment for this work of maintenance, the solution of sealing with the NCT - Nanocement gives one high resistance, enough to fully support those efforts and maintaining its functionality and integrity.

The possibility of making a seal complete surface of the channel which includes the filling of joints with a proportion only 1.25 approximately NCT - Nanocement Kg per M², provides the security work for once

repair of the channel which guarantees their sealing for many years.

The second aspect of utmost importance and that it will require conditions for its implementation is the preparation of joints and the surface of the slabs for the repair work and sealing, work that it requires lifting the concrete or mortar joints that deteriorated, loose, and not this solidly attached to the structure of the concrete slab, this permit also clean all the land that is below of these boards and on which the mortar sealer not can join, so its eradication and the use of pressurized water blasting is essential.

The surface of the slab product from contamination by the use for years have inlays of salts, minerals, seaweed and other bodies that function as an insulating film that prevents the adhesion and penetration of the NCT - Nanocement in the pores of the concrete slab, which is why the surface and joints should be treated with hydrochloric acid, zalfumante or some other degreaser and washed later to ensure their cleanliness.

This at first glance seems complex, with the means is done quickly and safely.

On this surface longer clean will be repaired the Board and subsequently applied the NCT - Nanocement grout on the surface, achieving or total sealing of the canal, which in simple view you can see his uniform termination.

In the case of the dam the Coca Gallery, the NCT - Nanocement application tests, managed seal light leaks quickly, requiring more time and expertise for sealing leaks of consideration, given that cut the path of water filtration requires applications spaced in different areas allowing consolidation to continue with the process, be taken into account dealing with negative pressure against which the NCT -

Nanocement must go penetrating the cracks and pores making sealing thereof, which given the characteristics of the product is a process that lasts for several days and in which the product manages to penetrate inside the structure of the concrete using the pores and cracks between 50 and 150 mm, with which achieves an effective sealing of leaks.

The two treated areas located 6 points of filtration at an approximate total cost of 3 m³/day, accomplished seal definitely 5 points in the process of the trial, leaving one pending for having a wooden formwork under the Board of concrete that could not be extracted with the means available at that time.

As a rule in the process of sealing in the galleries started the work of sealed from the top of the vault down by both walls, concentrating cost in places then consolidated and sealed the area around it using a cue of the mortar placed in the hole and will remain under pressure from 3 to 5 minutes for sealing.

Two applications were conducted in the own gallery of the dam to repair and seal cracks in the concrete in the Center tube steel discharge of prey, experience that can be used for the maintenance of Centre pipes damaged steel.

Technical information of the product NCT - Nanocement and the results obtained in its application in international practice, indicates that we are in the presence of a material suitable for rehabilitation and sealing leaks in masonry and reinforced concrete works.

Carried out by:

Eng. Luis o. Rodriguez Hernandez

Professor Instructor of technologies in the CIH

Vice-President of the SIH - UNAICC