

## **A case study on application of solidification/stabilization technique for remediation of contaminated marine sediments in the Republic of Korea**

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Sediments in coastal areas where are adjacent to industrial complexes, ports and commercial facilities could be easily contaminated with harmful chemicals such as heavy metals. Solidification/stabilization is one of the ex-situ remediation methods which have been widely applied.

To evaluate the effect of solidification/stabilization method to apply ex-situ remediation, heavy metal leaching test was conducted from raw and solidified/stabilized sediments sampled at Masan bay (Korea) where polluted with heavy metals such as zinc and copper (over clean-up index of harmful chemicals,  $CI_{HC}$ , Korea). The sediments were treated with 4 agents under various conditions and cured. Then, leached heavy metals were analyzed following a standard toxicity characteristic leaching procedure (TCLP, USEPA).

In results, leacheable metal contents were significantly decreased in most elements even up to 99% (Ni, Zn, Cd, Pb) after solidification/stabilization treatment except for Cr.

It suggests that 4 different agents have potential to be used in remediation of marine sediments polluted with heavy metals. Furthermore, we can expect that the treated sediments could be beneficially used as coastal landfilling materials or soil filler. In further study, however, the studies on the effects of solidified/stabilized sediment on marine organisms are required.