

RECENT ADVANCES ON SEDIMENTS MANAGEMENT.

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ABSTRACT:

Over the world, several million of tons of materials, ranging from rocks to clays and with different amount and types of contamination, are dredged each year in harbours. Traditionally, the solution chosen to manage lightly contaminated sediments is the dumping at sea. Knowing the actual environmental constraints concerning the opening of new careers combined with increase in demand in roads construction field, the dredged sediments can be viewed as a new source of materials.

Our objective was to design a material with marine sediments, traditional granular materials and hydraulic binders, to be used in roads construction field. With an usual initial moisture content equal to 150-200%, the first operation consisted in preparing the dredged sediments by

reducing its initial water content and as a consequence the dissolved salts, then the sediments were characterized and finally a material giving satisfactory properties was designed.

The methodology developed consists in (figure 1):

- Studying the raw material, for better knowledge of its intrinsic characteristics,
- Studying the change of material characteristics due to storage conditions,
- Exploring beneficial re-use in road construction field by optimising a mix design based on fine dredged sediments, sand and binders,
- Validating the mixes design by mechanical as environmental tests.

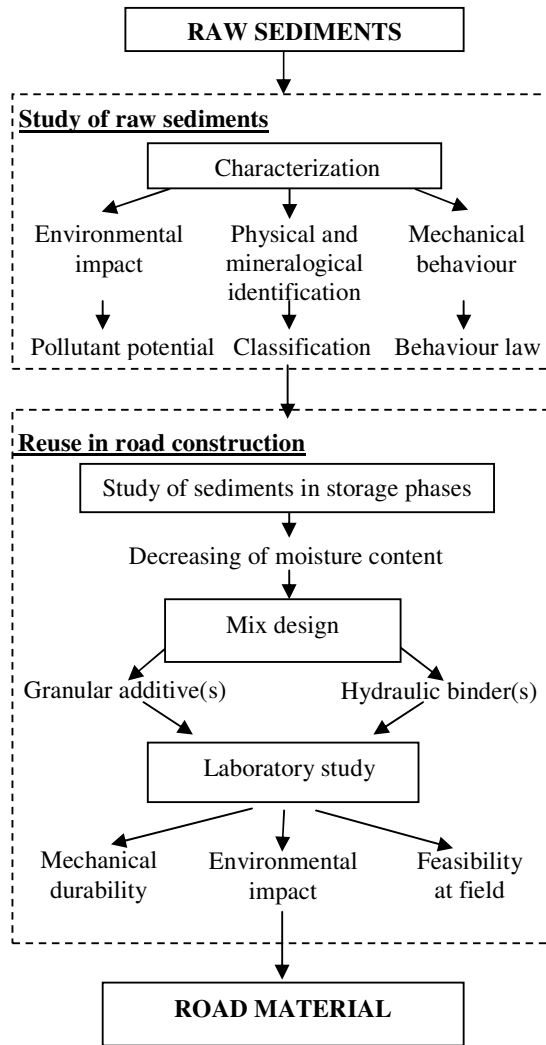


Figure 1. General methodology research work

In this paper, the aim is to investigate the combined effects of organic matters and salts on the raw material characteristics, and to demonstrate that the use of marine sediments in road techniques is possible.

Key words: Marine sediments, Organics matters, Mechanical behaviour, Roads construction