

The recent researches on nanomaterials and nanotechnologies have highlighted the potential use of nanomaterials in various fields. The construction sector can be a major beneficiary, with applications that can improve either the characteristics of building elements (when used on their surface) or the characteristics of conventional or advanced construction materials (when added to their matrices).

However, the use of nanomaterials in constructions is currently reduced, mainly for the following reasons: limited knowledge on nanomaterials suitable for constructions and their behaviour, lack of specific standards for design and execution of construction elements using nanomaterials, reduced market supply of nanoproducts, high costs, unknown health risks associated with nanomaterials, and poor recyclability of nanomaterials at the end of their lives.

In order to be able to use nanomaterials in the construction industry on a large scale, it is therefore necessary that research is carried out according to the following steps: (1) choice of nanomaterials of potential use in constructions, and study of their characteristics; (2) study of the behaviour of building elements that contain nanomaterials (that is, building elements made of nanocomposites) under different types of loading; (3) development of specific design and construction standards. As a matter of fact, a literature search indicates that the available information is incomplete.

Therefore, the main goal of the present project is to develop steps (1) and (2) in depth, both to overcome the lack of knowledge and to propose, in the context of step (3), predictive formulas to be implemented into the construction national standards.

Please submit your Abstract by December 20, 2022 and select the Thematic Symposium PRIN 2020 – NGOP.