

Impact details

MAIN IMPACT DETAILS

Possible application potentialities	
1)	Production of guidelines and/or technical codes for the structural design under both static and dynamic loadings of civil constructions involving the use of innovative materials.
2)	Development and testing of prototypes for industrial applications devoted to the seismic protection of both new and existing buildings.
3)	Definition of design methodologies for strengthening ancient masonry structures by using innovative materials and techniques, with particular reference to monumental and strategic buildings, whose collapse may lead to severe risks for public safety.
4)	Production of research publications (journal articles, technical reports, conference papers...) and worked-out case studies.
Scientific and/or technological impact of the project	
1)	Assessment of an up-to-date state-of-the-art concerning advanced systems of seismic protection of existing buildings by using innovative materials.
2)	Improvement of existing predictive models of the mechanical behavior of innovative materials.
3)	Development and validation of innovative numerical tools for the analysis of the mechanical behavior of innovative materials at different scales of observation.
4)	Development of integrated numerical simulation codes for the structural analysis and design involving the use of innovative materials.
5)	Development of a deeper knowledge level about future trends in structural retrofitting by using advanced materials and technologies as a suitable alternative to traditional solutions.
6)	Definition of mitigation strategies for historical buildings, through the design of adequate components and the development of specific devices for damage reduction.
Social and/or economic impact of the project	
1)	The proposed research addresses documented societal security needs, regarding the safeguard of human lives, the environment and the cultural heritage.
2)	The research addresses threats to society, since it may deal with the mitigation of the impact of natural and/or man-originated hazards on constructions.
3)	Promotion and dissemination of an increasing social consciousness of the relevance of the scientific research activity in the safety of constructions.