

# CIVIL AND ENVIRONMENTAL ENGINEERING

## DM 630/SINA - Safety assessment of reinforced concrete and prestressed reinforced concrete structures

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| <b>Funded By</b>                                                   | SINA SPA [Piva/CF:00847450152]<br>MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [Piva/CF:97429780584]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>Context of the research activity</b>                            | Safety assessment of reinforced concrete and prestressed reinforced concrete structures by means of non-linear numerical simulations.<br><br>Progetto finanziato dal PNRR a valere sul DM 630/2024 - CUP E14D24002410004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Objectives</b>                                                  | Infrastructure (e.g., bridges, viaducts and tunnels) are essential elements for social cohesion and economic efficiency in both developed and developing countries. Many infrastructures have a service life longer than that foreseen in the design and are also subjected to external actions (for example, traffic/vehicular loads and environmental actions) greater than those initially foreseen and to more severe environmental conditions (also due to climate changes) which are degrading the structural elements. It is necessary to provide a correct and reliable assessment of the safety of existing infrastructures also based on data from in situ and/or remote monitoring systems for a more sustainable management of the structural systems in order to identify appropriate retrofitting interventions. In this way, it is possible to reduce indirect and direct costs (costs, environmental impacts and consequences on the service of transportation networks) by maximizing the effectiveness of structural interventions. It follows that the problem requires the definition of new approaches and operational methods, different from those used to date for the safety assessment of existing infrastructures. |
| <b>Skills and competencies for the development of the activity</b> | Non-linear modelling of reinforced concrete structures, probabilistic analysis of reinforced concrete structures, safety assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

