



**POLITECNICO
DI TORINO**

Dipartimento
di Ingegneria Strutturale,
Edile e Geotecnica

PhD in Civil and Environmental Engineering

Research Title: Modelling and testing Ultra-High-Performance-Concrete (UHPC) structures

SESSION: SUMMER 2019

Funded by	Politecnico di Torino – DISEG Centro SISCON
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Context of the research activity	The aim of the research is to analyse a new structural material, called Ultra-High-Performance-Concrete (UHPC). It is an advanced cement-based composite with high compressive and tensile strength, and larger ductility and durability, if compared to conventional concrete. The research activities will be divided into two milestones: 1) analysis of slabs on grade and the effect of shrinkage; 2) modelling shear walls structures. In both of them, literature review is expected and numerical model should be provided. Test on slabs and shear walls must be performed also at different scales in order to validate the models. Finally, a handbook for practical application has to be proposed. The research project will be developed in collaboration with CEMEX (https://www.cemex.com)



Objectives	The purpose of the research is to extend the field application of UHPC both in shear walls and slabs on grade. Accordingly, the results will be published on international journal and the proposed models (and formulas) will be included in a practical textbook.
Skills and competencies for the development of the activity	Skills required: 1) Structural mechanics 2) Design of concrete structure 3) IT skills to model mechanical systems