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COST (European Cooperation in Science and Technology) is a pan-European intergovernmental framework. Its mission is to enable break-through scientific and technological developments leading to new concepts and products and thereby contribute to strengthening Europe's research and innovation capacities. It allows researchers, engineers and scholars to jointly develop their own ideas and take new initiatives across all fields of science and technology, while promoting multi- and interdisciplinary approaches. COST aims at fostering a better integration of less research intensive countries to the knowledge hubs of the European Research Area. The COST Association, an International not-for-profit Association under Belgian Law, integrates all management, governing and administrative functions necessary for the operation of the framework. The COST Association has currently 36 Member Countries.

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TOWARDS THE NEXT
GENERATION OF
STANDARDS FOR SERVICE
LIFE OF **CEMENT-BASED
MATERIALS AND
STRUCTURES**



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WWW.TU1404.EU
INFO@TU1404.EU
+351 253 510 248

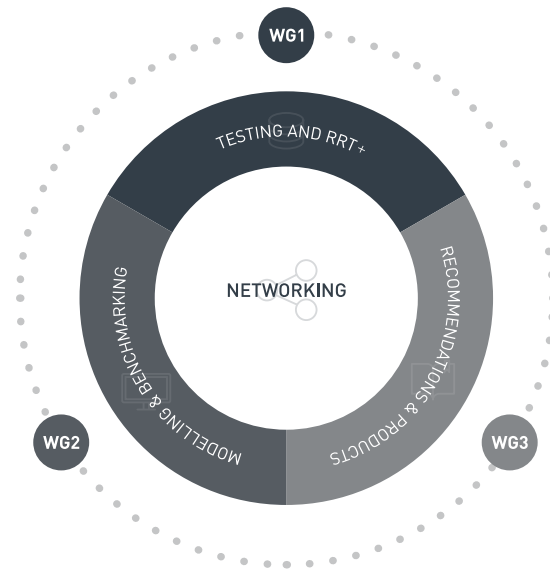
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MOTIVATION AND OBJECTIVES

Cement-based materials (CBM) are the foremost construction materials worldwide. Therefore, there are widely accepted standards for their structural applications. However, for service life designs, current approaches largely depend on CBM strength class and restrictions on CBM constituents. Consequently, the service life behaviour of CBM structures is still analysed with insufficiently rigorous approaches that are based on outdated scientific knowledge, particularly regarding the cumulative behaviour since early ages.

This results in partial client satisfaction at the completion stage, increased maintenance/repair costs from early ages, and reduced service life of structures, with consequential economic/sustainability impacts. Despite significant research advances that have been achieved in the last decade in testing and simulation of CBM and thereby predicting their service life performance, there have been no generalized European-funded Actions to assure their incorporation in standards available to designers/contractors.

Therefore, the main purpose of this Action is to bring together relevant stakeholders (experimental and numerical researchers, standardization offices, manufacturers, designers, contractors, owners and authorities) in order to accelerate knowledge transfer in the form of new guidelines/recommendations, introduce new products and technologies to the market, and promote international and inter-speciality exchange of new information, creating avenues for new developments.



NETWORKING TOOLS IN THE SCOPE OF COST ACTIONS

Short term scientific missions (STSM's), Training schools, Meetings, Workshops, Conferences and Dissemination activities. See more details about these tools in http://www.cost.eu/COST_Actions/networking. To join the action and become eligible to benefit from the networking tools, please check at www.tu1404.eu.

GENERAL LEADERSHIP

Chair: Miguel Azenha, University of Minho, Portugal
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General Secretary: Dirk Schlicke, Graz University Of Technology, Austria

WG1 TESTING OF CEMENT-BASED MATERIALS AND RRT+

Marijana Serdar, University of Zagreb, Croatia
Grega Tritnk, Igmat, Slovenia
Sreejith Nanukuttan, Queen's University Belfast, United Kingdom

Workgroup 1 deals with experimental testing of properties of cement based materials including eco concrete mixtures. The Extended Round Robin Testing Programme, also called RRT+ involves the sharing of raw materials for concrete, mortar and cement paste. More than 60 tons of cement and aggregates are disseminated among the participants in a common experimental program of unprecedented dimensions in the scope of cement-based materials.

WG2 MODELLING AND BENCHMARKING

Farid Benboudjema, ENS Cachan, France
Mateusz Wyrzykowski, Empa Switzerland

Workgroup 2 deals with modelling of cement based materials and reinforced concrete structures including service life-related aspects. The final objective is to integrate the conclusions to create a set of general instructions to be used in designing software. International benchmarking efforts are being made as to exchange knowledge and inter-comparison of modelling capabilities at different scales (from cement paste to structural level).

WG3 RECOMMENDATIONS AND PRODUCTS

François Toutlemonde, Ifsttar, France
Terje Kanstad, NTNU Trondheim, Norway

Proposals for comprehensive and upgraded test standards and development of associated devices constitute a first objective of Workgroup 3. This group will propose a methodology compatible with the Eurocode standard format to address thermo-hydro-mechanical coupled effects in serviceability design. They will focus on identified shortages of present reference documents and on mature developments of tests, products and methods, to contribute to standards and guidelines improvement in the field of service-life design.

