

WG 3 – Development of products and recommendations

Strategic view

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WG 3 - Motivation

- Favour best practice in concrete technology, especially related to control of early age issues / early cracking by means of new developments in testing and simulation
- Account for combined environmental effects and load actions to address serviceability issues
- Prevent early ageing or serviceability shortages (e. g. defective tightness, uncontrolled cracking)
- Assist bridging the gap between the research and industry in regard to the development of new products (materials, testing and modelling)

WG 3 - Objectives

- to **improve design standards and recommendations** related to concrete, and associated **material characterization / specification**, with respect to the risk of early ageing, cracking or serviceability shortages
- to increase **durability and sustainability** of constructions in Europe particularly with long service life expectancy / "strategic" ones (critical transport & energy infrastructures) or representing high value assets due to their number (current bridges and buildings)
- to ensure **better operability** of constructions due to reduced maintenance works
- to favour **cost-efficient optimized solutions** based on application of the rational methods validated in WG1-2
- to improve **consistency of serviceability provisions** for concrete buildings, bridges and water-retaining structures in the revised European standards, avoid inconsistent national annexes and favour a unified engineering approach
- to support the **development of new products** together with the industry partners (both at the level of experimental equipment and software)

Scope of the WG3

The Action has a special focus on Standards and methods in relation with present unsatisfactions in standards and practice and based on the results of WG1 and WG2

- Control of early-age cracking
- Accounting of restraints and imposed deformations in combination with external loadings
- Control of cracking in relation with tightness, serviceability and durability issues

Progress in accepted testing and calculation methods is a key step

- Determination of the coefficient of thermal expansion, early age shrinkage, evolution of moisture diffusion
- Updated concrete specification of relevant physical parameters
- Accounting for scatter in properties and rational determination of margins

Workgroup structure of WG3

Group priorities:

- GP3.1 – Development of test equipment / monitoring methods
- GP3.2 – Development of software and design methods
- GP2.3 – Development of recommendations and pre-standard documents

The content of these priorities is connected to the progress of tasks in the WG1 and WG2.

It is also related to recognized shortages in present standards and unsatisfactory practice.

WG3 Tasks and methods

- **Preparation** of pre-standards, recommendations, qualified testing equipments and software tools **as soon as WG1 and WG2 advances are mature enough**
- **Pro-active dissemination** of pre-standards and draft recommendations to better address possible implementation issues and **formal organization of discussions** to answer stakeholders expectations
- Attention to **appropriately fit** in the calendar of standards revision and architecture
 - Participation in meetings and workshops of WG1 and WG2
 - Interaction with meetings of standardization TCs / SCs / WGs
 - Intermediate specific meetings dedicated to the progress of tools, recommendations and standards to be developed.

Thank you for your attention.