

Objective: Technical and Practical Aspects on Sprayed Concrete for Underground Structures.

Tentative Programme

Day 1

Session1: Introduction and overview

Application and Use of sprayed concrete for Ground Support and Repair/Strengthening of Underground Structures; Main methods of application

- 09.00 – 09.30: Welcome and Opening: ITA and concerned country representatives
- 09.30 – 10.30: Short overview of case histories for ground support and building / repairing / strengthening underground structures (state of the art)
- 10.30 – 11.00: Coffee break
- 11.00 – 11.45: Main methods of Application: Wet, Dry, Moist
- 11.45 – 12.30: Preparation of substrates for structural repair/strengthening
- 12.30 – 14.00: Lunch

Session 2: Mix design and Components

- 14.00 – 14.45: Specificities of mix design of Wet-Sprayed Concrete compared to poured concrete
- 14.45 – 15.30: Specificities of mix design of Dry/Moist-Sprayed Concrete
- 15.30 – 16.00: Coffee Break
- 16.00 – 16.45: Main technical specifications on components (requirements to introduce in tender documents)
- 16.45 – 17.30: Structural and other types of Reinforcements (against fire...)
- 17.30 – 18.00: Questions and Answers

Day 2

Session 3: Certification and Control

- 09.00 – 09.45: Why Certify Nozzle Operators? Manual/Robotic application, presentation of existing certifying bodies
- 09.45 – 10.30: Organising Pre-construction Tests, Quality Control, Working Procedures
- 10.30 – 11.00: Coffee break
- 11.00 – 11.45: Specific tests for Sprayed Concrete – part 1: on fresh concrete
- 11.45 – 12.30: Specific tests for Sprayed Concrete – part 2: on hardened concrete
- 12.30 – 14.00: Lunch

Session 4: Case histories (including Design, Scheduling and Costs Aspects) and future developments

Numerous case histories must be available. The choice between them will be based on the audience and the available speakers; below is exposed an example suitable for an audience of owners concerned with tunnel repair.

- 14.00 – 14.45: The “Moist-process”: Repair Works of the Channel Tunnel after fire (comparison between the first and second works, design methods, impact on scheduling and on Health and Safety Issues)
- 14.45 – 15.30: Enhancements of capacity in operated tunnels (guaranteed early strength concrete, water incomes treatments, special equipment for dust control, works interruption...)
- 15.30 – 16.00: Coffee Break
- 16.00 – 16.45: Independent shells to repair tunnels (all types of existing methods)
- 16.45 – 17.45: Future development of Sprayed Concrete lining and associated methods; discussions
- 17.45 – 18.00: Closing

Another possible training session: Certification of nozzle operators