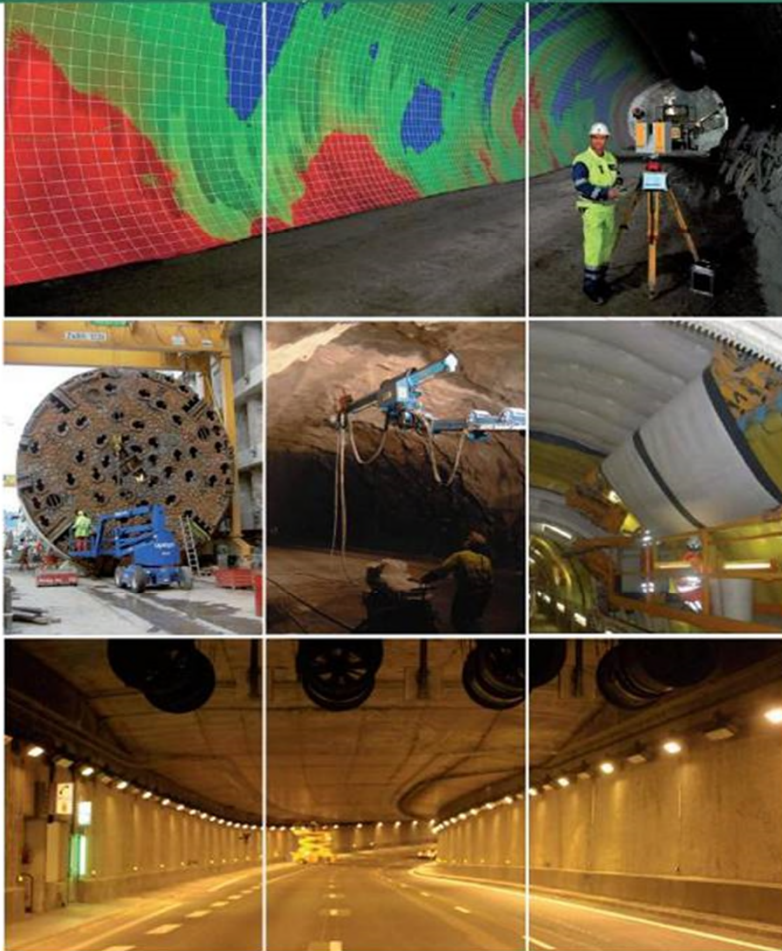


The goal of this committee is to promote new and state of the art construction technologies and methods for the sustainable development of underground space.

The ITAttech activity groups include all processes related to underground construction such as Investigation, Excavation, Support, Lining and Waterproofing, Installation and Interior works, Monitoring, Rehabilitation, Design.

Participation in ITAttech Activity Groups is open to ITA Corporate Members (in principal, Prime Sponsors and Supporters) willing to involve themselves in the development of new technologies. ITAttech Activity leaders are designated by ITA Prime Sponsors.



The ITAtch Activity Groups include all processes related to underground construction. They consist of seven + one sub-groups organized within relevant activities.

Committee on technologies :

Develop technical ideas and concepts based on emerging technologies for the future underground industry.

Establish technical guidelines and recommendations as a basis for safe and future standards.

Recognize early market and industry trends and needs that will influence business.

Create common understanding and acceptance of technologies as a basis for market uptake.

ITAttech is led by a Steering Board

The Steering Board is formed by:

Daniel Ruckstuhl (chairman), **Felix Amberg**, **Enrico Dal Negro**, **Ross Dimmock**, **Gustav Bracher**, **Lok Home**, **Martin Knights**. **Olivier Vion**, ITA Executive Director is taking care of the secretariat. **Rick Lovat** is the tutor of the committee.

All meetings are conducted in English. Documents are only available in English.



ACTIVITY GROUP

ITAtech Information & Contact

AG EXCAVATION

Lok Home - The Robbins Company - Email: HomeL@robbinstbm.com

Sub-AG Mechanised

Lok Home - The Robbins Company- Email: HomeL@robbinstbm.com

Sub-AG Flexible Excavation

Juha Kukkonen – Sandvik - Email: juha.kukkonen@sandvik.com

AG SUPPORT

Gustav Bracher – Sika - Email: bracher.gustav@ch.sika.com

Sub-AG FRCPS

Daniel Ruckstuhl - Email: daniel.ruckstuhl@glattnet.ch

Sub-AG Bolts & Arches

Karl Boehm - Dywidag-systems- Email: Karl.Boehm@dywidag-systems.at

Sub-AG Sustainable Sprayed Concrete

Lars Hage – BASF - Email: lars.hage@basf.com

AG LINNING & WATERPROOFING

Ross Dimmock Normet - Email: ross.dimmock@normet.com

AG MONITORING

Felix Amberg – Amberg - Email: famberg@amberg.ch

Sub-AG Frequency of Measurements

Eric Gastine - ITMsoil - Email: eric.gastine@itmsoil.com

Sub-AG Communication Sytems

Klaus Rabensteiner Geodata – Email: Klaus.rabensteiner@geodata.at

Sub-AG Remote Measurements

Olivier Schneider - Amberg - Email: oschneider@amberg.ch

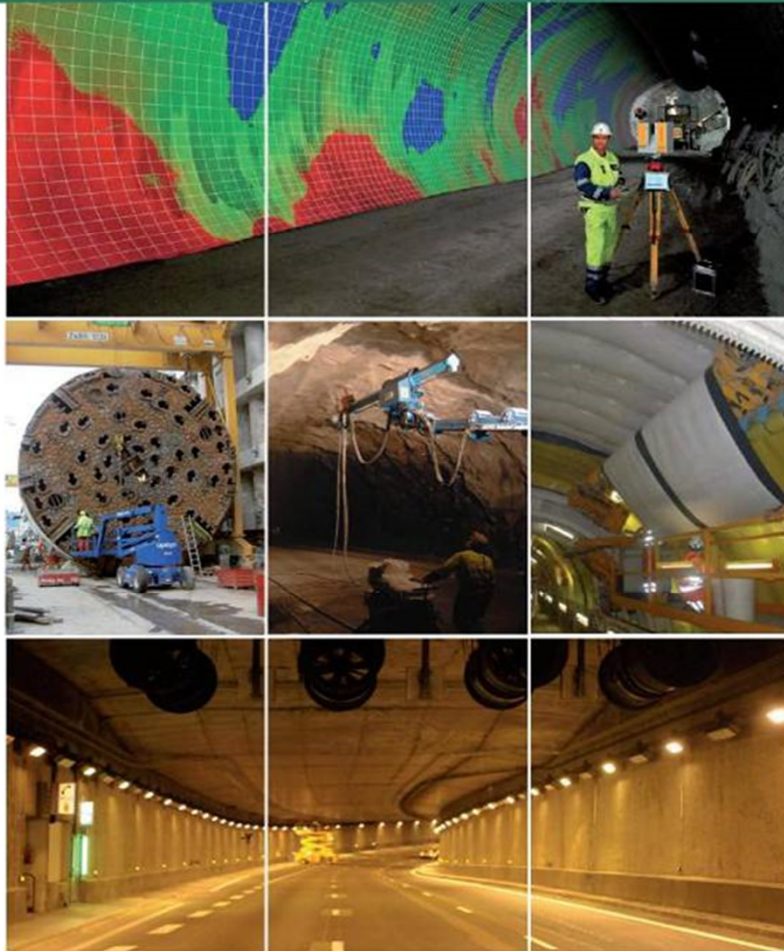
AG REHABILITATION

Enrico Dal Negro – Mapei - Email: hq.utt@utt.mapei.com

AG DESIGN

Martin Knights – Ch2mhill- Email: knightsmc@ch2m.com

ITAtech Information & Contact



ITA-AITES Secretariat

c/o EPFL

GC D 1 402 (Bât. GC)

Station 18

CH - 1015 Lausanne

Switzerland

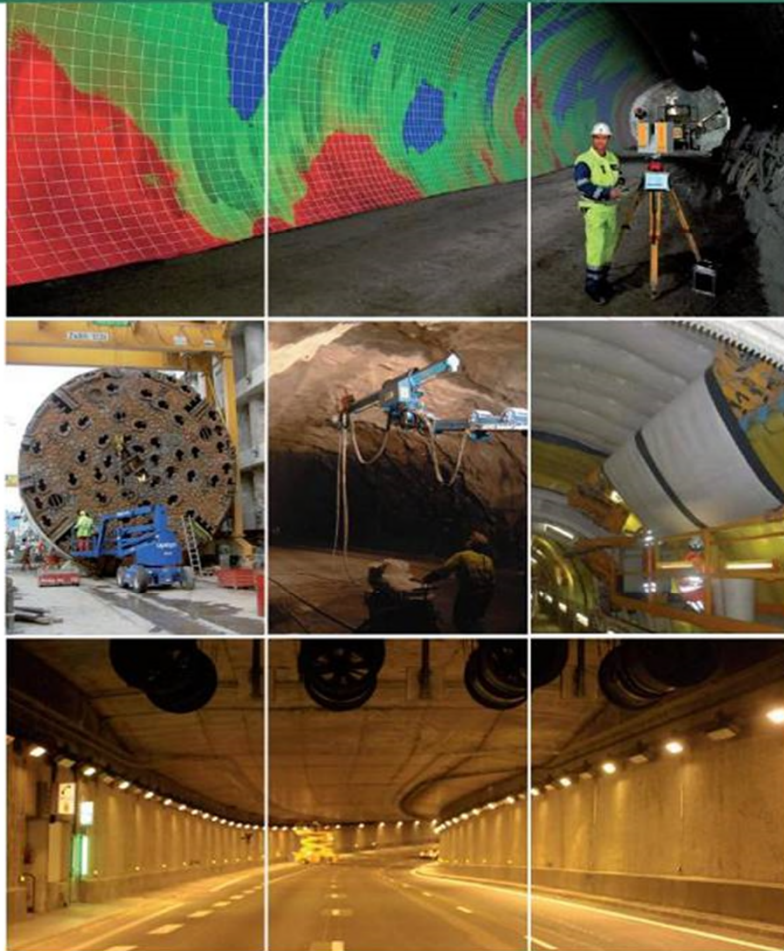
Tel: + 33 69 587 13 85

Fax: + 41 21 693 41 53

E-mail: secretariat-itatech@ita-aites.org

Web: www.ita-aites.org

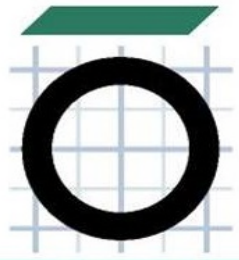
Participants



Prime Sponsor :
The Robbins Company
Sandvik Mining and Construction Oy
Atlas Copco Rock Drills AB
BASF Construction Chemicals
Bekaert NV SA
Herrenknecht AG
Swiss Tunnelling Consultants
MAPEI SpA
Normet International Ltd
SELI SpA
Sika Services AG

Supporters :
Bouygues Travaux Publics
CBE Group
Datwyler Sealing technologies
Hagerbach Test Gallery Ltd.
Halcrow a CH2MHill company
Hitachi Zosen Corporation
Trelleborg Ridderkerk BV
SWS Engineering





ITAtech

EXCAVATION

Achievements

GUIDELINES ON STANDARD INDICATION OF LOAD CASES FOR CALCULATION OF RATING LIFE (L10) OF TBM MAIN BEARINGS

Tunnel owners, consultants, and contractors require assurance of adequate Main Bearing L10 Life for Tunnel Boring Machines with rotary cutterheads. This document sets out a standardized method of indicating the Main Bearing Load Assumptions. It provides a common baseline to facilitate the comparison of load assumptions and therefore the resulting L10 bearing lives offered by various tunneling machine manufacturers.

GUIDELINES ON BEST PRACTICES FOR SEGMENTS BACKFILLING

This document is a guideline to the best practices on backfill grouting. It is intended to address the various considerations when applying backfill grout. It does not address the theory or details of applying, or mixtures of, the backfill grout itself, but does give reference for such theory and application. The document gives general guidelines: site and machine-specific guidelines should be developed based on this document as well as the project specifications.

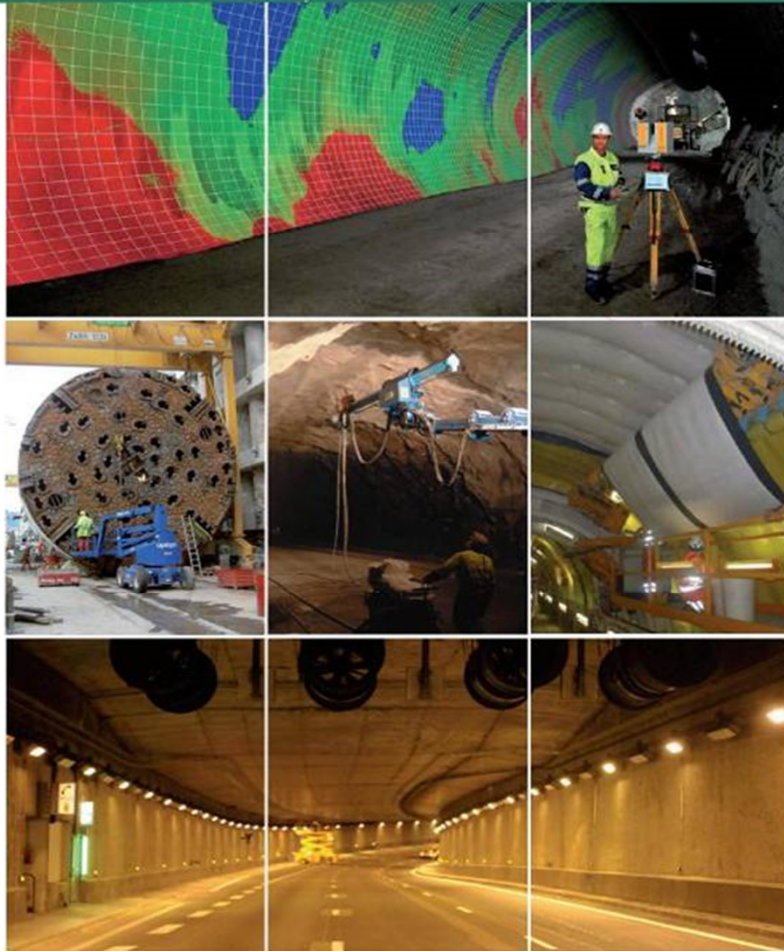
Goals

- New – Rebuilt – Used tunnel equipment on major tunnel projects document defining:
 - a) New (all new parts)
 - b) Newly Designed for the Project (allowing a mixture of New and Rebuilt parts)
 - c) Rebuilt (by qualified rebuild company)
 - d) Used (with no qualification on condition)
- Criteria to choose TBM
 - TBM New or rebuilt: What is a machine delivery “NEW”

Sub AG **Flexible Excavation**

- Kick off meeting to be held at Iguassu

Participants



Prime Sponsor :

BASF Construction Chemicals
 Bekaert NV SA
 Herrenknecht AG
 MAPEI SpA
 Normet International Ltd
 SELI SpA
 Sika Services AG

Supporters :

Bouygues Travaux Publics
 CBE Group
 Datwyler Sealing technologies
 Denka Chemicals GmbH
 Dywidag-Systems International GmbH
 Elasto-Plastic Concrete (Europe) Ltd
 Hagerbach Test Gallery Ltd.
 Halcrow a CH2MHill company
 Holcim Group Support Ltd
 Officine Maccaferri SpA
 Morgan Sindall
 OTB Concrete Ltd
 Propex Concrete Systems Ltd
 Putzmeister Iberica
 VMT GmbH
 Bonar LTD
 Systra



Achievements

FRCPS Sub Activity Group

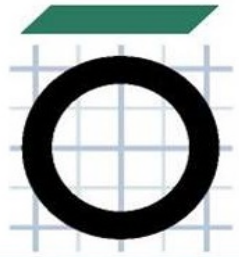
- Design section will be presented during WTC 2014
- Design, specification, and sustainability section completed and being currently reviewed internally

BOLTS & ARCHES Sub Activity Group

5.9.2013 Kick-Off Vienna: concept and goals of Sub-AG explained, index of contents for working document finished, Sub-groups for working topics formed,

16.11.2013 Stuttgart: structure and first text passages for draft document

SUSTAINABLE SPRAYED CONCRETE Sub Activity Group



ITAtech

SUPPORT

Goals

FRCPS Sub Activity Group

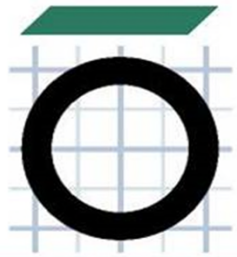
- Project references collected but not yet selected
- Complete guideline document ready for review

BOLTS & ARCHES Sub Activity Group

The working document does have a clear structure and must be filled with contents before the first draft version is finished.

Before this process starts a test text passage about pipe umbrella support should be reviewed by the design group.

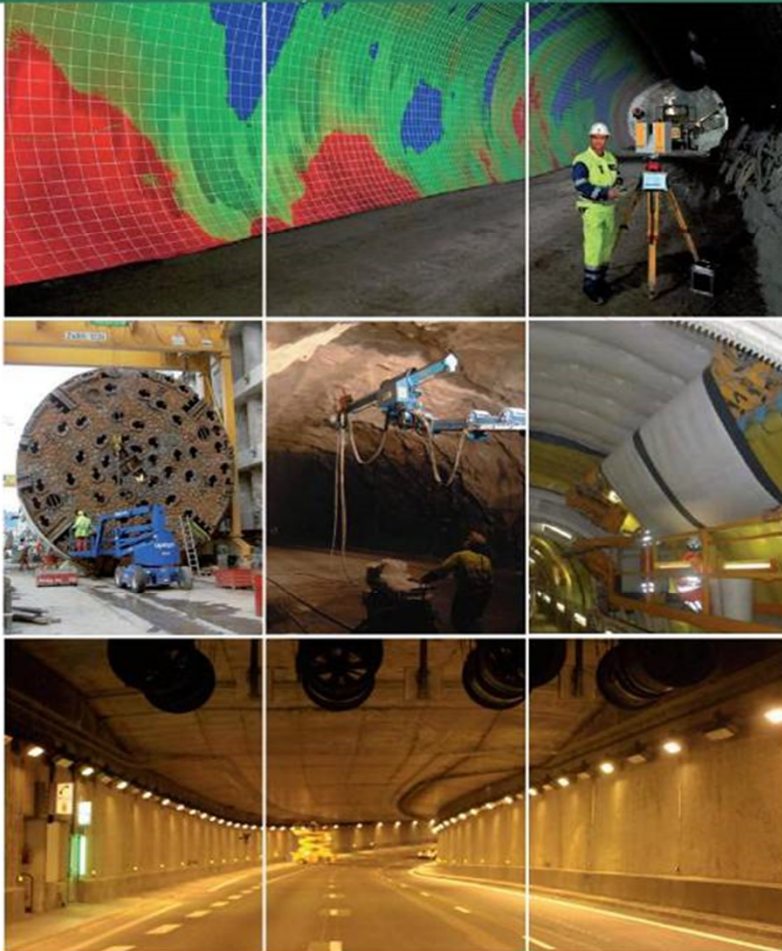
SUSTAINABLE SPRAYED CONCRETE Sub Activity Group



ITAttech

LINNING & WATERPROOFING

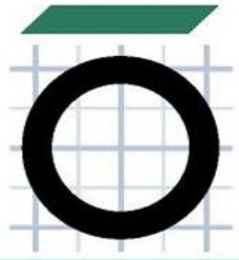
Participants



Prime Sponsor :
BASF Construction Chemicals
MAPEI SpA
Normet International Ltd
Sika Services AG

Supporters :
Hagerbach Test Gallery Ltd.
Babendererde Engineers GmbH
Stirling Lloyd Polychem Ltd
Wacker Chemie AG
Hydromat Ltd
Giertsen Tunnel AS





ITAtech

LINNING & WATERPROOFING

Achievements

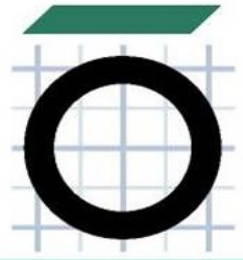
DESIGN GUIDANCE FOR SPRAY APPLIED WATERPROOFING MEMBRANES

This guidance document has been written to assist tunnel designers, contractors and owners in understanding the benefits of and limitations in the use of spray applied waterproofing membranes in excavated tunnels and shafts, and to provide guidance in drawing-up specifications and design details.

DEMINAR

Just before the WTC in Geneva a DemInar has been organized in Hagerbach on sprayable waterproofing membranes.

A video of the DemInar has been prepared, it is available on ITA YouTube Channel



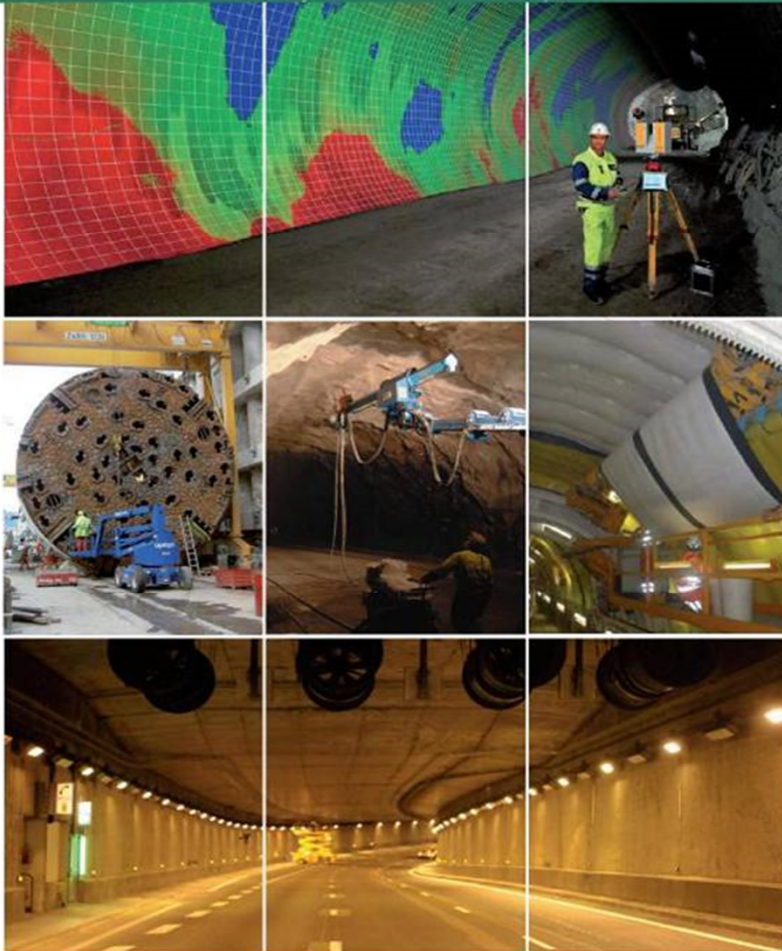
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LINNING & WATERPROOFING

Goals

Lining and Waterproofing Activity Group is now working on training related sprayable waterproofing membranes.

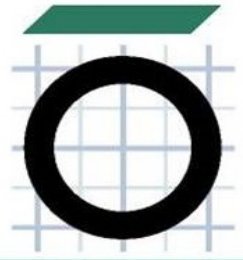
Participants



Prime Sponsor :
Atlas Copco Rock Drills AB
SELI SpA

Supporters :
Geodata Group
Babendererde Engineers GmbH
Amberg Engineering AG, Switzerland
Harvey Parker & Associates, Inc.
Astrium Services





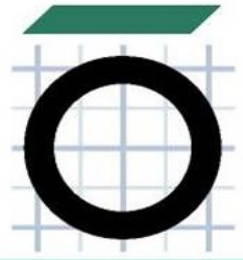
ITAtech

MONITORING

Achievements

GUIDELINES ON MONITORING FREQUENCIES IN URBAN TUNNELLING

Responding to an increasing demand of underground infrastructures monitoring of hydro-geotechnical and structural parameters during the construction of urban tunnels in soils and rock (except hard rock) is a field of activity which has seen impressive technological changes and progress in the past years. monitoring has thus become an essential part of the overall risk management which normally is implemented for such type of construction works.



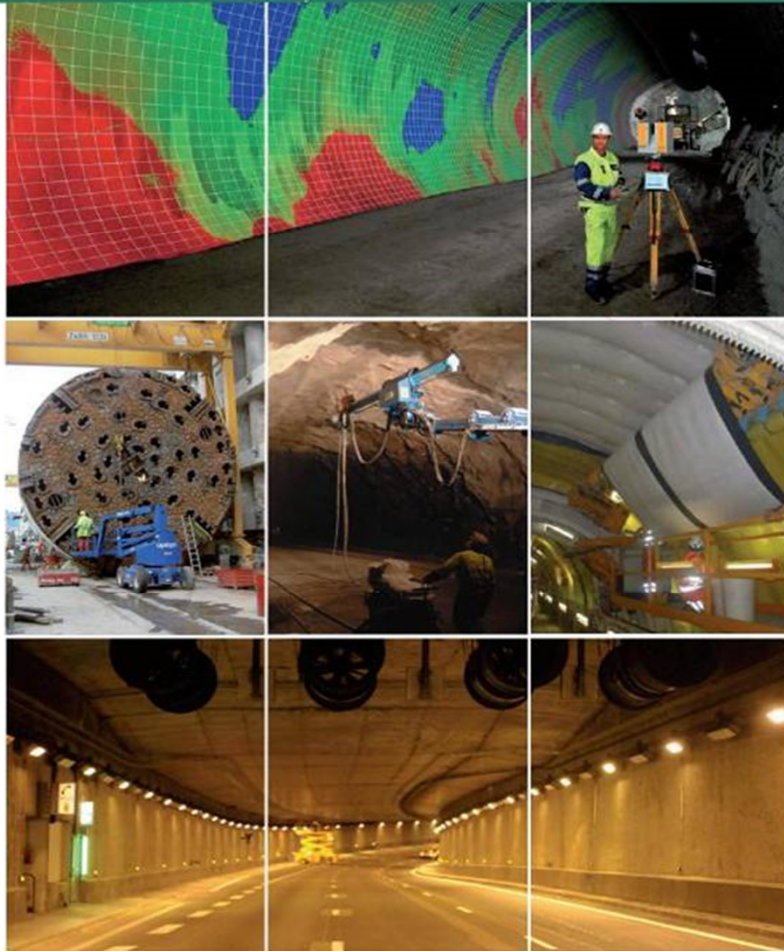
ITAtech

MONITORING

Goals

The draft of the Guideline on Remote Measurements to be printed 1.Q 2015

Participants



Prime Sponsor :

BASF Construction Chemicals

MAPEI SpA

Normet International Ltd

Sika Services AG

Supporters :

CBE Group

Denka Chemicals GmbH

Dywidag Systems International GmbH

Geodata Group

Giertsen Tunnel AS

Mott MacDonald Ltd

Ramboll

Hagerbach Test Gallery Ltd.

Wacker Chemie AG



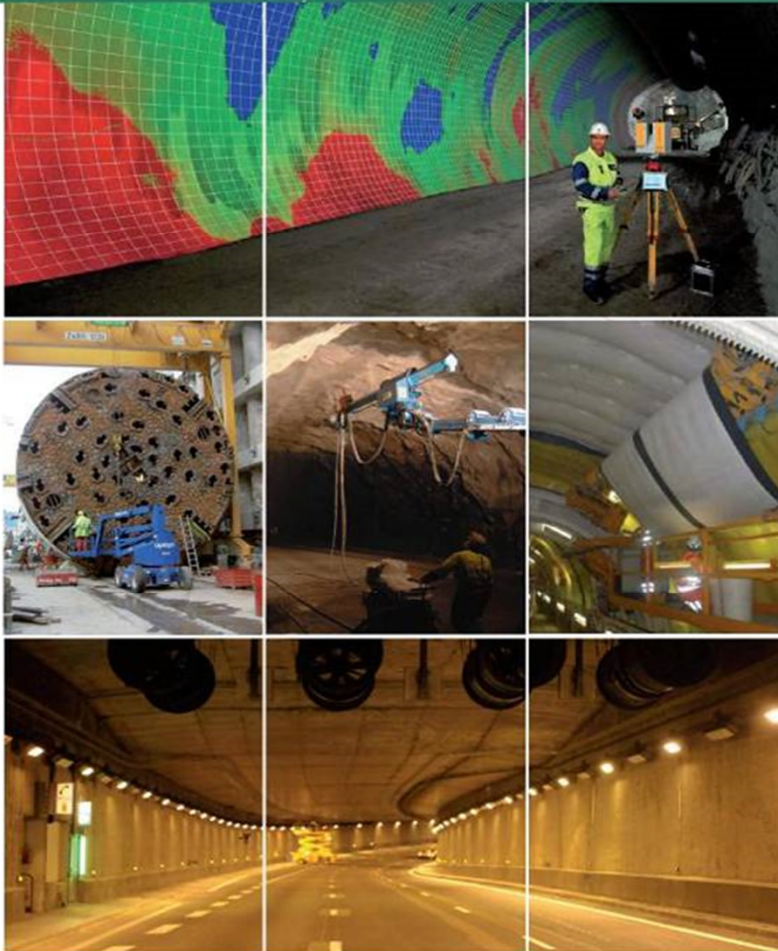
Goals

Develop the structure of the final document proposed during the 5th meeting in Milan.

Compare and analyze the documents that participants have selected as significant documents concerning rehabilitation of tunnels.

Divide the group into sub activity groups depending on best practice of each member country.

Participants



Supporters :

AECOM

Amberg Engineering AG, Switzerland

ARUP

COWI A/S

Geodata Group

Halcrow a CH2MHill company

Mott MacDonald Ltd

Ramboll

Systra

PB World

AECOM

**AMBERG
ENGINEERING**

ARUP

COWI

GEODATA

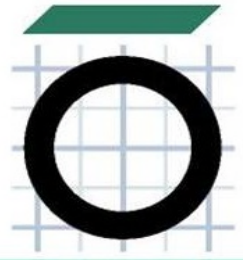
Halcrow A CH2M HILL COMPANY

Mott MacDonald

RAMBOLL

SYSTRA
CONFIDENCE MOVED THE WORLD

**PARSONS
BRINCKERHOFF**



ITAtech

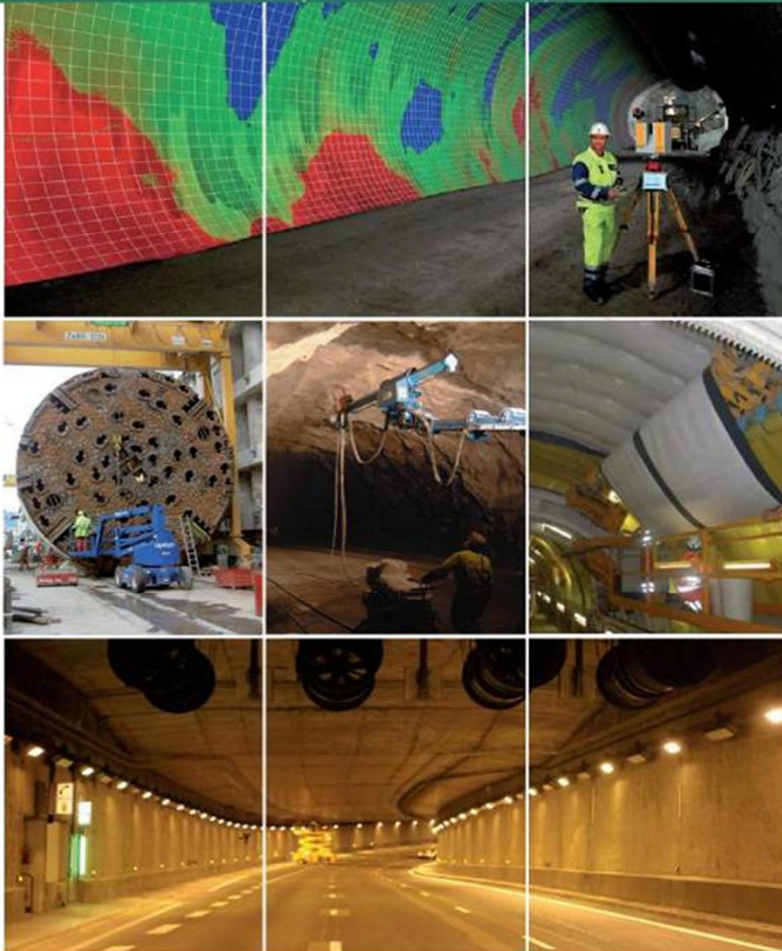
DESIGN

Achievements

- This year DAG been requested to review the proposed Fibres for precast tunnel concrete segments.
- Also a draft Guideline on TBM main bearing has been issued for review by DAG later this year.

Goals

- Working with other Activity Groups
- The co operation role of Design AG
- Sprayed Waterproofing Membranes
- Monitoring
- Future co operation



The goal of this newly created committee is to promote new and state of the art construction technologies and methods for the sustainable development of underground space.

The ITAttech activity groups include all processes related to underground construction such as ***Investigation, Excavation, Support, Lining and Waterproofing, Installation and Interior works, Monitoring, Rehabilitation, Design.***

Participation in ITAttech Activity Groups is open to ITA Corporate Members (mainly **Prime Sponsors and supporters**) willing to involve themselves in the development of new technologies. ITAttech Activity leaders are designated by ITA Prime Sponsors.



GOALS & MEMBERSHIP

TARGET GROUP

Participation is open to all companies involved in the tunnelling industry. Inside we want to cover the whole scope of the tunnelling construction process from the investigation works to the equipment and rehabilitation as well as design.

To be active member of ITAttech activity groups it is needed to be member of ITA through a Corporate Affiliate Membership (you can download an application form [here](#)) and to be really involved in becoming an ITA Supporter or an ITA Prime Sponsors.

Activity group leaders are coming from the companies that are ITA Prime Sponsors

BENEFITS OF MEMBERSHIP

ITAttech members will be able to participate inside various activity groups (see activities) and work as well propose topics for studying new technologies with the final goal to review them and when approved promote them into the tunnelling market.

Prime Sponsors





GOALS & MEMBERSHIP

Prime Sponsors



BUILDING TRUST



Supporters

AECOM

AKKORD
savijärvi rakentamis- ja investointi
palveluyritys

ALDEA
SERVICES LLC
RELIABLE RESOURCES DEL VERDE

ARUP

ASTRIUM
AN EADS COMPANY

**BABENDERERDE
ENGINEERS**

Bonar
partners in performance

**BOUYGUES
TRAVAUX PUBLICS**

dbe
Group

**REC
CREC**

COWI

DATWYLER

DENKA

DSI

epc
Elasto Plastic Concrete

**GC
GEOCONSULT**

GEODATA

GEODATA
GEOENGINEERING CONSULTANTS

Tunnelduk
GIERTSEN Tunnel AS

V-S-H-

Walcrow A CH2M HILL COMPANY



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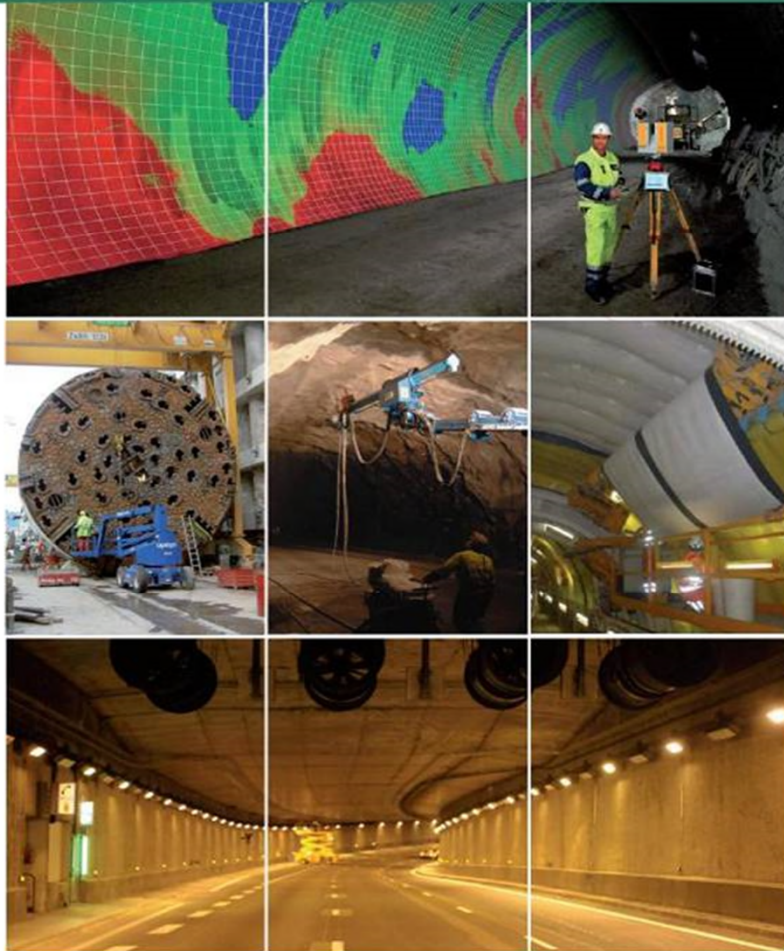
Ititech Zoson Corporation

Supporters





ITATECH BENEFITS



Improved information exchange on technologies and development between suppliers, contractors and consultants.

One voice policy for the underground industry; clarity for stakeholders

A *best practice* source for designers and specifying engineers.

Fast and secure technology transfer into the market

**BE PART OF THE DEVELOPMENT OF NEW
TECHNOLOGIES. JOIN ITATECH**

For more information, visit ITA website at www.ita-aites.org