

INTERNATIONAL SOCIETY FOR SOIL MECHANICS AND GEOTECHNICAL ENGINEERING



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ISSMFE – TC 17, Technical Activity Report

Compte rendu des activités de la CT N° 17

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I. INTRODUCTION

The prime mission of the ISSMFE, TC-17 is to foster worldwide technology transfer and know-how exchange, that will effectively contribute to advancing the state of engineering and construction practice and accelerate reliable use of innovative ground improvement geosystems for a variety of engineering applications. To achieve this goal specifically, in the areas of ground improvement, reinforcement and grouting, where practice has always preceded research and analytical developments, effective interaction between government, industry and academia must be established. Indeed, the Committee in its present profile represents all the different ingredients of the ground improvement community. TC17 today involves 27 country members and 46 delegates who are nominated by the President of the International Society.

In order to achieve these goals, the Committee has, over the past seven years, focused on promoting and developing effective technology transfer amongst the different country members of the ISSMFE and worldwide beyond these country members.

The overall scope of interest of the Committee cover a wide variety of ground improvement technologies that, can be broadly classified into three categories:

1. Ground Improvement
2. Soil Reinforcement
3. Grouting and Admixtures

TC-17 workplan, involves primarily the following tasks:

- i. Development of an International Knowledge Database on Ground Improvement Technologies (IKDGIT)
- ii. Publication of an International Journal on Ground Improvement
- iii. Special series of International Conferences on Ground Improvement Geosystems (ICGIGS) co-sponsored by the host national society and the ISSMFE-TC-17 as well as co-sponsorship of selected specialty workshops.

To accomplish this workplan, promote international cooperation towards its accomplishment and effectively disseminate the results, an International Technology Transfer Center for Ground Improvement Geosystems was established at the Polytechnic University, New York, and a network of regional centers to be located at the different country members is being created. Under the leadership of the committee members, regional centers are presently being developed (or considered) by the Port and Harbor Research Institute, Japan, at Tianjin's Port Authority, China, at the Swedish Geotechnical Institute, at the University of Ghent, Belgium, and at the Asian Institute of Technology, Bangkok.

A WWW ISSMFE-TC-17 site has been established to keep the international geotechnical community abreast of the development of the TC-17 sponsored activities and provide an effective communication tool to the committee members: Site address: <http://tc17.poly.edu>. In the following, we will briefly summarize the state of progress with regard to each one of the committee activities.

II. INTERNATIONAL KNOWLEDGE DATABASE FOR GROUND IMPROVEMENT TECHNOLOGIES (IKDGIT)

During the past two decades, a wide variety of ground improvement technologies have been developed with local experience around the world. While basic engineering concepts behind each technology are widely known, the complex know-how of design and construction has not yet been fully accessible to many in the profession. It requires a reliable, efficient and interactive technology transfer process and geographical expansion of locally based experiences.

Recognizing this critical need, the Technical Committee-17 of the International Society of Soil Mechanics & Foundation Engineering (ISSMFE-TC-17) has undertaken a coherent international effort to bridge this gap through the development of a computer aided technology transfer process. This project, sponsored by the United Nations Development Program, the US Federal Highway Administration and the participating National Societies, is called IKDGIT (International Knowledge Database for Ground Improvement Technologies). IKDGIT is to serve engineers by responding to specific engineering queries that are critical and frequently posed during various phases of planning, design and construction of ground improvement projects from different countries. Such a system will help an engineer retrieve information such as possible technologies for the project, similar case histories, problems encountered, possible remedial action schemes, comparative cost data, QA/QC, engineering specifications, applicable codes, etc. The engineer may use the information to supplement his own experiences and allow for comparative analysis to be part in developing the design and construction recommendations for the project. The database is designed to provide the engineer with access to experiences from around the world specific to a selected technology, application, or country.

When this effort is expanded sufficiently to incorporate a large amount of high quality records of experiences on different technologies from different countries, it would assist the engineer in selecting and comparatively evaluating the most appropriate technology suitable for a specific project.

For the development of the International Knowledge Database for Ground Improvement Technologies (IKDGIT), it is envisioned that through the network of regional centers

Committee members will participate not only in data collection, but also in the evaluation of the available data, so that any data accessible to the international community through the IKD would have been evaluated by the experts of TC17. However, the Committee cannot accomplish its objectives without the strong support and the active participation of the world wide geotechnical community in its activities.

III. INTERNATIONAL JOURNAL ON GROUND IMPROVEMENT

The journal, published under the aegis of the International Society for Soil Mechanics and Foundation Engineering with TC-17 as the Editorial Board and Thomas Telford Services Limited as the publisher, is specifically designed to create a worldwide process of technology transfer and to provide an effective "fast-track" vehicle for the dissemination of news regarding technological developments, feasibility studies and innovative engineering applications.

Ground Improvement aims to publish high quality, practical papers and technical notes on all aspects of ground improvement, soil reinforcement, and treatment by grouting and admixtures. The journal is intended to be of interest to engineers, specialty contractors and academics involved in the development, design, construction, monitoring and quality control aspects of ground improvement across a wide range of civil and environmental engineering applications. With simultaneous publication on the Internet, the journal is designed to provide a 'fast-track' mechanism for the dissemination of news about technological developments, analytical advances, performance evaluations, pilot and model studies, instrumented case histories and innovative applications of existing technologies.

The inaugural issue was published in Jan. 1997. The first volume, containing four issues is now available with high quality technical papers from industry and research institutions on case studies, full scale experiments and the latest technological developments in the various country members of TC-17. The Best Paper Award was awarded this year by Hayward Baker - A Keller Company to "Properties of cement-treated soils in Trans-Tokyo Highway Project" by Tatsuoka, University of Tokyo, Japan, K. Uchida, K. Imai, T. Ouchi, Trans-Tokyo Bay Highway Corporation, Tokyo, Japan, and Y. Kohata, Railway Technical Research Institute, Tokyo, Japan.

We believe that it is most important that the practitioners and the members of academic community around the world, share their knowledge and practical experience, through papers and technical notes, to foster world wide technology transfer. This is the prime purpose of the journal.

It is hoped that the journal will help to bridge the gap between infrastructure owners and decision makers, the construction industry and the engineering community, thereby fostering innovative developments and new engineering applications of ground improvement technologies. On behalf of the Editorial Board, I would like to take this opportunity to thank those who have contributed to the development of this journal. Its future success will largely depend upon the commitment of our international geotechnical community to advancing the state of practice through sharing knowledge and exchanging ideas and experiences. We look forward to working with the International Geotechnical Community towards these goals.

IV. CONFERENCES AND WORKSHOPS

The committee has initiated a Special Series of International Conferences on Ground Improvement Geosystems

Table I – Specialty Conferences and Workshops Co-sponsored by the Host National Society Members and the ISSMFE-TC-17.

CONFERENCES	WORKSHOPS
USA: Grouting, Soil Improvement & Geosynthetics New Orleans, USA, February 1992 Hosted by: ASCE	France: Soil Reinforcement, Full Scale Experiments of the 80s Paris, France, November 1993 Hosted by: CEEC
Japan, II ICGIGS: Grouting and Deep Soil Mixing, IS-Tokyo '96 Tokyo, Japan, May 1996 Hosted by: JSSMFE	Denmark: Case Histories on Emerging Technologies Copenhagen, Denmark, June 1995 Hosted by: ESSMFE
UK-France, III ICGIGS: Ground Densification & Soil Reinforcement London, UK, June 1997 Hosted by: BGS-FGS	USA: Vacuum Consolidation of Hydraulic Fills Los Angeles, USA 1996 Hosted by: NSF-Port of L.A.
Finland, IV ICGIGS: Grouting, Soil Improvement and Geosystems Helsinki, Finland, June 2000 Hosted by: FGS	Sweden: Dry Mix Methods for Deep Soil Stabilization Stockholm, Sweden October 1999 Hosted by: SGS

(ICGIGS) that are co-sponsored with the host National Society members. During the past few years, three International Conferences and specialty workshops have been held in the different member countries, to further knowledge exchange and technology transfer. They are listed in Table I.

For further information on this conference, please visit the TC-17 Homepage on the World Wide Web at: <http://tc17.poly.edu>.

It should be emphasized at this point, that the National Societies have shown an outstanding commitment in fostering international exchange and technology transfer through remarkable organization of high quality conferences. We look forward to continuing our work with the National Societies on expanding this effective vehicle of international cooperation.

V. CONCLUSIONS

I would like to take this opportunity to thank the committee members, Sponsoring industries national and international organizations, and the National Societies for their enthusiastic support and effective cooperation through out the development of TC-17 technical activities. The past seven years have been most productive in establishing technology transfer tools. We strongly believe these tools will serve the International Geotechnical Community, not only in promoting technology transfer and knowledge exchange, but ultimately in fostering cooperative research and demonstration projects and facilitating the integration of innovative technologies through international standardization. It is therefore anticipated that during the next term of the ISSMFE, the workplan of the committee will primarily focus on further developing these technology transfer tools and their effective use in advancing the State of Ground Improvement Engineering and Practice. We look forward to continue working with the International Geotechnical Community towards these goals.