

TC202 TRANSPORTATION GEOTECHNICS

Terms of Reference (2022-2026)

Objective 1: Dissemination

The goal of Technical Committee (TC) 202 is to apply broad engineering to bridge the gap between Pavement/Railway/Coastal Engineering and Geotechnical Engineering. The main task is to promote co-operation and exchange of information and knowledge about the geotechnical aspects in design, construction, maintenance, monitoring and upgrading of roads, railways, airfields, waterways, and harbour facilities for sustainable and resilient infrastructure. The task also covers the related environmental and climatic aspects. For these purposes, several main topics are identified and materialized in the main Task Forces of the Committee as follows.

Task Force 1. Alternative, non-traditional geomaterials (e.g. recycled, lightweight, or by-products). Leaders: Jennifer Nicks (C), others to be added once TC membership completed.

Task Force 2. Stabilization and reinforcement of geomaterials to include mechanical, chemical, and biological methods. Leaders: Erol Tutumluer (C), Seong-Wan Park.

Task Force 3. Traditional and intelligent sensing methods, digitalization, and (big) data management and analysis for construction and condition assessment. Leaders: Anand Puppala (C), Antonio Gomes Correia, Soheil Nazarian, Andreas Loizos, others to be added once TC membership completed.

Task Force 4. Rail track substructures, including transition zones, and transportation geodynamics. Leaders: William Powrie (C), Xuecheng Bian, Buddhima Indraratna

Task Force 5. Harbour geotechnics. Leaders: Alexandre Pinto (C), others to be added once TC membership completed.

Task Force 6.: Climatic effects on geomaterial behaviour related to mechanics of unsaturated transportation foundations. Leaders: Yujun Cui (C), Tatsuya Ishikawa.

Task Force 7. Geotechnical asset management, including geohazard risk to transport infrastructure: hazard, risk, vulnerability, climate change, resilience and adaptation. Leaders: Mike Winter (C), Tatsuya Ishikawa, Bernardo Caicedo.

Task Force 8. Organization of TC202-hosted specialty conferences, workshops, and webinars. Leader: Chair, Vice-chair, Secretary, ex Chairs, Buddhima Indraratna (5ICTG Chair), Chair 6ICTG (when decided).

- Organize and host the International Conference on Transportation Geotechnics (ICTG) series:

- 5th International Conference on Transportation Geotechnics (5ICTG), Sydney, Australia, November 18 - 20, 2024. Chairman Prof. Buddhima Indraratna (University of Technology Sydney).
 - Focused plenary, lectern, and poster sessions, including selected workshops and short courses.
 - 4th Young Transportation Geotechnics Engineers (YTGE) Meeting and Bright Spark Lectures.
 - 5th Proctor Lecture.
 - TC202 meeting.
 - Conference proceedings. Special attention will be paid to the publication of all the peer review conference papers that will be indexed by Scopus and ISI Thomson Reuters and published by ASCE Geotechnical Special Publications.
- 6th International Conference on Transportation Geotechnics (6ICTG) – venue and exact 2028 date to be determined selected this term.
- Identify and continue holding honour lecturers for the TC202 Proctor Lecture.
- Contribute to ongoing initiatives of the ISSMGE:
 - Virtual University: free courses, webinars, as well as short educational videos (e.g. the ISSMGE webinars on “Intelligent Compaction” and “Geosynthetics Use in Transportation Geotechnics”);
 - ISSMGE Interactive Technical Talks (IITT): identify topic(s), speakers (including a young member(s)), and coordinate the discussion with the President.
 - Online Library: explore use of the Conference Paper Review Platform to coordinate and publish TC202 conference proceedings as open access articles.
 - International Journal of Geoenvironmental Case Histories: promote contributions from TC202 members and industry links.

Task Force 9. Transportation Geotechnics; Elsevier journal of TC202. Editors-in-Chief: António Gomes Correia; Erol Tutumluer, and Yunmin Chen. First issue was published in March 2014 of this quarterly journal, which aims to publish high quality, theoretical and applied papers on all aspects of geotechnics for roads, highways, railways, airfields and waterways. Leaders: António Gomes Correia (C), Erol Tutumluer. <http://www.journals.elsevier.com/transportation-geotechnics/>

To maintain an international website, GeoWorld network, and email network is as important as holding several meetings for interactive communication among the TC202 members and geotechnical affiliates to share ideas, information, and technical solutions. This will further help in the dissemination of knowledge and practice. The current TC202 website is maintained by TC202 Chair Tatsuya Ishikawa.

<http://www.eng.hokudai.ac.jp/labo/geomech/ISSMGE%20TC202/>

Task Force 10: Recruiting early-career and mid-career TC202 members to secure the future of the Technical Committee and to run events to encourage and promote early career Transportation Geotechnics professionals. Leaders: Jennifer Nicks (C), others younger TC members to be added once TC membership completed supported by the Executive Group.

Objective 2: Guidelines & Recommendations

TC202 will establish guidelines and technical recommendations within the topic of the TC. These may take the form of:

- (i) Reports for ISSMGE (Chair, Vice-chair, and Secretary).
- (ii) Proc. 5th International Conference on Transportation Geotechnics (Buddhima Indraratna).
- (iii) Special Guest Editors to contribute to the Transportation Geotechnics Elsevier journal.
- (iv) Articles to the International Journal of GeoEngineering Case Histories.
- (v) White papers and other publications with the contributions of Task Forces (Coordination: Chair, Vice-chair, Secretary, and Leaders). This may include collating, summarizing, and comparing available standards, codes, and guidelines across the world, with recommendations for practice.

Objective 3: Conference Assistance

To endorse and assist with technical programs of international conferences, symposiums and other events. TC202 works closely with its members and affiliates to help identify and organize symposia, workshops, and international exchanges dealing with all aspects of transportation geotechnics in both traditional and emerging areas. TC202-sponsored sessions will be promoted for transportation infrastructures within ISSMGE - international, and regional conferences on soil mechanics and geotechnical engineering, and to support special geotechnical, geoenvironmental, unsaturated soils and sustainability focused conferences related to transportation geotechnics.

Currently planned TC202-organized and co-sponsored workshops, sessions, and conferences include the following:

- 9th International Symposium on Environmental Vibration (ISEV) and Transportation Geodynamics, Sapporo, Japan, March 6-8, 2024.
- Workshop /course at XVIII European Conference on Soil Mechanics and Geotechnical Engineering (ECSMGE) in Lisbon, Portugal on August 26-30, 2024.
- Workshop /course at XVII Pan-American Conference on Soil Mechanics and Geotechnical Engineering in Pucon, Chile on November, 2024.
- 5th ICTG Conference in Sydney, Australia, November 18-20, 2024.
- Workshop /course at ICSMGE 2026 in Vienna, Austria, June 14-19, 2026.

Objective 4: Industry links

To cooperate actively with other industry affiliates whose field of activity involves important questions related to transportation geotechnics. Many members also serve in other industry and overlapping groups and will serve as liaisons on behalf of TC202 and vice versa. Current liaisons are affiliated with the Transportation Research Board (TRB); ASCE Geo-Institute; ASTM International; International Geosynthetics Society (IGS); AIPCR/PIARC (World Road Association), European Cooperation in Science & Technology (COST), UK Engineering and Physical Sciences Research Council (EPSRC), International Union

of Railways (UIC), International Association of Engineering Geology and the Environment (IAEG), and European Committee for Standardization (CEN). To elaborate documental descriptions of special projects where Transportation Geotechnics projects were conducted for design purposes or other interventions, that can be included in the ISSMGE Bulletin, or others; complementary or alternatively, to organize workshops, sessions, and webinars on such topics.

In addition, TC202 will cooperate actively with other ISSMGE technical committees whose field of activity involves important questions related with transportation geotechnics. Identified TCs with overlap include TC101, TC102, TC103, TC104, TC105, TC106, TC107, TC203, TC208, TC211, TC213, TC214, TC215, TC216, TC219, TC220, TC303, TC304, TC306, TC307, TC309, JTC1, and JTC2. Methods to effectively coordinate will be explored and implemented.

Finally, TC202 expects to more actively coordinate with the ISSMGE's Young Member Presidential Group (YMPG). This group has the objectives to increase the attractiveness of the ISSMGE for the next generation of geotechnical engineers. To contribute to the activities of the YMPG and solicit other ideas, special workshops and sessions will be organized during the Young Transportation Geotechnics Engineer (YTGE) meetings, which will take place at the 5th ICTG event, as well as selecting and promoting Bright Spark Lectures, and inviting young members to participate in IITT.