GEOSYNTHETIC BARRIERS IN CONTAINMENT FACILITIES

This course is designed to provide the most recent findings from research and the state of practice to both expert practitioners and novices and equip them with updated knowledge on geosynthetics barrier systems. The course is offered by a team of world-class experts that will provide a unique combination of experiences from research, engineering practice, installation and material specifications. Following an overall introduction, the course material then focuses on geomembranes and geosynthetic clay liners (GCLs) interaction with fluids typically encountered in landfills, mining and other settings. Significant new findings will be presented on the performance of composite liners, leakage rates, geomembrane service life, and GCL hydraulic performance. The course finishes by discussing how contaminants of emerging concern, such as Per and Poly fluoroalkyl substances (PFASs), interact with geomembranes and GCLs and how they potentially affect the hydraulic performance of composite liners.

ABOUT THE SPEAKERS

Dr A (Malek) Bouazza is a Professor of Geotechnical Engineering at Monash University, Melbourne, Australia. He engages extensively with industry and regularly conducts peer reviews, third-party reviews and expert consultation for containment-system engineering projects such as landfills, mining waste containment facilities, heap leach pads, shale/coal gas recovery ponds, PTES, industry process liquid ponds or similar, and cases subject to litigations. He is the immediate past chair of the ISSMGE Technical Committee TC 215 on Environmental Geotechnics and the founding chair of the IGS TC on barriers. His research has been recognised by several awards, including the IGS Award (twice) for outstanding contribution to advances in the scientific and engineering developments of geosynthetics, the Telford Premium Prize (twice) from the Institution of Civil Engineers, U.K., the R.M. Quigley Award (twice) from the Canadian Geotechnical Society, the E.H. Davis Memorial Lecture Award from the Australian Geomechanics Society, and the IGS Plaque for significant contributions to the International Geosynthetics Society and outstanding technical contributions to the geosynthetics discipline. He has presented prestigious named lectures, including the *Zeng Guoxi Lecture (2014), Davis Lecture (2016)* and the 3rd ISSMGE honour lecture on Environmental Geotechnics (3rd *Kerry Rowe Lecture, 2022*). He was named in 2021 as an Honorary Life Member of the Australasian Chapter of IGS (ACIGS) in recognition of the significant contribution he has made in supporting the geosynthetics profession, and in 2022 he was presented with the IGS chapter service award in recognition of his exceptional service and achievement at the chapter level as well as internationally.

Dr Kerry Rowe holds the Canada Research Chair in Geotechnical and Geoenvironmental Engineering at Queen's University, Canada, where he is also the Barrington Batchelor Distinguished University Professor. His professional practice and research have covered contaminant migration through soil and rock, hydrogeological/geotechnical/civil engineering aspects of landfill design, containment and remediation of contaminated sites from the Arctic to the Antarctic, geosynthetics, hydro dams, tailings storage facilities and tailings dams. He is a past President of the International Geosynthetics Society, the Canadian Geotechnical Society and the Engineering Institute of Canada. He has been selected to present some of the world's most prestigious named geotechnical lectures, including the *Giroud Lecture* (2002), *Rankine Lecture* (2005), *Manuel Rocha Lecture* (2006), *Casagrande lecture* (2011), *Karl Terzaghi Lecture* (2017), *Croce Lecture* (2017) and *Mercer Lecture* (2019). In 2013, the International Society for Soil Mechanics and Geotechnical Engineering created a named lecture to honour his pioneering contributions to geoenvironmental engineering, the ISSMGE *R. Kerry Rowe Lecture*. In 2021, the International Geosynthetics Society created the Kerry Rowe Lecture to honour his seminal contributions to the development of geosynthetic engineering. He has received numerous awards and has been elected a Distinguished Member of ASCE, a Foreign Member of the US National Academy of Engineering, and a Fellow of the Royal Society (London, UK), UK Royal Academy of Engineering, the Royal Society of Canada, and the Canadian Academy of Engineering. He has been appointed an Officer of the Order of Canada (O.C.), Canada's highest Civilian Honour.

MONASH University

Department of Civil Engineering

Short Course on

GEOSYNTHETICS BARRIERS IN CONTAINMENT FACILITIES

Monash College City Campus,
750 Collins Street, Docklands,
Room 8.42 (8th floor)

Tuesday 23 May 2023

MONASH GEOMECHANICS

COURSE SCHEDULE

8:30-8:50 Registration

8:50-9:00 Welcome (**Malek Bouazza**)

9:00-9:30 Introduction, Basic concepts (**Kerry Rowe**)

9:30-10:10 Geomembranes *(Material characteristics, short & long-term performance)* **(Kerry Rowe)**

10:10-10:45 Geosynthetic clay liners *(Bentonite properties, hydration processes)* **(Malek Bouazza)**

10:45-11:15 **Coffee/Tea Break**

11:15-12:00 Geomembranes *service life* **(Kerry Rowe)**

12:00-13:00 Geosynthetic clay liners *(Hydraulic conductivity, chemical compatibility, ion exchange)* **(Malek Bouazza)**

13:00-14.00 **Lunch**

14:00-15:00 Composite liner performance and Issues: *Flow aspects, leakage* (**Kerry Rowe**)

15:00-15:45 Emerging contaminants (PFASs) and geosynthetics **(Malek Bouazza)**

15:45-16:00 **Coffee/Tea Break**

16:00-16:45 Emerging contaminants (PFASs) and composite liner performance **(Kerry Rowe)**

16:45-17:15 Geosynthetic clay liner's interaction with Emerging contaminants (PFASs) **(Malek Bouazza)**

17:15-17:30 **Wrap up and closure**

GENERAL INFORMATION

Registration: The number of places is limited to 50 and will be filled in order of receipts of registrations. Participants are encouraged to make registrations in advance by using the online registration form.

Fees: The fee for registration is **$450** (GST inclusive). The registration fee includes the course, reference material, light lunch and refreshments.

Refunds, less a handling fee of $100, will be made in the event of cancellation, provided notification is received in writing 5 days prior to the event. For cancellations received after this date, no refund will be given, but substitute delegates are welcome.

GETTING TO THE VENUE:

Monash College City Campus (**750 Collins Street, Docklands**) is conveniently connected by trains and trams. Catch any Melbourne train that goes through the City Loop and hop off at Southern Cross station. The campus is only a 300m walk from there (~7-minute walk). Trams #11 and #48 from the north and east of the city stop on the doorstep of 750 Collins Street.

Parking: Wilson parking is available at the rear of the building (Entry: Fishplate Lane); you may need to purchase the parking ticket online as this car park sometimes gets full during the weekdays.

FURTHER TECHNICAL INFORMATION:

Technical Information regarding the short course can be obtained from Prof. A (Malek) Bouazza at malek.bouazza@ monash.edu

REGISTRATION

Please register online through Monash University by using the following link:

https://shop.monash.edu/geosynthetics-barriers-in-containment-facilities.html

The Monash Geotechnical Group

Providing Research & Development, Consulting, Testing & Training Services to the Civil Engineering Community