



DFI INDIA EDUCATIONAL WEBINAR SERIES ON STEEL RETAINING STRUCTURES AND FOUNDATIONS

Session Details

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Webinar 1 – 29th July 2020 at 4:00pm IST

Basic design rules and guidelines of Steel Retaining Systems – design optimization potential – IS and EN approaches



Mr. Joao Martins, Head of the Technical and Marketing Department, ArcelorMittal Commercial RPS – Sheet Piling – Luxembourg, 66, rue de Luxembourg, L-4221 Esch-sur-Alzette

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Abstract: The design of retaining walls built with steel sheet piles is quite straightforward, but the optimization can sometimes be quite a challenge. This session will focus on the design, starting with geotechnical considerations, assumptions and governing criteria, design models and software. We will also consider criteria such as durability, sustainability, optimization of a sheet pile retaining wall based on European standards, installation (settlements, noise, etc). The selection of the optimal sheet pile section is a key topic of this module.

The goal of this short introduction to steel sheet pile design is to give an outline of the design aspects and criteria to achieve the most cost-effective and sustainable solution for each specific retaining wall application, be it permanent (quay walls, etc) or temporary (cofferdams, trenches, etc) developed to simplify the design.

About the Presenter: *Mr. Joao Martins* is a Civil engineer M. Sc. from University of Liège, Belgium. He Started his professional career in 1996 as an inspection engineer in a consulting firm in Luxembourg. He moved to ArcelorMittal in 1999 where he held several positions in the technical and in the marketing department of the sheet piling department. He started designing sheet piles for customers, and worked as a resident engineer in the USA for three years where he was in charge of technical assistance. He had the opportunity to visit many jobsites all around the world during this period.

He works now in the marketing department, and he is also the link between the R&D and the sales department. His main mission is to develop and promote new and innovative steel sheet pile solutions.

Webinar 2 – 12th Aug 2020 at 4:00pm IST

New seismic design methods for steel sheet piles in very high seismic regions



Mr. Amine El Kasimi, Project Engineer – Design Office, ArcelorMittal Commercial RPS – Sheet Piling – Luxembourg, 66, rue de Luxembourg, L-4221 Esch-sur-Alzette

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Abstract: The design of steel sheet pile structures in seismic regions is unfortunately still based on assumptions that were developed for gravity walls. ArcelorMittal collaborated with European universities and seismic experts in order to develop a simple, yet very efficient design method for flexible walls.

We will present preliminary results of these research and development projects. Considerable savings can be achieved with the performance-based approach proposed by ArcelorMittal and validated by the expert panels.

About the Presenter: *Mr. Amine El Kasimi* graduated from “Mines Nancy” in France with a Master of Science in Civil Engineering and Geotechnical Engineering. He joined ArcelorMittal in 2015 and is in charge of project design support on a global scale. He has been involved in geotechnical and maritime projects with various applications (quay walls, underground car parks, deep foundations, etc). He has specialized in seismic design with full dynamic methods using FEM. He has participated to research works related to seismic design of sheet piles in collaboration with well-respected universities.

Webinar 3 – 26 Aug 2020 at 4:00pm IST

HZ-M/AZ steel wall solutions for port construction – innovative solutions



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Abstract: High modulus retaining walls are mainly used for deep-water quay walls such as container terminals, or for deep cofferdams under high water pressure. The HZ-M/AZ wall is a quite versatile and very cost-effective solution, but compared to a standard corrugated AZ sheet pile wall, specific design and installation aspects must be considered.

This session is the continuation of Webinar 1 focusing on the combined wall systems.

About the Presenter: *Mr. Joao Martins* is a Civil engineer M. Sc. from University of Liège, Belgium. He Started his professional career in 1996 as an inspection engineer in a consulting firm in Luxembourg. He moved to ArcelorMittal in 1999 where he held several positions in the technical and in the marketing department of the sheet piling department. He started designing sheet piles for customers, and worked as a resident engineer in the USA for three years where he was in charge of technical assistance. He had the opportunity to visit many jobsites all around the world during this period.

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Webinar 4 – 09 Sept 2020 at 4:00pm IST

State-of-the-art Sheet pile installation techniques



Mr. Ernst Weber, M.Sc. / Dipl.-Ing. – Sheet Piling Specialist
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Abstract: Modern installation equipment is offering various options to choose the most suitable technique for the given project. Depending on the sheet pile length, soil conditions and job site situation, it is possible to use Vibratory hammers, impact hammers or sheet pile presses in different sizes. Ranging from small excavator mounted machines to big leader-guided piling rigs it is possible to install sheet piles in the most economical way, even in rock. Vibration and noise are nowadays well controllable.

Amongst others, the big advantage in using steel sheet piles are execution speed and quality control.

In this session we will present the different types of installation machinery together recommendations on how to dimension the necessary tools to achieve best results. A special focus will be on vibration-free installation methods.

About the Presenter: *Mr. Ernst Weber* graduated at University of Kaiserslautern, Germany, with a Master of Civil Engineering, specialized in Geotechnics. After having worked for different construction companies on international projects, he joined ArcelorMittal Sheet piling in 2002 and was since then involved in the planning and execution of sheet piles projects all around the world. He is specialized in installation equipment and construction methods.

Webinar 5 – 23 Sept 2020 at 4:00pm IST

Deep cofferdams, quay walls and breakwaters built with circular cells (straight web steel sheet piles)



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Abstract: Circular cells and diaphragm walls built with straight web steel sheet piles are the ideal solution for special applications, especially when the bedrock level is quite shallow. These hybrid gravity structures are composed of a steel membrane and soil, and can withstand very high loads.

One particular advantage of circular cells is that they resist quite well to seismic loads.

This session focuses on the design and practical aspects of circular cells, as well as the tools developed by ArcelorMittal to simplify the design.

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Webinar 6 – 07 October 2020 at 4:00pm IST

Innovative Engineering Solutions using Press-in Method



Mr. Tomotaka Hirose

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Abstract: The Press-in Method using various types of Silent Piler has been developed in Japan and has spread over various countries in the past 50 years. Silent Piler is a piling machine which presses the sheet pile into the ground by clamping onto the sheet pile already installed as a source of reaction force. The clamping mechanism enables Silent Piler to Self-walk on top of the previously installed piles which provides a compact job site.

About the Presenter: Mr. Hirose started his professional career in 2010 at GIKEN Ltd., Japan. Until 2018, he has focused on the structural calculation of retaining wall using steel sheet pile and tubular pile, and created design proposals for consultants.

In response to the Tohoku Region Pacific Cast Earthquake in 2011, he started joint research on embankment reinforcement measures against natural disasters.

This research focused on embankment reinforcement measures using a double steel sheet pile and tubular piles.

From 2018, he became the chief of the Engineering Department in Giken Seisakusho Asia, Singapore. His mission is to promote the Press-In method and steel materials widely in the South East Asia region. He has also engaged in structural proposals and had the opportunity to visit many job sites in South East Asia during this period.

Webinar 7 – 04 Nov 2020 at 4:00pm IST

Hot Rolled Sheet piles Projects – Techno-economic approach for Temporary applications



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Abstract: Steel sheet piles can be utilized for temporary soil and water retention applications, with profiles and lengths to suit anything from the smallest to the biggest task. Steel sheet piles can be driven, extracted and reused many times, making them a top solution in terms of circular economy and environmental life cycle considerations. Steel sheet piles have been used for temporary applications for decades because they save time and money on site. Given the reusability of these sections, there are several techniques to optimize the economy of a project. The webinar session would cover applications to explain cofferdams, linear excavations, how to limit settlements of near-by structures etc and on avoiding localized failures using Hot rolled Sheet piles.

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