Helical Screw Pile Foundation System - An Overview

The Indian foundation industry is growing at a very fast pace. In the last decade, the scope for introduction of new foundation techniques has witnessed a boom with many international and local players participating in India's growth. Large infrastructure projects in roads, railways, sea ports, airports, auto industry, IT, chip manufacturing, logistics and warehousing have all thrown open immense opportunities in the foundation sector also. Innovative solutions in design and construction of foundation systems are being demanded by owners across India. While the traditional deep foundation has changed from driven piles and tripod bored piles to more productive and environmentally friendly, hydraulic rig-based bored piles, there is still opportunity for a new piling system in India. One such system is the Helical Screw Pile. Read more about it on Page no. 3.



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Helical Screw Pile Foundation System - An Overview

Cover Story

- Mohan Ramanathan, Managing Director, Advanced Construction Technologies (P) Ltd, Chennai. India, Chair, Deep Foundation Institute (DFI) of India

Current scenario of deep foundation construction industry in India and the need for alternative pile technology

Majority of the pile work in India depends on traditional bored pile construction methods involving use of bored piles and precast piles. Cast-in piles and driven piles have limited use, and Continuous Flight Auger (CFA) piles, helical piles, and micropiles have been used very rarely.

The mid-1990s saw the adoption of bored pile construction all over India, because of its low cost. This technology did not require skilled manpower and hence was quickly adopted in the 90s, when India needed to make rapid progress. But this technology, being labour intensive, is also time consuming, which is not suitable for the growth of a fast-paced economy. Today, helical screw piles can address the need for quick construction of housing for our rapidly growing



Fig. 1: Helical Pile

population, as well as enabling connectivity of the business centers of the country with remote areas.

India can be a leading platform to promote helical screw pile construction with the right combination of local manufacturers and advancements in technology, keeping in mind the wide range of geological strata across the subcontinent.

What is a helical screw pile?

Terms such as helical foundation pile, helical screw pile foundation, screw piles, helical anchors, screw anchors, and helical piers are often used interchangeably throughout the industry. The preferred description is "helical screw pile'. A helical screw pile serves the same function as other foundations such as driven piles, CFA and drilled displacement piles and micropiles to support

or resist loads transferred into the pile by any type of structure. This load can be tension, compression, lateral or a combination of the three.

A helical screw pile is simply a steel shaft with one or more helices (formed plates) welded to it. Installation of this type of pile can be compared to that of a self-tapping wood screw. Helical screw piles are installed into the ground by the application of rotational torque, usually provided by a hydraulically powered drive head. The axial capacity of the pile is directly related to the torque achieved throughout the last 900mm to 120mm of installation (i.e., three times the diameter of the largest helix).

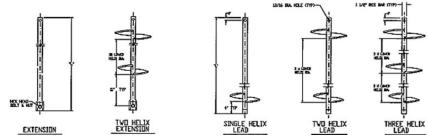


Fig. 2: Components of a Helical Pile

A helical pile includes three components:

1. Shaft:

Shaft sizes typically range from 30mm to 50mm round cornered square (RCS) high strength steel bar and from 75mm to 220mm diameter hollow steel pipe. Soil conditions, the expected foundation loads and the anticipated installation torque normally govern the required size and shape of the shaft. Other factors, such as the method of connecting the pile to the structure, may also influence the required shaft size and shape.

The shaft has at least four functions -

a. To sustain sufficient torque capacity to install the pile

Continued

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b. To sustain loads transferred from the helices - during and after installation

- c. To sustain loads transferred from the structure after installation
- d. To provide the proper connection (interface) to the structure

2. Helices:

Helical screw piles usually include one to six helices. In the case of multihelix lead sections, the smaller diameter helix always enters the ground first, followed by larger diameter helices or helices of the same size. This minimizes installing torque. The distance between any two helices should be at least three times the diameter of the larger helix. To minimize soil disturbance, helices must be formed to a true helical shape with uniform pitch by matching metal dies.

The maximum load that each helix can exert against the soil is equal to the effective bearing capacity of the soil times the projected area of the helix. The total

pile capacity provided by the helices is simply the sum of the individual helix bearing capacities. For low displacement piles (i.e., shaft diameter less than 100mm diameter), skin friction is usually considered negligible and 100% of the pile capacity is assumed to be provided by the helix / soil reaction.



Fig. 3: Helices

Helices have at least four functions -

- a. To pull the pile into the soil to the required depth during installation.
- b.To transfer compression and tension loads from the structure into the soil.
- c.To transfer load into the soil by means of exerting bearing pressure after installation
- d.To provide the required strength (welded connection) between the helix and shaft.

3. Pile / Structure Interface Connection:

Methods of connecting the pile to the structure depend on the type of structure to be supported. Connections can range from complex welded brackets to a slip fit bracket onto the top of the pile. The major consideration for this connection is to assure that there is adequate load transfer from the structure to the pile.

Advantages of helical screw piles and their relevance in India

The fast and easy installation makes it an ideal solution for affordable

housing in India for lightly loaded buildings. Helical screw pile can be used for coastal and marshy areas, and it is also well suited for Black Cotton soils which is present in about 40% of our country with expansive or shrinkage tendencies. It can replace the 40-year-old manually installed under-reamed piles and is ideal for rural locations where concrete availability and quality is doubtful. Moreover, it is seismically better suited than under-reamed piles and can be an economical solution. Helical foundation pile systems typically require less area than other deep foundation systems.

India has many projects where helical screw pile foundation systems may be the best alternative, such as light-small structures, and low-cost structures like transmission structures, solar-green energy structures, industrial structures, tiebacks/tie-downs, etc. The solar industry is already using helical screw piles in Indian projects. Our country also has pre-manufactured local system since we are one of the largest exporters of steel in the world. Helical screw piles can be quickly installed, has a flexibility to accommodate a wide range of modifications

diameter/length, in and allows for immediate loading the foundation after installation. Compared with most other deep foundation systems, helical foundation pile commonly have lower waste and quieter installation, making it well suited for urban areas. Another advantage is that it can be



Fig. 4: Helical Piles for Solar Panels

easily uninstalled by simply unscrewing from the ground.

Challenges in introducing helical screw piles in India

• Lack of BIS code of Practice for helical screw pile in India along with lag in raw material manufacturing

No Indian design guideline codes are available for helical screw piles yet, although the IS 2911 does comprise a few pile construction systems in the current version. It considers driven and bored cast-in-situ concrete piles in the Sections 1 and 2 of Part 1 and driven and pre-bored precast concrete piles in the 3rd and 4th sections of the Part 1. Continued

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• Owner - Contractor perspectives

Insufficient capacity and obsolete thinking of contractors coupled with unskilled workforce is creating a lag in the adoption of new technologies. Their reliance on age-old techniques and reluctance to accept new technologies has to be dealt with by promoting the benefits through demonstration and training programs of helical pile construction with combined owner-contractor participation. Another important issue is the less importance given to foundation construction in overall project execution, leading to cost overburden, and poor foundation systems. Furthermore, the dependence on imports for drive tool kit for helical pile rig, leads to costly construction. This needs to be addressed by encouraging local manufacturing of the necessary tools.

Role of the Government and associated stakeholders

Currently, the least importance is given to geotechnical investigation and to overall pile construction in government tender practices. The traditional tender practices and bid acceptance involve common pile construction technologies. There is room for more emphasis on fostering innovation and promoting new pile technology among the core decision makers. There is a need of a common platform for all stakeholders for the skill development and promotion of helical screw pile technology.

• Geological Limitations

India has the highest land to coastline area ratio in the world. Due to high humidity in coastal zones, the soil near the coastline is corrosive. Helical screw pile construction needs special anti-corrosive galvanization coating to prevent long-term corrosion in such soils. This will require special precautions during installation, not letting corrosion affect the structure.

With proper optimization of productivity, quality and suitable geological strata, helical foundation pile construction can be used for building new structures and offers an economical foundation alternative to the existing deep foundation practices in India. It can be a game changer for the major projects to be developed in the future.

DFI of India Initiatives

The DFI of India (DFII) formed a technical committee on helical screw piles named, "DFII Helical Pile Technology Implementation Committee" in 2023, chaired by me.

The current committee members are (as shown in the below pictures from left to right) Mr. Mohan Ramanathan, *Advanced Construction Technologies*, Mr. Manish Kumar, *ITD Cementation India Ltd.*, Dr. Balakumar Venkatraman, *Consultant*, Prof. Sumanth Haldar, *IIT Bhubaneshwar*, and Annapoorni Iyer, *Engosym Consultants*.











The committee is working closely with the Helical Piles and Tiebacks Committee of DFI U.S. The committee intends to execute a few trial projects of helical pile installation and testing in different parts of India, to come up with a manual about the design, installation and testing of helical piles. The committee will also focus on disseminating knowledge to Indian geotechnical professionals through seminars and workshops.

The main goals of the committee include:

- To bring awareness of opportunities for helical screw pile use to contractors, consultants, manufacturers, and suppliers in India.
- To publish a guidebook after the trials, and ultimate goal is to successfully bring out a BIS code under IS:2911, for all consultants and owners to use.

The article will be continued in the upcoming issue.....

DFI U.S. came with three guidelines for helical piles as shown below under the "Helical Piles and Tiebacks Committee". You can access the guides by clicking on the below links.

- Helical Pile Foundation Design Guide-<u>www.members.dfi.org/publication-store/</u> single-pub?pubid=16908&bundle=1
- Model Specification for Helical Anchor Foundations Tension Applicationswww.members.dfi.org/publication-store/single-pub?pubid=16906&bundle=1
- Model Specification for Helical Pile Foundations Compression Applicationswww.members.dfi.org/publication-store/single-pub?pubid=16907&bundle=1





DFI of India Founder Director Message - Dr. K. S. Rama Krishna

I am writing this with a profound sense of fulfillment, that we, the practicing geotechnical engineers in India, have been able to establish a distinguished platform/forum by the name "Deep Foundations Institute of India," in short DFI of India. This platform stands as a pivotal junction for all stakeholders within the geotechnical and foundation industry across the nation. At the outset let me express my heartfelt appreciation to DFI U.S. for their unwavering



support, encouragement, and invaluable guidance throughout our journey.

The genesis of this initiative stems from a contemplation shared with numerous individuals in the construction sector back in 2010:

"We are all witnessing one of the greatest periods for Indian construction industry in the history of developing India. The challenges being faced by the foundation industry in terms of volume and complexity of foundation works and the demand for speed and quality are awesome and appear to be insurmountable in a short span of time. A wide gap exists in all related fields such as design practices, codes, technologies, equipment, testing and monitoring, specialist contractors, operators and other frontline staff, supervising staff, etc. In short it can be said that Indian Foundation Industry is still in its embryonic stage, and we need to address this

seriously and expeditiously to remove a major stumbling block on the road of India's infrastructure development.

Only in the past one-decade hydraulic rotary piling rigs have been introduced for bored piling and these are slowly replacing the tripod type of rigs of low productivity and quality. In the developed countries there are several technologies with high degree of mechanization and automation to speed up foundation construction with repeatable quality. India being one of the most dynamic places in the world for infrastructure construction there is an urgent need to create a forum to integrate various parts of the value chain to practice and promote good quality foundation design and construction. It is our dream and our endeavour to professionally link Indian foundation industry with the best in the foundation world. It is fervently hoped that DFI shall offer such a platform, support and guidance.

This forum, is expected to address the various issues stated above and benefit our country directly and indirectly in many ways such as

- Professional development of specialist foundation consultants and contractors through awareness and interaction programmes,
- Introduction of new technologies with high level of mechanization and automation,
- updating the owners and consultants about latest technologies and practices, so that they welcome these modern trends in foundation practice to speed up their project construction with quality,

Continued

 A common fund raised through contributions from all stake holders to carry out pilot trials of new technologies and prepare manuals for professional practice, impart training to design and field engineers, operators and other front-line staff."

As an initial phase, our endeavors materialized into annual conferences, regional seminars, workshops, webinars, and the inception of a quarterly publication. Additionally, we instituted prestigious accolades such as the Lifetime Contribution Award, Student Awards, and Best Paper Awards. Noteworthy accomplishments include the identification and endorsement of the "Continuous Flight Auger Pile" (CFA Pile), accompanied by field trials and the formulation of a comprehensive user manual, poised to attain recognition as a Code of Practice by the Bureau of Indian Standards (BIS).

Furthermore, we have established a permanent office with a foundational staff structure, poised for expansion in consonance with the burgeoning activities and outreach of DFI of India. We have started an executive committee, a core committee, and various sub-committees, viz., Technical (CFA, Helical Pile, Geotechnical Characterisation for Foundations, etc.), Training, Groundwork and Women in Deep Foundations. Many more are expected to be initiated in course of time. Substantial emphasis is laid on fostering a robust leadership succession plan to integrate proactive members into the apex body, namely the Board of Directors of DFI of India, which comprises Chairman, Vice Chairman and Directors. In essence, I perceive this platform as an unparalleled opportunity for aspiring geotechnical engineers to contribute meaningfully to our specialized field and the nation at large.

I believe, we have been able to make DFI a very familiar name to a majority of practicing geotechnical and civil engineers in India. There is a tremendous scope for DFI of India to grow further to achieve all the mission goals and to realise our collective vision, i.e., to make Indian geotechnical and foundation engineering practice the best in the world.

DFI of India can play a catalyst role to effectively integrate academia with the foundation industry and fill up all the existing gaps between knowledge and effective execution. We need to have a regular DFI member in every foundations related committee of BIS, we need to occupy a position as expert advisor for foundations and technologies at the planning stages of major infrastructure projects by the state and central governments, we need specialist equipment banks at least at four or five regional centres across India, we need at least one physical DFI institute in every state of India, because of the size and development potential of each state, to offer field related certificate courses and training programmes for field engineers, supervisors, equipment operators and other frontline staff. And we need to remove the fear-of-failure in every geotechnical engineer's mind by empowering him to try new technologies and innovative solutions.

In closing, I pay my homage to the esteemed geotechnical experts, Dr. N. V. Nayak, Shri Anil D. Londhe, and Dr. D. N. Naresh, who recently departed. I express my heartfelt condolences to their respective families.

Finally, my sincere best wishes and regards extend to the current leadership of both DFI and DFI of India, to members across all committees, and to our dedicated staff, particularly the young and dynamic cohort driving our collective vision forward.



Determination of Cement Content for Soil-Cement Stabilization

- Gurpreet Bhatia, Scientific Officer 'E', Nuclear Power Corporation of India Limited

At the onset of any Construction project, it is essentially required to evaluate the properties of founding media in order to assess its suitability. In some cases where founding media do not exhibit the required characteristics, ground improvement techniques can be deployed to improve the properties of founding strata. Different ground improvement techniques can be used depending upon their technical feasibility and in-situ site requirements. One such technique is mixing cement with excavated soil and compacting it in layers to improve its mechanical properties.



Fig. 1: Soil-Cement Stabilization Ground Improvement Method

Soil stabilization using cement is the permanent alteration of properties of the soil to improve its Engineering performance. However, deciding on percentage of cement to be added in soil is a challenging task. Percentage of cement to be added in soil shall be derived so that it is both Technically feasible and Commercially Viable.

Amount of cement to be added in soil can be determined by subjecting the soil-cement samples to alternate cycles of wetting and drying. IS 4332 (Part-4) list down the procedure for determining the soil-cement losses, moisture changes and volume changes (swell and shrinkage) produced by repeated wetting and drying of hardened soil-cement samples.

Four cylindrical specimens of dia. 100mm and length 150mm are moulded at density and moisture content obtained through modified compaction test in laboratory. Specimens shall be prepared in three layers and each layer shall be scarified before placing the material of another layer in order to have proper bonding between two subsequent layers.

Moisture content of the specimen's at which it is moulded along with specimen weight shall be noted before proceeding further. Out of these 4 specimens, specimen 1 & 2 will be used to calculate Volume loss while Specimen 3 & 4 will be used to calculate weight loss. All the four specimens shall be placed in moist chamber and shall be protected from free water for a period of seven days.

At the end of 7 days, specimen shall be submerged in potable water at room temperature for a period of 5hrs and removed. Weight and dimensions of specimens shall be measured before proceeding further.

All four specimens shall then be placed in an oven at 70 degree Celsius for a period of 42 hrs. Weight and dimensions of specimens shall be measured and noted.

Specimen 3 & 4 shall then be given 18 to 20 vertical brush strokes twice on all areas with the wire scratch brush by applying a force of 1.4kgf.

This entire procedure of 48hrs comprise of one cycle of the test. The specimens shall again be submerged in water and the procedure continued for 12 cycles. Weight of specimens before and after brushing is noted at the

end of each cycle. After end of 12 cycles of test, specimens are dried to constant weight at 110 degree Celsius to determine oven dried weight of specimen.

At the end of test, maximum volume change, in percent, and maximum moisture content during test of specimen No. 1 & 2 is noted. For specimen No. 3 & 4, soil-cement loss in percent is calculated.





Fig. 2: Soil-Cement specimens moulded with different percentages of cement (Left); Fig. 3: Condition of specimens after completion of 12 cycles (Right)

IRC SP-89 recommends maximum allowable weight loss for different types of soil as given below. Percentage of cement that qualifies this criteria can be used for soil-cement stabilization provided all other technical conditions laid down in project are satisfied.

AASTHO Soil Group	Unified Soil Group	Maximum Allowable Weight Loss %
A-1-a	GW, GP, GM, SW, SP, SM	14
A-1-b	GM, GP, SM, SP	14
A-2	GM, GP, SM, SC	14*
A-3	SP	14
A-4	CL, ML	10
A-5	ML, MH, CH	10
A-6	CL, CH	7
A-7	ОН, МН, СН	7

*10% is the maximum allowable weight loss for A-2-6 and A-2-7 soils

Table 1: IRC SP-89 recommendation for maximum allowable weight loss for different types of soil

The soil type in this study is Silty Sand (SM). The soil-cement specimens at varying percentages of cement starting from 2%, was prepared at OMC & MDD. The result of weight & volume loss after 12 cycles of test or up to their intermediate final cycle is presented in the below table 2. As per the results, the cement content less than 4% is not recommended. However, this criteria can be suitably modified, based on specific requirements of Project site, if required.

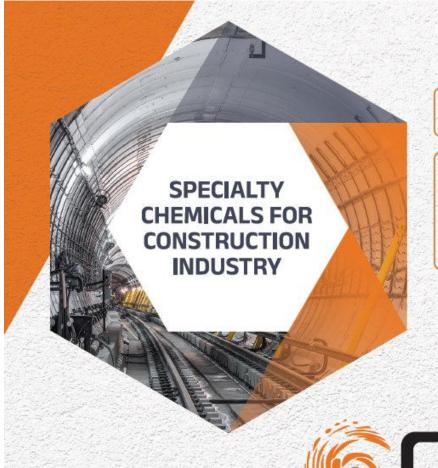
Sample	e Specimen Observation		% change	Remarks	
	No.				
	Specimen-1	% change in Volume	4.8	All 4 specimens col-	
Soil + 2% Cement	Specimen-2	% change in Volume	4.2 lapsed during 5th C		
	Specimen-3	% change in Weight	20.34		
	Specimen-4	% change in Weight	23.84		
Soil + 3% Cement	Specimen-1	% change in Volume	2.8	All 4 specimens collapsed during 6th Cycle	
	Specimen-2	% change in Volume	2.4		
	Specimen-3	% change in Weight	15.26		
	Specimen-4	% change in Weight	15.78		
Soil + 4% Cement	Specimen-1	% change in Volume	2.3	All 4 specimens collapsed during 6th Cycle	
	Specimen-2	% change in Volume	2.5		
	Specimen-3	% change in Weight	11.05		
	Specimen-4	% change in Weight	12.15		
Soil + 5% Cement	Specimen-1	% change in Volume	1.0	After 12 th Cycle	
	Specimen-2	% change in Volume	1.1	After 12 th Cycle	
	Specimen-3	% change in Weight	11.17	Specimen Collapsed during 9th Cycle	
	Specimen-4	% change in Weight	18.08	After 12 th Cycle	
Soil + 7% Cement	Specimen-1	% change in Volume	0.7	After 12 th Cycle	
	Specimen-2	% change in Volume	0.5	After 12 th Cycle	
	Specimen-3	% change in Weight	15.5	After 12th Cycle	
	Specimen-4	% change in Weight	15.0	After 12 th Cycle	
Soil + 9% Cement	Specimen-1	% change in Volume	0.6	After 12 th Cycle	
	Specimen-2	% change in Volume	0.9	After 12 th Cycle	
	Specimen-3	% change in Weight	8.9	After 12 th Cycle	
	Specimen-4	% change in Weight	9.1	After 12 th Cycle	

Table 2: The results of present study

Technical photo feature of relevance are invited from the readers. The feature shall preferably illustrate a modern technology or testing procedure. Please prepare the feature with six to eight good quality pictures with brief and crisp description.







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In loving memory of three geotechnical stalwarts, Dr. N. V. Nayak, Dr. D. N. Naresh, and Sri Anil Londhe.

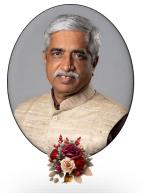
May their legacy continue to inspire those whose lives they touched.

Mr. Narayan V Nayak completed bachelor's in civil engineering from the University of Bombay in the year 1959. He secured his master's in civil engineering from IIT Bombay in the year 1963 and his Ph.D. from the University of Wisconsin, the USA in the year 1970. He secured his PhD in the shortest period of three years with GPA average 4.0/4.0, the record which is yet to be broken. Starting his profession as a teacher for about eight years, Dr. Nayak was with Tata Consulting Engineers for another eight years. Dr Nayak spent his further years with leading foundation specialist and general construction contractors. He was also the recipient of Lifetime Contribution Award at DFI-India 2018 Annual Conference.



Dr. N V Nayak (1936 - 2024)

Dr. D N Naresh had received his doctorate from REC, Warangal (Currently known as NIT Warangal). He served NTPC for around 30+ years. He was instrumental in various innovative geotechnical solutions like Hydraulic Piling in late 90s, Ground Improvement by Sand Compaction Piles (SCP) and Vibro Stone Columns. Another area of his specialization include Ash Dyke management for Power Plants i.e. raising ash dykes, retrofitting, etc. He also served various geotechnical forums like IGS Delhi Chapter, Committee of Revisions of IS Codes, etc. He was also a guest speaker at various national & international conferences.



Dr. D N Naresh (1958 - 2024)

Anil D Londhe after completing bachelor's in civil engineering from VRCE Nagpur and master's from IIT Mumbai (Geotech Engg.) scoring first rank, he started his professional career with Rodio Hazarat (currently known as Afcons Infrastructure Ltd.) in 1968. Besides Afcons, he worked with Navyuga Engg., STUP Consultants, Unitech & Torsteel Research Foundation until 2010. In 2011, Mr. Londhe along with his sons started a firm PUSHYA and provided consultancy in Geotechnical Techniques & Marine Shore Structures. Career spanning 55 years he specialized in Ground Improvement, Rock Dredging, blasting & vibration control.



Shri Anil Londhe (1945 - 2024)

Under leadership of Dr. N V Nayak, Mr. Londhe undertook & successfully implemented Rammed Stone Column technique a unique ground improvement method. Other than Stone Column he also specialized in band drains & sand densification. Alongside he also provided technical expertise in marine & retaining structures, foundation constructions and geotechnical investigations. He not only executed projects in Himalayas & Central India but also along entire coast of India. In India his work spanned 15 states including Andaman Islands & outside India in Bhutan, Nepal & Qatar. Notable clients including ports of India, ship building & infrastructure companies, Thermal, Nuclear & Hydro Power Plants, Refineries, petrochemical companies, irrigation department, Naval Authorities etc.





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DFII & DFI Upcoming Events

Event	IFCEE 2024	Conference on Foundation Decarbonization and Re-use	SuperPile 2024	S3 2024	DFI- India 2024	DFI49
Date	May 07- 10, 2024	May 28-30, 2024	June 12-14, 2024	Aug 6-8, 2024	Sept 19 -21, 2024	Oct 07-10, 2024
Venue	Dallas, Texas	KIT, Amsterdam, Netherlands	San Francisco, California	Aurora, Colorado	Goa, India	Aurora, Colorado



Block your calendars and be part of the most awaited conference in the deep foundation Industry. DFI-India 2024: 13th Annual Conference on Deep Foundation Technologies and Infrastructure Development in India, is scheduled on **Sept. 19–21 2024**. It will be held at the historical venue of **Kala Academy**, Panaji, Goa.

The sponsorship, exhibition and delegate registration for the conference starts on April 29 2024.

Stay tuned for more updates!!!

For more details visit the website: https://dfi-events.org/india24/

DFI of INDIA News

DFII Technical Committee News & Reports

DFII Committee for Geotechnical Characterisation for Foundations

DCGCF committee is planning another 5-days workshop for Geotechnical Investigation laboratory Testing, at different regions of India.

The committee is also working on different activities focused on enhancing the adoption of good work practices and tender practices related to geotechnical investigation. Details will be rolled out soon.

DFII Training Committee on Foundation Technologies

The two training programs on Support Fluids for Foundation Construction and Tremie Concrete for Deep Foundations in 2023 gained a lot of popularity. DFII Training committee is now working on the next program on the topic "Ground Improvement". This program will be an in-person one-day workshop in Chennai. More details about the program will be shared soon. The Committee is also planning to have more training programs on different topics like D-Walls, Working Platforms, Tool Management for Construction Equipment, etc.

DFII Student Outreach Committee-Groundwork

DFII Groundwork committee conducted second webinar in the popular Groundwork webinar series 2024. During this webinar, a technical presentation is delivered by Ms. Sayantani Ghosh, Principal engineer, Langan International on the topic 'Designing, Building and Supporting structures in variable subsurface conditions in Manhattan, New York'.



The monthly webinars will continue till May 2024. The Committee plans to roll out the call for abstracts for DFI-India Student Awards 2024. More details will be shared soon.

CFA Pile Technology Implementation Committee

The committee successfully conducted a workshop on CFA Pile construction in collaboration with IGS Kolkata Chapter on 30 March 2024. Several national and international experts namely, Er Shyamal Kumar Mitra

Er. Shyamal Kumar Mitra, Geotechnical Consultant,

Dr. Martin Larisch, Director, Larisch Consulting Ltd.,



Mr. Prathmesh Wani, Geotech Engineer, Menard & Mr. Ian White, Business Unit Manager, Menard Middle East, Mr. Anirudhan IV, Geotechnical Consultant, and, Dr. Sunil S. Basarkar, Vice President, AFCONS presented during the program. It received an excellent feedback from the participants.

The P20 sub-committee under CED 43 is ready with the draft of the BIS code for CFA Guidelines and reviewing the same. The guidelines document is expected to be out by this year end.

DFII Helical Pile Committee

A new DFII committee on Helical Piles is formed, chaired by Er. Mohan Ramanathan. The main goal of the committee is to bring awareness of opportunities for helical pile use to contractors, consultants, manufacturers and suppliers in India. Also, the initial goal is to bring out a guidebook after the trials, and ultimate goal is to successfully bring out a BIS code under IS:2911, for all consultants and owners to use.

Follow DFI of India on social media for updates & announcements









WHAT CAN DFI DO FOR YOU?

Overview

DFI is an international association of contractors, engineers, suppliers, academics and owners in the deep foundations industry. For more than 40 years, we have brought together professionals for networking, education, communication and collaboration. As a member, you help create a consensus voice and a common vision for continual advancement in the planning, design and construction of deep foundations and excavations.

Find Common Ground. Become a Member of DFI

- · Network with thousands of members and industry professionals worldwide
- Get involved locally through DFI's active presence in Europe, India and the Middle East
- Strengthen your knowledge base and obtain practical information at seminars, short courses, workshops and conferences
- Collaborate with colleagues by joining one of 25 plus active Technical Committees, Regional Chapters or a DFI group
- Gain visibility with a corporate member listing on the DFI website, which has 20,000 views each month
- Connect and communicate with industry peers through social media such as DFI's LinkedIn Groups
- Access OneMine.org and download up to 145,000 articles, technical papers & books from DFI & organizations all over the world - at no cost



49th Annual Conference on Deep Foundations

Oct 07th - Oct 10th, 2024

Join us for DFI's 49th Annual Conference on Deep Foundations in Aurora, Colorado, and network with the largest gathering of international practitioners specializing in cutting-edge technologies and risk management for deep foundations, ground improvement, earth retention and excavation support. The goal of the conference is to create a forum for discussion and knowledge exchange amongst industry professionals, government agencies, and academia on the challenges and solutions for water, resiliency and infrastructure.

For more information, and registration visit:

https://dfi-events.org/dfi49/

This e-newsletter of DFI of India is available at DFI of India website: https://dfi.org/india/ Editorial team: Anirudhan I. V., Pranav Iha & P. Sai Sindhu

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