

Book review

Jet Grouting: Technology, Design and Control

P. Croce, A. Flora and G. Modoni (eds). CRC Press, Boca Raton, FL, USA, 2014, ISBN 978-0-415-52640-1, £56.00, 284 pp.

Jet grouting is a technology that has spread worldwide, with a great variety of applications. It is becoming increasingly important in tackling and solving intricate and specific geotechnical problems. This book, by three Italian geoscientists, is most welcome, considering the small amount of literature that is available on this powerful and useful technology.

As academics, the authors cannot help but show their specific and deep knowledge about such an important issue relating to ground improvement and other areas of geotechnics such as jet grouting. This is an additional advantage of this book, as it is not often that academia reveals such extensive and practical experience; this becomes immediately evident when reading Chapter 1 – Introduction. The majority of the problems that are normally faced in the field are relatively well detailed and expressed, in very clear language and with pertinent references.

Chapter 2 makes a general reference to the currently available technology, presenting in-depth details whenever necessary. Almost all types of abilities of jet grouting are mentioned and described, but this reviewer would have liked to have seen a reference to variable diameter columns systems (from bottom to top and top to bottom, for different applications), which the great majority of the available equipment is not able to perform, but when minor modifications are introduced, novel solutions for other types of problems may be available.

Chapters 3 and 4 cover the mechanisms, effects and column properties under physically dominant conditions, which allow a mathematical approach for numerical solutions and other formulations, involving the most important parameters of jet grouting. This is essentially a scientific work that accompanies practice and brings sustainability to the design and prediction of values and results.

The main types of applications of jet grouting are presented and discussed in Chapter 5. This chapter should be read first by newcomers who are not familiar with the technology and the solutions that it can bring to some particular problems, for reinforcing foundations, and building water barriers, tunnel shields and retaining structures.

The design principles are discussed in Chapter 6 with the very useful presentation of some design examples in Chapter 7. Finally, the last chapter reviews the overall control of the process, from initial steps to the end, when the solution has been implemented.

The reviewer highly recommends this book: in the reviewer's opinion, it is one of the best available on such a specific and important topic. This book should prove useful for a range of readers, from those who need to understand the scientific bases for designing an adequate solution, to those who search for better knowledge of the technology itself.

This book is very well written in a language that is clear and easy to understand.

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