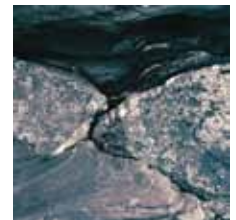
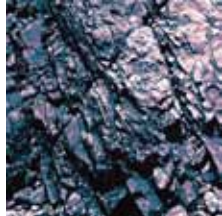
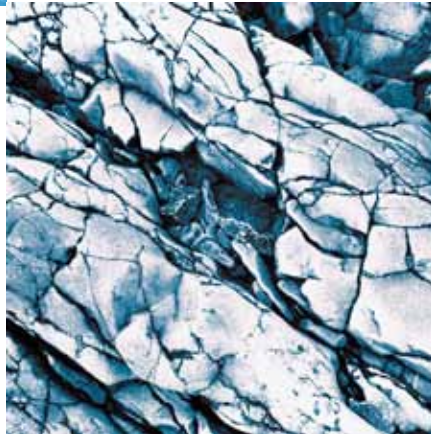


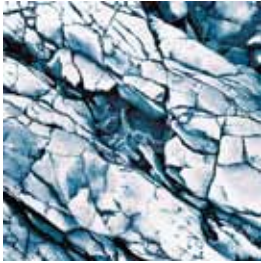
RocProp

A Database for the
Geotechnical
Engineer



Prepared for RocNews
Rocscience Inc., Fall 2003

RocProp: A Database for the Geotechnical Engineer



In geotechnical engineering, time is money, a fact that engineers are keenly aware of as they begin their projects. So, what if you could access a reliable database containing rock properties from around the world – simply select any location on a map and have the data you need at your fingertips? This month, Rocscience is releasing a free beta version of RocProp¹, a database program that does exactly that.

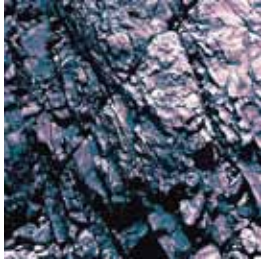
RocProp contains useful data on geotechnical properties that engineers need, gathered in one place, from trusted sources. It's intuitively organized: spatially referenced, so users can find information using geographical coordinates, with a typically user-friendly Rocscience interface. This wide-release beta version doesn't cost a thing – use this helpful resource right away, or contribute your own relevant data to help us build the most comprehensive global geotechnical properties database around.

RocProp 1.0 Beta contains information on intact rock parameters and rock type descriptions. Each RocProp record consists of sub-records containing information on parameters and geographic coordinates, as well as references to its sources. Parameters provided in the database include rock type, density, modulus of elasticity, modulus of rigidity, Poisson's ratio, compressive and tensile strengths – important data routinely used in rock engineering analyses.

All data in RocProp has been rigorously evaluated to ensure it's from trusted sources, using internationally accepted geotechnical testing standards. Version 1.0 covers a wide spectrum of rock properties, derived from three primary sources², including two textbooks and over 100 published journal articles.

Geographical indexing is the key to RocProp – to create a flexible means of searching for data relevant to projects in different parts of the world, we've organized geotechnical properties data spatially. RocProp allows users to search for properties according to: rock type, geographical coordinates, geographical region (continent and country), and geographical feature. Where actual sample locations were not available for records, coordinates of the general project area were determined through searches of geographical atlases and the Internet.

By performing a rock type search, users can extract every record in the database that matches a type specified by the user. The geographical coordinate search option allows a user to specify a location (in terms of latitude and longitude) and extract all records within an indicated radius around it. The geographical region search option allows users to also extract all information available on a continent or country. And the geographical feature search method makes it



possible to locate records in the vicinity of a particular geographic or construction feature, as well as around cities, towns and villages. RocProp also offers valuable data sorting capabilities. These different functionalities can be used separately, or in combination, allowing engineers to quickly access the data they need to make important decisions.

RocProp is easy to use and intuitive, so you can use it immediately. Use Internet Explorer, Netscape or any other browser to access RocProp, search for, retrieve and even, add, records. Because it can be accessed using the web browser on your desktop, the learning curve for this application is minimal -- you can begin using the RocProp database right away. RocProp has been designed, first and foremost, with the needs of engineers in mind – to allow you to successfully do preliminary modeling and identify information gaps in your projects, saving time and money.

To organize the voluminous data necessary to create a world wide geotechnical properties database, we gathered your feedback, identified different user needs and created a hierarchical database for maximum flexibility. RocProp's XML tree structure allows documents to be expanded as new data is added. XML (Extensible Markup Language) was chosen for its ability to encode information in plain text and for its wide-spread use: data can be read across platforms and operating systems and can be easily moved over the Internet. In the future, RocProp users will also be able to move data between applications.

Today, more than ever, there are increasing demands on geotechnical engineers to create better designs, with fewer resources. Rocscience created RocProp to aid engineers with their preliminary studies and designs. We have the right resources for this undertaking: proven expertise in rock and soil, and in delivering accessible technologies that can put this knowledge in the hands of working engineers. Let us help you execute dependable designs as soon as possible, from the very beginning of your project.

* Update: RocProp 1.0 is now part of the [RocData 4.0](#) software.

¹ The development of RocProp was jointly funded by Rocscience Inc. and the Lassonde Institute, University of Toronto. The first version of RocProp was programmed by Alexandr Turichshev as part of his M.A.Sc. thesis, *A Web-accessible Database for Intact Rock Properties and a XML Data Format for Intact Rock Properties*, Department of Civil Engineering, University of Toronto, 2002. Further enhancements were provided by Kien Vinh Duong and Jason DeVillis.

² *Handbook on Mechanical Properties of Rocks: Testing Techniques and Results*, Volume II, by R.D. Lama and V.S. Vutukuri. Trans Tech Publications. Clausthal, Germany. 1978.

Geotechnical Properties of Rock, by R. Jackson, B. Gorski, and M. Gyenge. Ministry of Supply and Services Canada. Canada Communication Group – Publishing. Ottawa, Canada. 1995.

Published papers listed in the Lama and Vutukuri book.