El Teniente Fragmentation Study

CIVIL • ENVIRONMENTAL • MANUFACTURING • **MINING** • OIL & GAS • POWER GENERATION

PROJECT DESCRIPTION

Codelco, Chile

El Teniente Mine, Chile

PFC3D™

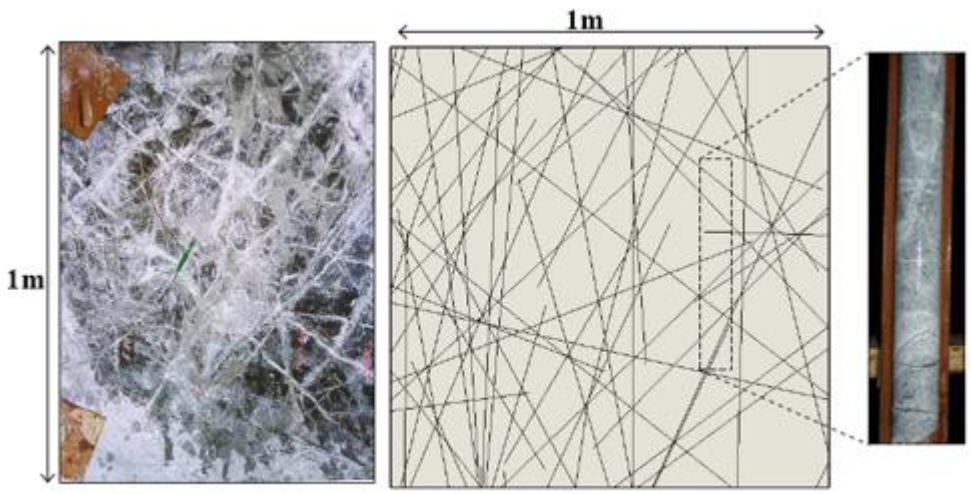
Fragmentation is an important aspect of all block caving operations. The primary fragmentation can be difficult to assess, in particular in complex geological environments, and for rock masses subjected to varying stress as is normally the case in block caving.

ITASCA'S ROLE

Itasca conducted an extensive analysis of new fracturing (orientation, persistence and spacing) due to stress-related damage as the rock mass follows the prescribed stress path. Work was carried out both on and off site and also included training courses on the use of *PFC* and *SRM* (Synthetic Rock Mass*).*

PROJECT RESULTS

Primary fragmentation was successfully predicted for a particular area in the El Teniente Mine. Technology transfer in the form of training on *PFC* and *SRM* was also conducted, with good results.



Stockwork rock mass from El Teniente, and fracture network model representing the stockwork [Source: Brzovic A. and Herrera, S. 2011. Assessing geological vein size and intensity using discrete fracture network modeling at the El Teniente Mine, Chile. ARMA 2011 (paper 252)]

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