Geophysical Research Abstracts
Vol. 17, EGU2015-849, 2015
EGU General Assembly 2015

Recovery technologies for building materials

Veiko Karu, Martin Nurme, and Ingo Valgma
Tallinn University of Technology, Department of Mining, Tallinn, Estonia (veiko.karu@ttu.ee)

Mining industry provides building materials for construction. Civil engineers have settled the quality parameters for construction materials. When we produce high quality building materials from carbonate rock (limestone, dolostone), then the estimated waste share is 25% to 30%, depending on crushing principles and rock quality. The challenge is to find suitable technology for waste recovery. During international mining waste related cooperation project MIN-NOVATION (www.min-novation.eu), partners mapped possibilities for waste recovery in mining industry and pointed out good examples and case studies. One example from Estonia showed that when we produce limestone aggregate, then we produce up to 30% waste material (fines with size 0-4mm). This waste material we can see as secondary raw material for building materials. Recovery technology for this fine grained material has been achieved with CDE separation plant. During the process the plant washes out minus 63 micron material from the limestone fines. This technology allows us to use 92% of all limestone reserves. By-product from 63 microns to 4 mm we can use as filler in concrete or as fine limestone aggregate for building or building materials.

MIN-NOVATION project partners also established four pilot stations to study other mineral waste recovery technologies and solutions. Main aims on this research are to find the technology for recovery of mineral wastes and usage for new by-products from mineral mining waste. Before industrial production, testing period or case studies are needed.

This research is part of the study of Sustainable and environmentally acceptable Oil shale mining No. 3.2.0501.11-0025 http://mi.ttu.ee/etp and the project B36 Extraction and processing of rock with selective methods – http://mi.ttu.ee/separation; http://mi.ttu.ee/miningwaste/