

Effective and sustainable use of Dolomitic materials in The Mbuji-Mayi region (DR Congo)

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Due to the scarcity of alluvial diamond deposits, intensive artisanal mining and crushing of building materials has grown in the Mbuji-Mayi region. This type of operation is performed without any selectivity of materials. Our study aims to characterize the different facies present in the subgroup B11b - B11c of Mbuji-Mayi Supergroup in order to define the appropriate applications fields for each facies. Drill cores samples were obtained from The S13B survey (316 m) performed at Kanshi in the city of Mbuji-Mayi and preserved in the Royal Museum for Central Africa (Tervuren). The XRF analysis results show a variability of CaO, MgO and SiO₂ in the upper and lower parts of the survey while the intermediate portion has a low variability of the same components as well as interesting grades. CaO (> 30%), MgO (> 20%). Optical microscopy and physical tests showed low porosity of materials of upper and lower zones whereas the mechanical strengths are ranged between 200 and 380 MPa. All these results were used to classify different types of materials. So for example, the intermediate layers must not be exploited for crushed aggregates purposes. They are better indicated for the production of decarbonated dolomite, raw ground dolomite, or magnesia. Decarbonated dolomite could eventually find applications in the metallurgy of nonferrous metals whose results of exploration in the region are very promising. While the raw ground dolomite could serve as an amendment in agriculture. The exploitation of aggregates may currently be restricted to upper and lower layers with the high content SiO₂. Thus this study has contributed to an effective and sustainable management of our reserves of dolomitic materials.

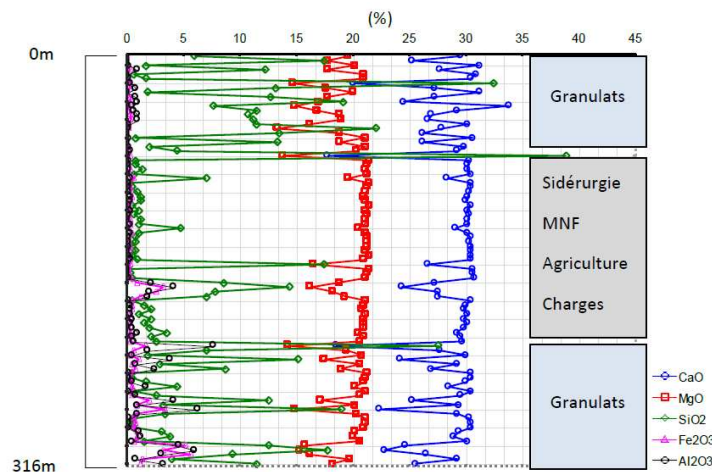


Fig. Analyses XRF des échantillons du sondage S13B.

Figure 1. XRF results show how different components vary from the beginning until to the end of the survey.