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Influence of petrographic parameters and the test conditions on the assessment of fines by loss-in-weigh drying method

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The quality of aggregate fine fraction (0/4 mm) is commonly tested for clay minerals by methylene blue absorption method. Special methodology that has been suggested as a special addendum of the translated EN standard in the Czech Republic requires testing of fine fraction by its exposure to NaCl atmosphere and drying at temperatures (190˚C). As this procedure systematically disqualifies high quality fresh basaltic rocks that make 30% of the Czech crushed rock production, the investigation focused on the possible reasons. The petrographic and analytical study (XRD, DTA/TG, SEM/EDS) proved that low amount of zeolites (1-3 wt. %) in studied rocks can cause significant changes in the measured value. This paper thus shows how the test results can be influenced by suggested methodology and not by the quality of the rock.