



Rhomb porphyry – a new potentially alkali reactive rock type

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Micro structural analyses of two damaged Norwegian concrete structures have demonstrated rhomb porphyry – a feldspar rock – to have reacted deleteriously in the structures due to Alkali Aggregate reaction (AAR). This is concluded from observed signs of reaction, which are similar to what is known from other Norwegian slow-reactive aggregates. Rhomb porphyry is composed solely of feldspar minerals, which are not on the list of reactive minerals. These aggregates should therefore in theory not be alkali reactive – which they apparently are.

Research has shown feldspars to be able to release alkalis (sodium and potassium) in laboratory tests and hereby possibly accelerate the reaction. Further – feldspars in Norwegian bedrock are very often altered into sericite, which is a micro-size aggregation of primarily quartz and mica. The paper will discuss the possibility that some feldspars can cause a sort of self-destruction by the combination of alkali release and the presence of micro quartz from Sericitization.