

Our ref: APPBCA-2020-02

02 March 2020

For enquiries, please contact:
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BCA's Online Feedback Form:
<https://www.bca.gov.sg/feedbackform/>

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Dear Sir / Madam

AGGREGATES FOR CONCRETE

Objective

This circular aims to remind the industry that aggregates that have the potential for alkali-carbonate or alkali-silica reactions should not be used as constituent materials in concrete for building works in Singapore, without prior approval from the Commissioner of Building Control ("CBC").

Background

2 Granite, sand or granite fines generally comprise of quartz are commonly acceptable aggregates used for the production of structural concrete for building works in Singapore. The use of such aggregates for concrete in Singapore is well established and the industry is familiar with the field performance of these aggregates. However, it has come to BCA's attention that besides granite and sand, there may have been attempts to use alternative aggregates such as limestone, rhyolite, gneiss and basalt to produce structural concrete.

3 This circular is to remind the industry, and in particular, the ready-mixed concrete suppliers, the builders and Qualified Persons (QPs) not to use the above-mentioned alternative aggregates (i.e. both fine and coarse aggregates) for use in structural concrete, unless the CBC's permission is obtained. The long-term performance of alternative aggregates in concrete is not known and may potentially lead to structural safety issues in the buildings constructed using such concrete.

4 We wish to draw attention to regulation 38(1) of the Building Control Regulations 2003 read with the Sixth Schedule of the same regulations. These provisions prohibit certain materials from being used in building works unless CBC's permission is granted.


5 Builders and QPs should seek BCA's early consultation and obtain prior approval from the CBC if the use of such alternative aggregates is contemplated for use in their projects. CBC may request for comprehensive tests to be conducted and for the test reports to be submitted together with relevant technical papers for his assessment.

6 In addition, we would like to remind the ready-mixed suppliers to indicate in the concrete mix design, the types of aggregates used and to seek the consent of both the QP and the builder should there be a change to the mix design. QPs and site supervisors should carry out regular spot checks on concrete batching plants; and aggregates sampled should be sent to accredited laboratories for testing. Details of these requirements and testing frequency for aggregates and raw materials should be included in the site supervision plan (refer to circular on "Site Supervision Plan for Structural and Geotechnical Works" dated 2 Sep 2019).

For Clarification

7 We would appreciate it if you could bring the contents of this circular to the attention of all those concerned. Should you need any clarification, please submit your enquiry through BCA's Online Feedback Form at <https://www.bca.gov.sg/feedbackform/> or call us at 1800 342 5222.

Yours faithfully



ER. LUNG HIAN HAO
DIRECTOR, BUILDING ENGINEERING GROUP
for COMMISSIONER OF BUILDING CONTROL

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