



## BCA TEST REQUIREMENTS FOR IMPORTED COARSE AND FINE AGGREGATES

(Updated as on 1<sup>st</sup> December 2022)

The Building and Construction Authority Act Part VIA Supply of Essential Construction Materials (“the Act”) and the BCA (Importers’ Licensing) (Amendment) Regulations 2016 (“the Regulations”) have imposed a 3-Stage testing regime on imported aggregates to determine the quality of aggregates imported from overseas sources (See Annex A for the test requirement and specifications of the Testing Regime).

For a licensed importer (also known as Licensee) to import aggregates from the intended Source i.e. Quarry/ Mining Site, the aggregates will need to undergo the respective stages of the testing regime before it can be imported (obtained an Import Permit via [TradeXchange website](#)) and used in any building works, street works or railway works in Singapore. The testing regime consists of:

### 1 **BCA Stage 1 Pre-Import Test Requirements (“S1”)**

*(Pursuant to Section 34 of the Act & Reg. 13 of the Regulations)*

- 1.1 Licensee will need to demonstrate that the quality of the intended aggregates complies with the requirements set by BCA, namely Stage 1 Pre-Import Test (“**S1 Test**”), prior to importing such aggregates. Licensee is required to prepare the followings and complete the Electronic Form via [FormSG - S1 Submission](#) in PDF Format (.pdf):
  - a. Test reports (in colour) indicating the Source, product type and the results conducted on different parts of the same sample in accordance with the tests required by BCA as listed in Annex A with file size no larger than 3 megabytes. Test report submitted to BCA must meet the following conditions at the point of submission.
    - i. The Petrographic Examination and Mortar Bar Method test reports must **not be more than 1 year old** and must be conducted on the same aggregate sample and in the same laboratory,
    - ii. The Sulphate content test result must **not be more than 3 months old**,
    - iii. The Chloride content test result must **not be more than 1 week old**.
  - b. Other Supporting Documents to be compiled with file size no larger than 3 megabytes, in the following order as listed below:
    - iv. Acknowledgement Letter from the owner or authorised operator of the Source that the tests are conducted on samples from the Source.
    - v. Authorisation Letter(s) for the Importer to obtain a supply and import of the aggregates from the Source in the following order:
      - From the Owner or Authorised Operator (if applicable) of the Source to the Supplier.
      - From the Supplier to the Importer (if applicable); and
      - The Importer’s Acknowledgement Letter.



- vi. Detailed maps (in colour) in the following order, from the Source Country to Singapore, Source Country Province, and Source Location (zoomed in) indicating the exact location of the Source within the country of origin.
- c. **If required by BCA**, a notification will be sent to you for other submissions such as:
  - vii. Geologist Report, Production Control Measures, Mining / Factory License, Export Permit, etc. to be emailed to BCA.
  - viii. 3 nos. of 150-gram sample in plastic containers to the Security Guardhouse at the entrance of BCA Pulau Punggol Aggregate Terminal located at 84 Seletar North Link, Singapore 797615. The containers must be sealed and clearly labelled with the followings:
    - Name of importer.
    - Name of Source.
    - Date.
    - Type of materials; and
    - Submission Type (S1 or S2 Renewal)
- 1.2 BCA shall issue an “**S1 Letter**” (in the form of email) if the application has met the S1 test requirements. The S1 Letter is valid up to 15 months as indicated in the S1 Letter (from the date of the Petrographic Examination and the Mortar Bar Method test reports whichever is earlier).
- 1.3 Licensee will then be allowed to import the first consignment from the Source for the Stage 2 Confirmation Test (S2) along with a valid Import Permit via [TradeNet®](#).

#### Laboratories

- 1.4 Licensees who wish to test the samples overseas are to ensure that the laboratories are accredited by the respective overseas accreditation bodies to conduct the type of test as indicated in Table 1 of Annex A. The respective overseas accreditation bodies must be under the Mutual Recognition Arrangements (MRAs) with [Singapore Accreditation Council \(SAC\)](#). Documentary evidence of laboratory accreditation must be submitted for verification.
- 1.5 The tests may also be conducted in Singapore by the [Authorised Analysts](#) designated by BCA. The quantity of aggregates submitted for testing should be at least 50kg. BCA will notify accordingly if the application has failed to meet S1 test requirements. Importing of aggregates from that same source shall be prohibited.

## **2 BCA Stage 2 Confirmation Test Requirements (“S2”)**

*(Pursuant to Section 36 and Section 37 of the Act)*

- 2.1 Licensees are to complete the Electronic Form via [FormSG - S2 Storage Permit](#), and to apply for valid Import Permit, prior to the first import meant for the **S2 Test**.



- 2.2 For imports by sea through BCA Aggregate Terminals and BCA's approved direct landing sites, a valid BCA's [Landing Permit](#) is also required.
- 2.3 For the purposes of expediency, application must be successfully submitted at least 6 working days before the estimated arrival of the consignment at the place of entry. Any amendment to the submitted storage permit application form must be made at least 4 working days before the estimated arrival of the consignment at the place of entry.
- 2.4 BCA will notify the outcome of the applications accordingly and Isolation Orders may be imposed if deemed necessary. Appeals to waive the isolation are assessed on a case-to-case basis.
- 2.5 Licensees are to arrange with the BCA officer of at least 24 hours prior to the arrival of the first consignment into Singapore. Samples shall be collected before the unloading of the aggregates based on BCA's discretion, unless BCA instructed otherwise.
- 2.6 The same Test Method as S1 shall be conducted by an Authorised Analyst designated by BCA on the sample collected. The cost for these tests will be borne by BCA.
- 2.7 BCA shall notify the Licensee if the test result fails to meet the **Test Requirement** and shall issue a **Preliminary Determination** with the necessary information on the subsequent measures. (Refer item 5, **Re-test for S2 Test and S3 Test**).
- 2.8 BCA shall issue an "**S2 Letter**" (in the form of email) if the consignment has met the Test Requirement to allow the Licensee to further import from the source as indicated in the S2 Letter.
- 2.9 The S2 Letter will be valid for up to 12 months. The period may be further extended if the consignment is regularly imported with intervals of not more than 6 months between each consignment.
- 2.10 To renew an expired S2 Status, Licensees shall prepare the following and complete the Electronic Form via [FormSG – Submission of S2 Renewal](#) in PDF Format (.pdf) :
  - a. Test reports (in colour) indicating the Source, product type and the results conducted on different parts of the same sample in accordance with the tests required by BCA as listed in Annex A with file size no larger than 3 megabytes. Test report submitted to BCA must meet the following conditions at the point of submission.
    - i. The Petrographic Examination and Mortar Bar Method test reports must **not be more than 1 year old** and must be conducted on the same aggregate sample and in the same laboratory,
    - ii. The Sulphate content test result must **not be more than 3 months old**,
    - iii. The Chloride content test result must **not be more than 1 week old**.



- a. Other Supporting Documents to be compiled with file size no larger than 3 megabytes, in the following order as listed below:
  - iv. Acknowledgement Letter from the owner or authorised operator of the Source that the tests are conducted on samples from the Source.
  - v. Authorisation Letter(s) for the Importer to obtain a supply and import of the aggregates from the Source in the following order:
    - From the Owner or Authorised Operator (if applicable) of the Source to the Supplier.
    - From the Supplier to the Importer (if applicable); and
    - The Importer's Acknowledgement Letter.
  - vi. Detailed maps (in colour) in the following order, from the Source Country to Singapore, Source Country Province, and Source Location (zoomed in) indicating the exact location of the Source within the country of origin.
- b. **If required by BCA**, a notification will be sent to you for other submissions such as:
  - vii. Geologist Report, Production Control Measures, Mining / Factory License, Export Permit, etc. to be emailed to BCA.
  - viii. 3 nos. of 150-gram sample in plastic containers to the Security Guardhouse at the entrance of BCA Pulau Punggol Aggregate Terminal located at 84 Seletar North Link, Singapore 797615. The containers must be sealed and clearly labelled with the followings:
    - Name of importer.
    - Name of Source.
    - Date.
    - Type of materials; and
    - Submission Type (S1 or S2 Renewal)

### **3 BCA Stage 3 for Random Test Requirement ("S3")**

*(Pursuant to Section 36(6) and Section 37 of the Act)*

- 3.1 Random tests ("**S3 Test**") may be conducted by BCA on any of the subsequent consignments for surveillance purposes. Please ensure consistency in the quality of materials imported.
- 3.2 Apart of the type of test listed in Table 1 of Annex A, BCA may also conduct other test(s) on site for example Chloride Content Test, etc. The cost for these test(s) will be borne by the BCA.
- 3.3 Unless informed otherwise by BCA, the Licensee may continue to further import from the source while the S3 Test is ongoing.

### **4 Sample collection for S2 Test and S3 Test**

*(Pursuant to Reg. 19 of the Regulations)*



- 4.1 BCA shall issue a “**Notice of Sample Collection**” (in the form of email) to the company’s representative / agent in charge of the consignment, for the sample collection.
- 4.2 The samples shall be divided into 2 parts. Each part shall be sealed and labelled by BCA or its Authorised Agents. BCA shall then send the first part of the sample to any of the BCA’s Authorised Analyst while retaining the second part. The Licensee may request for a re-test if required (Refer item 5, **Re-test for S2 Test and S3 Test**).

## **5 Re-test for S2 Test and S3 Test** (Pursuant to Reg. 21 and Reg. 22 of the Regulations)

### BCA’s Preliminary Determination on first part sample

- 5.1 BCA shall issue a “**Notice of Preliminary Determination**” (in the form of email) with the necessary information on the subsequent measures if the test result fails to meet the Test Requirement
- 5.2 Licensee may request via email to BCA, within 48 hours after receiving the Notice, to submit the 2<sup>nd</sup> part of the samples for evaluation by the same laboratory. The cost of the retest will be borne by the Licensee and the amount will be disclosed in BCA’s notice.
- 5.3 If the Licensee accept BCA’s Notice of Preliminary Determination or if BCA does not receive any request for a retest in accordance with paragraph 5.2 above, the determination shall be deemed as final.

### BCA’s Final Determination on S2 and S3 Test Results

- 5.4 BCA shall issue a “**Notice of Final Determination**” (in the form of email) with the necessary information on the subsequent measures if the re-test result still fails to meet the Test Requirement. (Refer item 6, **Handling of Failed Aggregates**). The Licensee are to seize any further import from the failed source.
- 5.5 Licensee may appeal for further import from the failed source in writing within 9 months from the date of the Notice of Final Determination with necessary details such as the number of consignments with the respective estimated quantity of aggregates and the proposed measures to avoid re-occurrence.

## **6 Handling of Failed Aggregates** (Pursuant to Reg. 24, Reg. 25, and Reg. 26 of the Regulations)

### Failed aggregates under isolation

- 6.1 The isolated aggregates shall either be destroyed, disposed of, or removed from Singapore within a period stipulated by BCA.

- 6.2 Licensee are required to lodge a disposal plan with BCA at least 14 days before the start of such disposal or removal and not later than 7 days after receiving BCA's Notice of Final Determination.

Failed aggregates not under isolation

- 6.3 Licensee are required to notify every person the aggregates were supplied to, whether or not it is from the same consignment as the failed aggregates, not later than 5 days from the "Supply Period", i.e., between the arrival of the failed aggregates to the 7<sup>th</sup> day upon the issuance of the Preliminary Determination. The notification shall include BCA's determination with respect to the sample taken from that consignment, the type, quantity, and date of import of that consignment.
- 6.4 The Licensee are required to notify BCA on the identity and business address of every person in above, pursuant to regulation 22(5) of the Regulations not later than 5 days after serving the information to the person.

**Further Enquiries**

Please contact any of the following BCA officers if you need further assistance:

- Arman Aman Email: [arman\\_aman@bca.gov.sg](mailto:arman_aman@bca.gov.sg)
- Muthukumaran Email: [muthukumaran\\_anbalagan@bca.gov.sg](mailto:muthukumaran_anbalagan@bca.gov.sg)

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BCA reserves all rights to amend the contents provided herewith without prior notice.  
Licensees should always check for the latest test guidelines with BCA officers or in BCA homepage, [Importers Licensing Scheme | Building and Construction Authority \(BCA\)](#) .

### **Annex A: Testing of Imported Aggregates**

The test requirements and specifications for 3-Stage Testing on coarse and fine aggregates are listed below:

**Table 1: Test Methods and Test Standards for Imported Coarse and Fine Aggregates (Pursuant to Reg. 23)**

Description	Test Method	Relevant Standards	Specification
Water Soluble Chloride Content	EN1744-1 Clause 7	SS EN 12620	Chloride ion content $\leq$ 0.01 % by mass of chloride ion of combined aggregate.
Acid Soluble Sulphates Content	EN1744-1 Clause 12	SS EN 12620	Sulphate content of the aggregates and filler aggregates for concrete $\leq$ 0.8 % by mass for aggregates other than air-cooled blast furnace slag.
Petrographic Examination	ASTM C295	ASTM C33	Aggregates should not contain any constituents that are deleterious to concrete.
Alkali-silica reactivity (Mortar Bar Method)	ASTM C1260	ASTM C33	Only aggregates with expansion value not greater than 0.20% shall be used.

*Please note that this is not an exhaustive list. BCA reserves the right to impose further tests on the aggregates as and when required, if deemed necessary.*

Imported aggregates meant for concreting purposes shall also comply with the requirements stipulated under [SS EN 12620: Specification for Aggregates for concrete](#).

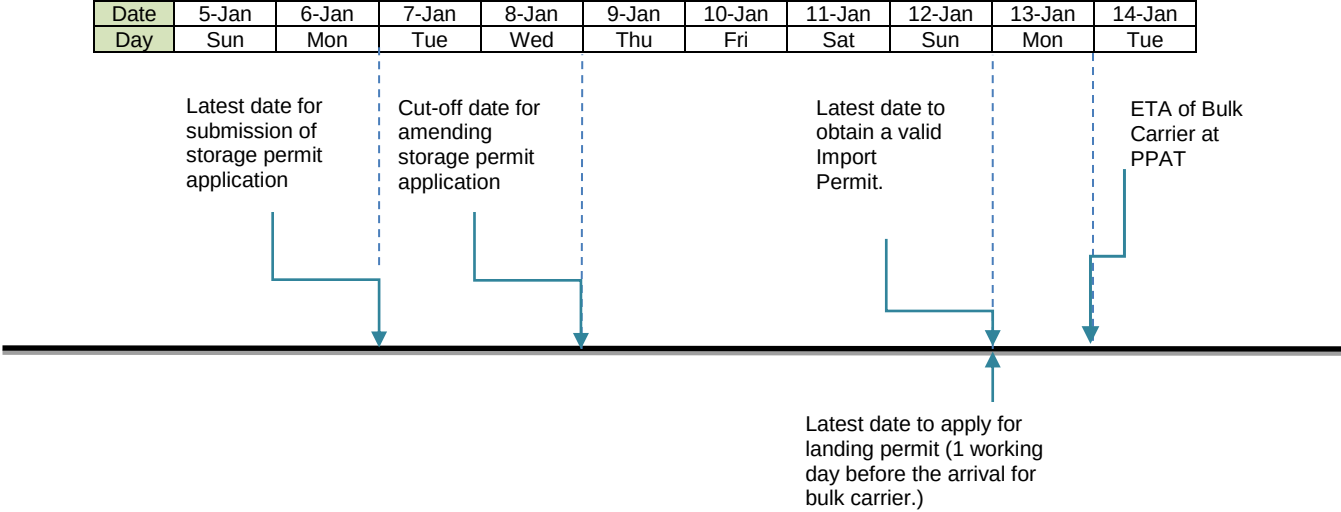
Licensees are strongly advised to check with their respective clients for any other specific tests required pertaining to the use of aggregates for concreting purposes.

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Licensees should always check for the latest test requirements with BCA officers or in BCA homepage, [Importers Licensing Scheme | Building and Construction Authority \(BCA\)](#)

**Annex B**

**Illustration 1**

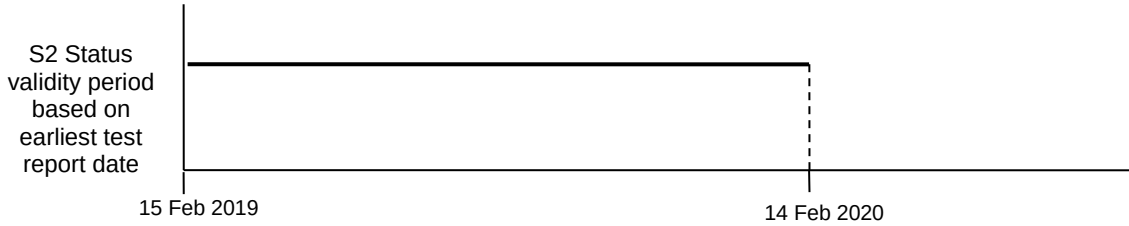




## Annex C

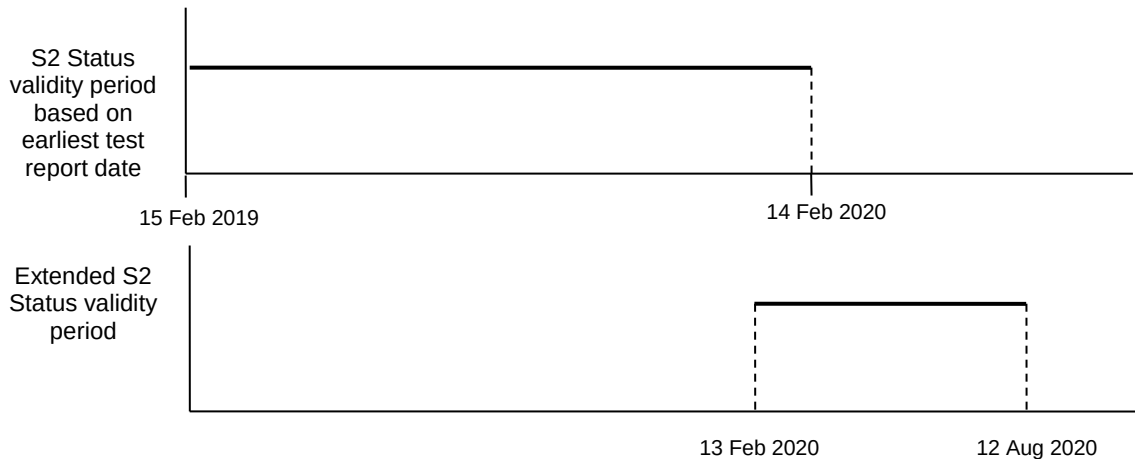
### Example

- 1) Date of passed S2 Petrographic Examination test report: 15 Feb 2019  
Date of passed S2 Mortar Bar Method test report: 14 Feb 2020



The S2 Status is valid until 14 Feb 2020 based on the date of the passed Mortar Bar Method test report, i.e. the earlier date of the two passed test reports.

- 2) Following from above, if there is a consignment imported on 13 Feb 2020, i.e. not more than 6 months before 14 Feb 2020, the S2 Status validity will be extended till 12 Aug 2020.



- 3) Continuing from above, if there is subsequent consignment imported on 20 Feb 2020, the S2 Status validity will be further extended until 19 Aug 2020. Subsequent import(s) within the current validity period will further extend the validity period till 6 months from the date of that import.

