



HONG KONG CONCRETE INSTITUTE
PRODUCT CONFORMITY CERTIFICATION SCHEME
- AGGREGATES FOR CONCRETE (PCCS-AC)



PUBLISHED BY:

HONG KONG CONCRETE INSTITUTE

ISSUE 1:

DECEMBER 31, 2015

PRODUCT CONFORMITY CERTIFICATION SCHEME FOR AGGREGATES FOR CONCRETE (PCCS-AC)

This Scheme is developed by the Hong Kong Concrete Institute (HKCI) to provide a framework for the certification of the production and supply of aggregates for concrete. Producers and suppliers of aggregates for concrete shall also comply with all other statutory regulations and shall operate a quality management system conforming to the requirements stipulated in ISO9001 standard.

This Scheme is established in accordance with ISO 17067: 2013 with the joint effort of the Drafting Committee and Review Committee with representatives from local academics, government bodies, public organizations, industrial associations, concrete producers, certification bodies and institution for qualified auditors under the full support from the Executive Board of HKCI.

Members of the Drafting Committee for the PCCS-AC: Issue 1: 2015

Chairman:

Ir Prof Y L Wong Hong Kong Concrete Institute

Members:

Ir Dr Simon H F Wong Technological & Higher Education Institution of Hong Kong
Ir Dr P L Ng The University of Hong Kong
Dr K T Wan Brunel University London

Members of the Review Committee for the PCCS-AC: Issue 1: 2015

Ir Leung Kin-Yu, Greg Civil Engineering Development Department
Ir H D Wong Civil Engineering Development Department
Ir Dr W K Fung Hong Kong Institution of Engineers - Materials Division
Mr. Ross Chow The Institute of Quarrying - Hong Kong Branch
Ir Corey Ho MTR
Ir Dr Tommy Lo Hong Kong Institution of Certified Auditors
Ir Wilman Chan Hong Kong Quality Assurance Agency
Mr. Ng Heong Chen Hong Kong Contract Quarry Association
Mr. David Chan Import Aggregates Suppliers Association
Ir Alan Wu Hong Kong Concrete Producers Association

All enquiries concerning the status, issue of amendments and interpretation of the content shall be directed to the Drafting Committee through the Secretary of the HKCI.

ADMINISTRATIVE REGULATIONS

Contents

	Page
1. Introduction	3
2. General Definitions	4
3. Prerequisites for Participation	7
4. Procedures for Application and Certification	7
5. Obligations of Participants of this Scheme	12
6. Surveillance Assessment and Recertification Assessment	13
7. Suspension, Change of Scope and Withdrawal of Certification	16
8. Information on Certified Aggregate, Procedures and Suppliers	17
9. Appeals against Decisions	17
10. Changes to the Regulations	17
11. Complaints	18
12. Confidentiality	18
13. Experience and Qualification of Lead Auditors and Technical Auditors	18
14. Publication of the Directory of Certified Products	19
15. Contracts among the Hong Kong Concrete Institute, the Certification Body, the Applicants and the Participants	19

1. INTRODUCTION

- 1.1 Construction Standard 3 (CS3) provides a standard for aggregates obtained from natural sources for concrete production in Hong Kong. It also contains requirements for recycled aggregates which are suitable for production of some prescribed mix concrete and designed mix concrete. The content of this Scheme has made reference to CS3:2013. When there is an updated version of CS3:2013 officially launched, all requirements in the updated version shall be automatically followed and all reference made in Scheme to CS3:2013 shall also be automatically changed to the updated version. In the event any difference in the requirements between this Scheme and CS3:2013 or its updated version, those in CS3:2013 or its updated version shall prevail.
- 1.2 The scope of the Scheme is to cover the production and supply processes of coarse and fine natural aggregates, and coarse recycled aggregate, as defined in Section 2 of CS3:2013. It covers aggregates having an oven-dried particle density not less than 2,000 kg/m³, and does not cover lightweight aggregates, heavyweight aggregates and all-in aggregates.
- 1.3 This Scheme is to ensure that all aggregates covered under its scope being manufactured and/or supplied by certified aggregate producers/suppliers meet Purchasers' specified requirements in CS3.
- 1.4 This is a product certification scheme that requires Certified Aggregate Suppliers/producers to operate a quality system which complies with ISO9001 and these Regulations.
- 1.5 These Administrative Regulations set out the rules for the operation of the Scheme and the rights and obligations of Certified Aggregate Suppliers/producers in relation to the Scheme.
- 1.6 This is a Type 5 product certification scheme in accordance with ISO/IEC 17067 including the requirements for certification and periodic surveillance.
- 1.7 Any certification bodies who use this Scheme for certification of aggregate producers/suppliers shall be accredited by Hong Kong Accreditation Service (HKAS) or its Mutual Recognition Agreement (MRA) partners in accordance with this Scheme and ISO/IEC 17065.

- 1.8 This Scheme can be assessed on the website of the Hong Kong Concrete Institute. Hard copy shall also be obtainable from the Hong Kong Concrete Institute subject to availability with the charge determined from time to time by the Hong Kong Concrete Institute.

2. GENERAL DEFINITIONS

- 2.1 For the purpose of this document, the terms and definitions given in ISO/IEC 17000, ISO/IEC 17065, ISO/IEC 17067 and the following apply::

Administrative Regulations: The regulations which set out basic administrative requirements for the Scheme.

Aggregate Producer: A registered company responsible for producing aggregates complying with the requirements of CS3. Aggregate Producer may also be responsible for the supply and delivery of aggregates directly to Purchasers.

Aggregate Storage Depot: Bulk aggregate storage facility outside the aggregate production quarry used for the dispatch of aggregate after transferring from the production quarry. The Aggregate Producer or the Aggregate Supplier shall define their responsibility in the storage and delivery of the aggregate products.

Aggregate Supplier: A registered company who is responsible for the supply and delivery of aggregates complying with CS3 from an Aggregate Producer with defined responsibility in relation to the storage and delivery of the aggregate products with the Aggregate Producer and other Aggregate Suppliers in the supply chain.

Applicant: A registered company who has formally applied to become a Certified Aggregate Producer and/or Certified Aggregate Supplier. The Applicant can be an aggregate producer or an

aggregate supplier with clearly defined responsibility in relation to production, supply and delivery of the aggregate products.

Autocontrol Testing: Continual testing carried out by an Aggregate Producer or an Aggregate Supplier conducted in accordance with CS3 and this Scheme.

Areas for Improvement: Areas for improvement (AFI) are not nonconformities and corrective actions are not mandatory. However, the assessment team judges by their experience that these are areas which may incur nonconformities if special attention is not paid or the potential problem is not resolved.

Assessment: An in-depth appraisal of an Applicant's quality management systems, production processes, testing processes and quality of aggregate products for assessing compliance with the CS3 and the Regulations in this Scheme. It is classified as Certification, Surveillance and Recertification assessments.

Audit Testing: Sampling and testing of aggregate ordered by an assessment team during Certification, Surveillance and Recertification Assessments in accordance with this Scheme.

Auditor: A nominee of the Certification Body appointed to carry out assessments.

Certificate of Conformity: The certificate issued by the Certification Body to confirm certification of an Applicant for a defined certification scope within the supply chain of production, supply and delivery for aggregates conforming to CS3 requirements

Certification: Acceptance by the Certification Body, as the result of a successful assessment confirming that the Applicant's management system, operation processes and results of which comply with the CS3 and Regulations in this Scheme.

Certification Body: An organization who is accredited by HKAS, or its

MRA Partners to process applications from the Applicant, to conduct subsequent auditing and certification processes for the Applicants and to grant certification or otherwise to the Applicants.

Major Non-conformity: A major non-conformity is a non-conformity which has serious adverse effect on the validity of an activity or compliance of product quality resulting in violation of the requirements in ISO9001, CS3 or the Regulations in this Scheme, or; The existence of serious doubt on the technical validity of an activity or compliance of product quality as indicated by a series of related Minor Non-conformities or persistence of a Minor Non-conformity for an extended period of time and without any plausible explanation.

Minor Non-conformity: Non-conformities that have no serious adverse effect on the validity of the activity, its results or the competence of the organisation and shall not be a deliberate violation of the requirements in ISO9001, CS3 and Regulations in this Scheme, and all non-conformities which cannot be graded as critical or major non-conformity.

Participant: An Applicant who has been certified to this Scheme through successful Certification Assessment and the Certification is continuously maintained.

Purchaser: An individual, firm or company who entered into a contract with a Certified Aggregate Producer or Certified Aggregate Supplier to purchase certified aggregates.

Regulations: The combined Administrative Regulations and Technical Regulations.

Scheme: The product conformity certification scheme for the certification of the production of aggregate products (PCCS-AP) to CS3 requirements.

Source: The Source of aggregates shall be that as defined in CS3.

Technical Regulations: The regulations set out the technical requirements of the Scheme.

3. PREREQUISITES FOR PARTICIPATION

- 3.1 Any individual, firm or company engaged in the production and/or supply of aggregates shall be eligible as an Applicant to apply to become a Certified Aggregate Producer or Certified Aggregate Supplier.
- 3.2 The Applicant will be required to demonstrate the ability to comply with the Regulations and shall confirm agreement to comply with the Regulations.
- 3.3 The Applicant shall establish and maintain a documented quality system in accordance with the requirements of ISO9001, CS3 and the Regulations of this Scheme.
- 3.4 The Applicant shall fulfill relevant statutory and regulatory requirements for the production and/or supply of the aggregate products and maintain quality records for at least three months before the Certification Assessment.
- 3.5 Upon successful Certification Assessments and subsequent decision made by the Certification Board or equivalent function of the Certification Body, the Applicant shall be granted with a Certificate of Conformity to this Scheme for the product produced and/or supplied by the Applicant. .

4. PROCEDURES FOR APPLICATION AND CERTIFICATION

4.1 Application

- 4.1.1 Applicants shall make application to the Certification Body following the procedures as required by the Certification Body. Applicants can either be Aggregate Producer or Aggregate Supplier with defined certification scope covering part or all of the processes of production, supply and delivery of aggregates. Application for an extension of certification scope of a Participant shall be treated as a new application and Certification process shall be conducted for the certification scope to be extended.

4.1.2 The following information shall be supplied by an Applicant to the Certification Body for certification:

- (a) Company name and address;
- (b) Certification scope to be applied for;
- (c) Source of the aggregates applying for certification;
- (d) Company representative for communication with the Certification Body;
and
- (e) Other information as required by the Certification Body.

4.2 **Certification Assessment**

4.2.1 Certification Assessment shall be carried out by an Assessment Team composing of at least a Lead Auditor and one or more Technical Auditors, who shall be competent to carry out the assessment for the production, supply and delivery of aggregates for concrete.

4.2.2 Certification Assessment shall comprise the following:

1. Overall assessment of the quality management system and relevant processes related to the applied certified scope covering part or all processes production, supply and delivery of aggregates to confirm the conformity of operation processes and the aggregate quality to the requirements of ISO9001, CS3 and the Regulations of this Scheme.
2. Evaluation of the results of autocontrol testing of samples. The assessment team will assess quality control results by carrying out an evaluation of autocontrol testing results. The Assessment Team will also examine relevant quality records to confirm the output of control systems and hence authenticate the frequencies or testing and conformity of the aggregate quality to the specified criteria in CS3 and the Regulations in this Scheme.
3. **Audit testing** The Assessment Team shall take spot samples of all aggregate products at the point of release of aggregate either from the production stream or storage at the production location or other intermediate storage before receipt of the Purchaser, wherever is safe for

sampling and is involved in the operation processes of the Applicant. Batches of all nominal sizes of in the Certification Scope shall be sampled in accordance with CS3 for audit testing. The samples taken shall be homogenized and divided into four sub-samples, which shall then be packed, sealed, clearly labeled. The size of each sample shall be adequate for conducting the intended test(s) in accordance with Table 6.1 in the Technical Regulation of this Scheme. The first sub-sample shall be taken for certification audit testing by an HOKLAS (The Hong Kong Laboratory Accreditation Scheme) or its MRA (Mutual Recognition Agreement) partners accredited laboratory. The second sub-sample shall either be tested by the Applicant in its in-house quality control laboratory or an external laboratory accredited by HOKLAS or its MRA partners and the results of which shall be submitted to the Assessment Team for evaluation. The third and fourth sub-samples shall be retained by the Applicant for a minimum period of three months for use if:

- (a) one of the first two sub-samples is lost, deteriorates or becomes contaminated;
- (b) further testing is needed when there is a failure or dispute for the test result(s); and
- (c) other purposes that require further testing.

Evaluation of the test results of the first and second sub-samples shall be conducted by the Certification Body. The Audit Testing is deemed passed if both the test results of the first and second sub-samples pass the relevant requirements in CS3. If both of the test results of the first and second sub-samples fail to meet the relevant requirements in CS3, the Audit Testing is deemed failed and a major nonconformity shall be raised and conclusion shall be made in accordance with Clause 4.2.4 (3) of this Regulation. If there is/are any failure(s) with the test result(s) of the first or second sub-sample, additional test(s) shall be conducted with both the third and fourth sub-samples for the failed test(s). In the event failure(s) occurs again for either of the third or fourth sub-sample, a major nonconformity shall be raised and conclusion shall be made in accordance with Clause 4.2.4 (3) of this Regulation. If both the test results of the third and fourth sub-samples pass, the Audit Testing for Certification Assessment is deemed passed. If any of the sub-sample is lost, deteriorated or contaminated such that the additional tests cannot be

arranged in the event of failure for either of the first or second sub-sample, the test samples shall be re-taken by the Assessment Team and all previous test results shall be void.

4.2.3. On completion of the Certification Assessment, the Assessment Team will report the findings, if any, and recommendation for Certification or a decline of such with or without condition in an audit report for the acknowledgement of the Applicant based on the audit result.

4.2.4 There are three possible recommendations:

1. **No Nonconformity** Certification will be recommended, subject to full compliance of the Initial type testing results to CS3 requirements, to the decision making Certification Board or equivalent function of the certification body.
2. **A number of minor nonconformities** which do not cumulatively indicate a major failure of the quality management system and product quality. Certification will be recommended after submission of a letter by the Applicant to the Assessment Team giving satisfactory details of corrections and corrective actions which, to the opinion of the Assessment Team, will remove the nonconformities from the system after successful implementation. The time limit for the submission of the letter is two weeks.

Note that implementation of corrections and corrective actions do not have to be completed before the receipt of the letter by the Certification Body. Corrections and corrective actions shall be implemented and completed within a maximum of four weeks or such lesser time as accepted by the Assessment Team. Implementation results of Minor nonconformities will be audited at the first subsequent Surveillance Assessment.

3. **A major nonconformity or a number of systematic minor nonconformities** which accumulate to indicate a major failure of the quality management system or product quality, which, to the opinion of the Assessment Team, cannot be rectified within a reasonable short period of time. The Applicant will then be required to propose

corrections and corrective actions for the agreement of the Assessment Team to rectify the nonconformities in the system. The time limit for the submission of the written proposal will be two weeks.

Corrections and corrective actions agreed by the Assessment Team shall be implemented within an acceptable time which will usually be between one to three months.

Certification will not be recommended until a follow up assessment is carried out by the Assessment Team confirming that the nonconformities have been cleared after successful implementation of the corrections and corrective actions.

If the nonconformities cannot be cleared within six months after the certification audit, the Applicant shall restart a new application.

4.3 **Certification**

4.3.2. Recommendation for Certification from the Assessment Team shall be passed to the Certification Review Board of the Certification Body for the decision of granting the Certification, or otherwise, to the Applicant.

4.3.2. The Certification Board shall issue a Certification of Conformity to the successful Applicant with the following content:

- a. Certificate number;
- b. Name and address of the Certification Body;
- c. Name and address of the Participant;
- d. Name and address, as detail as practicable, of the Source of Aggregates;
- e. Nominal size(s) and nature (natural or recycled) of the certified Aggregates certified to meet the requirements of CS3, for which that year of publication shall be clearly stated; and
- f. Certification Scope

4.3.3 Where an application for participation in this Scheme is rejected or Certification is refused, the Applicant shall have the right of representation to an appeal committee in accordance with the Certification Body regulations.

4.4 Use of License, certificates and marks of conformity

- 4.4.1 The ownership, use and display of licenses, certificates, marks of conformity, and any other mechanisms for indicating the certification of aggregate products shall be in accordance with the requirements in ISO/IEC 17030 and the regulations of the Accreditation Body and Certification Body.
- 4.4.2 Rules for the use of certificates, marks or other statements of conformity of the certified aggregate products by the Participants shall be set by the Certification Body but the name, logo or any sign of the Hong Kong Concrete Institute shall not appear in the certificates, marks or other statements of conformity of the certified aggregate products.
- 4.4.3 The way in which the Participants make reference to this Scheme in their publicity material shall be subject to the rules set out by the Certification Body and the Hong Kong Concrete Institute from time to time.

5. OBLIGATIONS OF PARTICIPANTS OF THIS SCHEME

- 5.1 The Participants shall keep the Certification Body informed in writing of changes in his circumstances which may affect Certification. Such changes include:
1. Changes in ownership or name of the company for Certification;
 2. Change of processes which may affect the certification scope;
 3. Change of the name or location of the Source of Aggregates for Certification;
 4. Termination of the production of aggregate at the certified Source, or supply of aggregate from a certified Source for more than three months and subsequent resumption of production or supply; and
 5. Permanent closure of the Source of Aggregates for Certifications.

6. SURVEILLANCE ASSESSMENT AND RECERTIFICATION ASSESSMENT

- 6.1 After Certification, the assessment team will conduct periodic Surveillance Assessments for the Certified Scope of the Participants.
- 6.2 **Frequency and Purpose of Surveillance Assessment**

- 6.2.1 The frequency of Surveillance Assessments for the first Three-year Certification shall be once in every nine months.
- 6.2.2 The frequency of routine Surveillance Assessments after the first Re-certification shall be once in every twelve months.
- 6.2.3 Surveillance Assessments shall comprise the followings:
- (1) Overall assessment of the quality management system;
 - (2) Production processes for Certified Aggregate Producers;
 - (3) Supply processes for Certified Aggregate Suppliers and for Certified Aggregate Producers, who are also responsible for the supply of aggregates to the Purchasers;
 - (4) Evaluation of the results of autocontrol testing to confirm conformity of the aggregates produced and/or supplied to the requirements in CS3. For Certified Aggregate Suppliers, records of the results for autocontrol testing shall be obtained from time to time from the aggregate producers;
 - (5) **Audit testing** The Assessment Team shall take spot samples of all aggregate products at the point of release of aggregate either from the production stream or storage at the production location or other intermediate storage before receipt of the Purchaser, wherever is safe for sampling and is involved in the operation processes of the Applicant. Batches of all nominal sizes of in the Certification Scope shall be sampled in accordance with CS3 for audit testing. The samples taken shall be homogenized and divided into four sub-samples, which shall then be packed, sealed, clearly labeled. The size of each sample shall be adequate for conducting the intended test(s) in accordance with Table 6.1 in the Technical Regulation of this Scheme. The first sub-sample shall be taken for Surveillance Assessment testing by an HOKLAS or its MRA partners accredited laboratory. The second sub-sample shall be retained by the Applicant for testing in its in-house quality control laboratory and the results of which shall be submitted to the Assessment Team for evaluation. The third and fourth sub-samples shall be retained by the Applicant for a minimum period of three months for use if:
 - (a) one of the first two sub-samples is lost, deteriorates or becomes contaminated;

- (b) further testing is needed when there is a failure or dispute for the test result(s);
- (c) other purposes that require further testing.

Evaluation of the test results of the first and second sub-samples shall be conducted by the Certification Body. The Audit Testing is deemed passed if both the test results of the first and second sub-samples pass the relevant requirements in CS3. If both of the test results of the first and second sub-samples fail to meet the relevant requirements in CS3, the Audit Testing is deemed failed and a major nonconformity shall be raised and conclusion shall be made in accordance with Clause 6.3.2 (3) of this Regulation. If there is any failure(s) with the test result(s) of the first or second sub-sample, additional test(s) shall be conducted with both the third and fourth sub-samples for the failed test(s). In the event failure(s) occurs again for either of the third or fourth sub-sample, a major nonconformity shall be raised and conclusion shall be made in accordance with Clause 6.3.2 (3) of this Regulation. If both the test results of the third and fourth sub-samples pass, the Audit Testing for Surveillance Assessment is deemed passed. If any of the sub-sample is lost, deteriorated or contaminated such that the additional tests cannot be arranged in the event of failure for either of the first or second sub-sample, the test samples shall be re-taken by the Assessment Team and all previous test results shall be void.

6.3 Conclusions from Surveillance Assessment

- 6.3.1 On completion of each Surveillance Assessment, the Assessment Team shall report findings, including but not limited to Area for Improvements, Minor and Major Non-conformities, to the Participants for acknowledgement and follow up action(s). The surveillance assessment team will indicate orally with a written recommendation for continuing the Certification or otherwise.
- 6.3.2 There are three possible recommendations:
 - (1) Certification is confirmed. The operation processes in the Certified Scope and the product quality comply with the Regulations in this Scheme and CS3 without finding of nonconformity. Some AFIs may be given for the improvement of the quality and operation

processes.

- (2) Certification is conditionally confirmed. There are one or more than one minor nonconformities, which, to the opinion of the Assessment Team, do not cumulatively indicate a major failure of the quality management system and product quality. Certification of the Participant is recommended to be confirmed upon receipt of the proposed corrections and corrective actions with proposed completion time by the Assessment Team from the Participant and based on which, the Assessment Team accepts that the nonconformities found will be rectified and cleared after successful implementation of the proposed correction(s) and corrective action(s). The time limit for the receipt of the proposed correction(s) and corrective action(s) will be two weeks. The proposed completion time of the correction(s) and corrective action(s) shall be a maximum of four weeks unless otherwise accepted by the Assessment Team based on the nature of the nonconformities and practicality concern.
- (3) Suspension of Certification or Reduction of Certification Scope is recommended. A **major nonconformity** or a **number of systematic minor nonconformities** exist which accumulate to indicate a major failure of the quality management system or product quality. The Participant will be required to submit a written proposal for correction(s) and corrective action(s) within two weeks to the Assessment Team for consideration. The Assessment Team shall assess the corrections and corrective actions for acceptance that the nonconformities found will be rectified and cleared after successful implementation of the proposed correction(s) and corrective action(s). A partial or full re-assessment, as directed by the Assessment Team, will be required after notification from the Applicant that the accepted correction(s) and corrective action(s) have been implemented. Recommendation for continuation of Certification shall only be made by the Assessment Team providing, to the opinion of the Assessment Team, the nonconformity has been cleared and reoccurrence of similar nonconformity has been prevented by effectively implementation of the correction(s) and corrective action(s). If, to the opinion of

the Assessment Team, the major nonconformity cannot be effectively cleared or reoccurrence of similar nonconformity cannot be prevented within three months after the major nonconformity is identified, Certification of the Participant shall be withdrawn or the Certification Scope shall be reduced, whichever the Assessment Team considers appropriate, and re-application for a new Certification or resumption of the original certification scope shall be required.

6.4 Recertification Assessment

6.4.1 The duration of a Certification is three years. Recertification Assessment shall be carried out at the third year after Certification within three months of the expiry date of the Certification. Recertification Assessment shall be carried out in the same way as an initial Certification Assessment.

7. SUSPENSION, CHANGE OF SCOPE AND WITHDRAWAL OF CERTIFICATION

- 7.1 Pursuant to the condition stated in Clause 6.3.2 (3) of this Regulation, the Certification Body will determine whether the Certification for the Participant is suspended or withdrawn.
- 7.2 Other than the condition stated in Clause 6.3.2 (3) of this Regulation, if the Participant, to the opinion of the Certification Body, fails to comply with the Participant's obligations under this Scheme, the Certification Body will suspend the Certification of the Participant. If the failing of complying with the Participant's obligation under this Scheme continues for more than three months, the Certification Body may decide to withdraw the Certification of the Participant and re-application for a new Certification shall be required. .
- 7.3 Upon a suspension of the Certification of a Participant, the Certification Body shall serve a written notice to the Participant for such suspension with detail reason of the suspension.
- 7.4 Upon the decision to withdraw the Certification, the Participant shall serve a written notice to the Certification Body at least one calendar month before the production and/or supply of the certified aggregates to the Purchasers are

ceased.

- 7.4 If the Certification for a Participant is suspended or withdrawn, the Participant shall immediately cease to use the Certification Mark in relation to that aggregate producer/supplier and shall within two weeks' time inform the Purchaser(s) for such suspension or withdrawal of his Certification. All kinds of advertisement regarding the Certification shall be ceased and all certification documents shall be returned to the Certification Body by the Participants. Other actions required if the certification is suspended, withdrawn or terminated shall be subject to the rules of the Certification Body and shall be stated in the contract with the Participants.

8. INFORMATION ON CERTIFIED AGGREGATE PRODUCERS AND SUPPLIERS

- 8.1 Upon the request of any Purchaser, end users or any stakeholder of the certified aggregate, the Certification Body is obliged to provide verbal or written confirmation, whichever is requested, of the status of any Certified Aggregate Producer and Supplier under his registry.

9. APPEALS AGAINST DECISIONS

- 9.1 The Applicant or Participant shall have the right to appeal against any decisions of the Assessment Team or the Certification Body. An appeal committee shall be set up under the Certification Body. Details of the appeal procedure shall be provided in the Certification Body regulations and make known to all Applicant and Participant.

10. CHANGES TO THE REGULATIONS

- 10.1 In the event of a change in the Regulations of this Scheme or the regulation of the Certification Body, a grace period of not less than one year shall be given to all Participants for clarification of the new requirements and preparation works for conforming to the changed requirements.
- 10.2 In the event of a change in CS3, the grace period given to the Participants shall be subject to the announcement of the responsible committee(s) of the new CS3. The Certification Bodies and Participants shall make all necessary amendments

in their auditing and operation systems and product quality to comply with the new CS3 accordingly within the grace period given.

11. COMPLAINTS

11.1 Certified Aggregate Producers and Certified Aggregate Suppliers shall keep records of all written complaints received from any concerned parties and corresponding responds. These records shall be made available to the Assessment Team at the time of any Assessment. The Assessment Team shall make detail investigation on such complaints to see if any Area for Improvement or non-conformity has to be raised.

12. CONFIDENTIALITY

12.1 All Applicants and Participants shall disclose to the Assessment Team for the purposes of Assessments all information or records obtained from or pertaining to Purchasers and connected with the Scheme.

12.2 The Assessment Team and any other staff in the Certification Body shall not disclose information or records obtained from the Applicants and Participants unless otherwise permitted by the Applicant or Participant concerned.

13. EXPERIENCE AND QUALIFICATION OF LEAD AUDITORS AND TECHNICAL AUDITORS

13.1 Lead Auditors who are eligible for auditing PCCS-AP quality management system shall have the following registration: - Registered IPC or Hong Kong Institution of Certified Auditors (HKICA) Lead Auditor in Quality Management System and Product Certification Auditor, or equivalent.

13.2 Technical Auditors who are eligible for auditing PCCS-AP technical management system shall have the following training, experience and qualifications:

- (a) A relevant Higher Diploma in architectural studies, building, materials science, structural or civil engineering, or other related fields plus a minimum of two years' technical experience in the industry of production or supply of aggregates for concrete, ready mixed concrete, precast concrete or any other related field, or;
- (b) Other qualifications and experience, which are acceptable to the

Accreditation Body, HKAS or its MRA Partners.

14. PUBLICATION OF THE DIRECTORY OF CERTIFIED PRODUCTS

- 14.1 The Hong Kong Concrete Institute shall not be responsible to publish a directory of certified products to this Scheme.
- 14.2 The Certification Body shall, subject to the conditions of the agreement with its clients, be responsible to publish and maintain a list of certified products under its certification to this Scheme with the updated certification status and all the contents in the Certificate of Conformity for each certified product.

15. CONTRACTS AMONG THE HONG KONG CONCRETE INSTITUTE, THE CERTIFICATION BODY, THE APPLICANTS AND THE PARTICIPANTS

- 15.1 The Certification Body, the Applicants and the Participants shall be allowed to use this Scheme for Certification without the need of enter into any agreement with the Hong Kong Concrete Institute.
- 15.2 Hong Kong Concrete Institute shall not be liable for the performance, behaviour or any misconduct of the Certification Body, the Applicants and the Participants.
- 15.3 The Drafting Committee of this Scheme is obliged to answer enquiries regarding this Scheme only from the Accreditation Body, the Certification Body, the Applicants and the Participants of this Scheme.
- 15.4 The need for and the content of the contracts between the Certification Body, the Applicants and the Participants shall be determined by the Certification Body.

----- END -----

TECHNICAL REGULATIONS

Contents

	Page
1. Introduction	2
2. Quality System	2
3. Responsibilities of Certified Aggregate Producers and Certified Aggregate Suppliers	2
4. Definitions	3
5. Requirements of Aggregate	3
6. Initial Type Testing, Quality Control Testing and Audit Testing	3
7. Review of Quality Management System	5
8. Production Control and Testing	5

1. INTRODUCTION

- 1.1 These Technical Regulations set out the technical requirements of the Scheme.
- 1.2 These Technical Regulations shall be read in conjunction with the Administrative Regulations.
- 1.3 All properties and performance requirements of aggregates shall be referred to those of Construction Standard 3 (CS3).

2. QUALITY SYSTEM

- 2.1 An effective quality system shall be established, documented and maintained in accordance with the prevailing ISO 9001 standard to ensure and demonstrate that aggregates produced and/or supplied under this Scheme conform to the requirements of CS3 and these Regulations.

3. QUALITY RESPONSIBILITIES OF CERTIFIED AGGREGATE PRODUCERS AND CERTIFIED AGGREGATE SUPPLIERS

- 3.1 The Certified Aggregate Producers and Certified Aggregate Suppliers shall be committed to maintain their quality management system fully comply with the requirements of ISO9001 and to produce and/or supply aggregate products fully comply with the requirements of CS3.
- 3.2 The Certified Aggregate Producers and Certified Aggregate Suppliers shall ensure the resources required for the operation of this Scheme, including impartiality and competence of the personnel (internal and external) for the functions they perform and are aware of the effects of these functions on quality.
- 3.3 All testing and measurement apparatus relating to the quality management system shall be calibrated and properly maintained internally or externally. External calibration authorities shall be accredited, wherever available, by HOKLAS or its MRA partners.
- 3.4 All subcontractors shall be assessed for their competence and shall be ensured to strictly follow the requirements of the quality management system of the Certified Aggregate Producer or Certified Aggregate Supplier, and the

requirements of this Scheme.

4. DEFINITIONS

4.1 All definitions for technical terms in CS3 shall be referred.

5. REQUIREMENTS OF AGGREGATE

Aggregates shall be tested in accordance with Section 6.2.2 in CS3 with the results conforming to the requirements set out in Section 3, 4 and 5 of CS3.

6. INITIAL TYPE TESTING, QUALITY CONTROL TESTING & AUDIT TESTING

6.1 General Requirements

The aggregate producer and aggregate supplier shall take responsibility for the quality of aggregates. They shall establish and maintain documented quality system to monitor the production, supply and delivery of aggregates to ensure the required characteristics of the aggregates in CS3 are achieved and maintained, and that the aggregate products are traceable throughout the process. The aggregate producer and aggregate supplier shall undertake routine control and laboratory testing to ensure that the aggregate product conforms to CS3. Audit testing shall be carried out in accordance with the test scope stipulated in Table 6.1 of this Regulation during Certification, Re-certification and Surveillance Assessment for Applicants and Participants of this Scheme.

6.2 Test Items and Test Frequencies

Aggregates shall be sampled and tested in accordance with the relevant parts of CS3 for the properties and frequencies as listed in Table 6.1.

Table 6.1: Test items and Frequencies

Properties	Quality Control Testing		Audit Testing	
	Initial Type Testing	Production Control Testing	Certification & Re-certification	Surveillance Assessment
Grading	Y	Once Daily	SC	SS
Flakiness index	Y	Once monthly	SC	SS
Elongation index	Y	Once monthly	SC	SS
Shell Content	Y	N	NR	NR
Fines content	Y	Once Daily	SC	SS
Aggregate impact value	Y	N	NR	NR
Ten per cent fines value	Y	Once monthly	SC	SS
Particle density	Y	N	NR	NR
Water absorption	Y	Once half-yearly	NR	NR
Magnesium sulphate soundness value	Y	N	NR	NR
Drying shrinkage	Y	N	NR	NR
Alkali-silica reactivity	Y	Once quarterly	SC	SS
Water-soluble chloride ion content	Y	Once half-yearly	SC	SS
Acid-soluble chloride ion content	Y	Once half-yearly	SC	SS
Acid-soluble sulphate content	Y	Once half-yearly	SC	SS
Total sulphur content	Y	Once half-yearly	SC	SS
Presence of organic or foreign substances	Y (if test result is positive, also conduct test for the effect of organic/ foreign substances)	N	NR	NR

Note:

1. "Y" means the test is mandatory.
2. "N" means the test is not required unless otherwise required by the Purchaser
3. "NR" means the test is not required.
4. "SC" means the Assessment Team shall select at least five of these tests for Certification or Re-certification purpose.
5. "SS" means the Assessment Team shall select at least two of these tests for Surveillance Assessment purpose.
6. Notwithstanding the frequencies given, tests shall be limited to the type, natural or recycled, and size of aggregates produced or supplied by the Aggregate Producer or Aggregate Supplier.
7. All tests shall be carried out in accordance with corresponding test methods stipulated in CS3.

6.3 Testing Laboratories

All tests for Initial Type Testing shall be conducted by laboratories accredited by HOKLAS or its MRA partners, whichever is available. Tests for Production Control Testing can either be conducted by in-house laboratory of the Applicant or Participant. If the Production Control Tests are to be conducted externally, the external laboratories shall be accredited by HOKLAS or its MRA partners. Tests for Certification, Re-certification and Surveillance Assessment shall be conducted in accordance with Clause 6.2.1 (5) of the Administration Regulations of this Scheme.

6.3.1 Source of aggregate

The "Source" of aggregates shall be that as defined in CS3. The "Source" of the certified aggregates shall be stated in the Certificate of Conformity to this Scheme.

7. REVIEW OF QUALITY MANAGEMENT SYSTEM

7.1 The quality management system established in accordance with these Regulations shall be systematically reviewed at least once every six months to ensure the continuing effectiveness of the system.

8. PRODUCTION CONTROL AND TESTING

8.1 General Requirements for Production & Testing Equipment

All relevant requirements in the ISO 9001 and CS3 shall be followed and complied with. Production equipment and facilities shall be regularly checked, maintained and replaced to ensure their proper functioning. All measuring and testing equipment shall be calibrated with methods and frequencies traceable to relevant standards.

8.2 Quality Assurance and Traceability

Aggregate producers and aggregates suppliers shall establish its quality management system and its documentations in accordance with the requirements in Section 6.2.1 of CS3 for quality assurance and traceability. The quality management system shall also comply with the requirements in ISO9001.

----- END -----