

HONG KONG CONCRETE INSTITUTE
PRODUCT CONFORMITY CERTIFICATION SCHEME -
CEMENT PRODUCTS
(PCCS-CP)
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Hong Kong Concrete Institute

This Scheme is developed and maintained by the Hong Kong Concrete Institute (HKCI) to provide a framework for the certification of the production and supply of cement products. Producers and suppliers of cement products 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-CP: Issue 2: 2020

Chairman:

Ir Prof Adam Choy Hong Kong Concrete Institute

Members:

Ir Prof. Y L Wong Hong Kong Concrete Institute

Ir Stanley Tse Qualitech Testing & Consultancy Limited

Members of the Review Committee for the PCCS-CP: Issue 2: 2020

Ir Dr Mckey Ho Hong Kong Housing Authority

Mr. Vico Lau Architectural Services Department

Mr. W M Chan Hong Kong Housing Society

Ir K H Mok HKIE Buildings Division

Ir Dr Tommy Lo The Hong Kong Institution of Certified Auditors

Ir Daniel Brown AECOM Asia Company Ltd.

Ir Nuno Ferreira Ove Arup & Partners Hong Kong Ltd.

Ir Wilman Chan Hong Kong Quality Assurance Agency

Mr. Patrick Lee Hong Kong Testing, Inspection & Certification Ltd. (HKTIC)

Sr K Y Kwok Registered Minor Works Contractor Signatory Ass. Ltd.

HKCI Executive Board Hong Kong Concrete Institute

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

Product Conformity Certification Scheme

**for
Cement Products
(PCCS-PC)
Part One
ADMINISTRATIVE REGULATIONS**

1. INTRODUCTION

- 1.1 This Scheme is established, published and owned by the Hong Kong Concrete Institute (HKCI). Validity of a Certificate of Conformity to this Scheme shall be endorsed by the HKCI verified by bearing the logo of HKCI on the Certificate. Information for all valid Certificates of Conformity including the names of certified company, certified plant and certified product(s) will be posted on HKCI's website for the reference of Purchasers. HKCI shall authorize the Certification Body to put the HKCI's logo on the Certificates of Conformity indicating the endorsement subject to an Annual Endorsement Fee payable to the HKCI. Amount of the Annual Endorsement Fee shall be announced by the HKCI from time to time.
- 1.2 This Scheme shall be read and used in conjunction with ISO17065: 2012 and ISO17067: 2013. In the event there is discrepancy between this Scheme and these two ISO Standards, the requirements in the ISO Standards shall prevail.
- 1.3 The purpose of the Scheme is to ensure that all cement products produced or traded by Certified Cement Suppliers meet the requirements in this Scheme and the Purchasers' specified requirements. This is a product certification scheme that requires the Certified Cement Suppliers and the Certified Cement Plant to operate quality system(s) complying with ISO 9001. The requirements against which the cement products under this Scheme are evaluated with reference to BS EN 197-1: 2011 or its updated version to which the technical requirements are referred for assessment and certification.
- 1.4 These Administrative Regulations set out the rules for the operation of the Scheme and the rights and obligations of Certified Cement Suppliers in relation to the Scheme.

- 1.5 This Scheme is a Type 5 product certification scheme in accordance with ISO/IEC 17067:2013 including the requirements for certification and periodic surveillance.
- 1.6 Any Certification Body who uses this Scheme for certification of cement suppliers and the operations of manufacturing plants shall be accredited by Hong Kong Accreditation Service (HKAS) or its Mutual Recognition Agreement (MRA) partners in accordance with this Scheme and ISO/IEC 17065:2012.
- 1.7 This Scheme can be accessed on the website of the Hong Kong Concrete Institute (HKCI).
- 1.8 This Scheme is regularly reviewed by the Drafting Committee with the support of the Review Committee including confirmation that it is fulfilling its objectives. Feedback and comments from stakeholders and interested parties can reach the Drafting Committee from time to time through the Secretary of the HKCI followed by regular review.
- 1.9 The Hong Kong Concrete Institute (HKCI) reserves the sole and final discretion of interpretation of the regulations in this Scheme.

2. GENERAL DEFINITIONS

- 2.1 For the purpose of this document, the terms and definitions given in ISO/IEC 17000:2004, ISO/IEC 17065:2012, ISO/IEC 17067:2013 and the following definitions are applied to the Regulations:

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

Applicant: A legal registered company who has formally applied to become a Certified Cement Supplier. The Applicant can be a cement manufacturer or a cement intermediary who has a legal contract with a cement manufacturer responsible for all relevant quality and technical management of the cement product. For the latter,

apart from the assessment of the cement plant, the management office and/or the depot of the cement intermediary shall also be assessed. The registered legal name of the cement intermediary shall appear in the Certificate of conformity together with the cement manufacturer and the Certified Cement Plant.

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 cement products for assessing compliance with the Regulations in this Scheme. It is classified as Certification, Surveillance and Recertification assessments.

Audit Testing: Sampling and testing of cement products ordered by an assessment team during Certification, Surveillance and Recertification Assessments in accordance with this Scheme. All tests shall be conducted by a HOKLAS or its MRA partners accredited laboratory independent from the Applicant and the result shall be produced in a HOKLAS endorsed test report or equivalent.

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

Autocontrol Testing: Continual testing carried out by a cement manufacturer or a cement intermediary which consists of testing of samples taken at the cement manufacturing plant or by the intermediary at the points of release from the depot.

Certificate of Conformity: The certificate issued by the Certification Body to confirm certification of an Applicant or a Certified

Cement Supplier in respect of a designated cement manufacturing plant.

Certification: Acceptance by the Certification Body, as the result of a successful assessment confirming that the Applicant's management system, operation processes and quality of the cement product comply with the 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 Applicant and to grant certification or otherwise to the Applicant.

Certification Mark: The logos of the HKCI and the Certification Body, that the Participants are licensed to use in accordance with the Regulations and the terms and conditions given by the Hong Kong Concrete Institute and the Certification Body.

Certified Cement Manufacturer: An Applicant operating a cement manufacturing plant who has achieved Certification to supply cement directly to Purchasers.

Certified Cement Supplier: An Applicant who has achieved Certification to act as an intermediary for supplying cement from a Certified Manufacturing Plant to Purchasers.

Certified Manufacturing Plant: A cement manufacturing plant producing the certified cement product.

Depot: Cement product handling facility (not located at the plant) used for intermediate storage after transferring from the manufacturing plant before dispatching to the Purchaser.

- Drafting Committee:** The committee under HKCI responsible for the development, maintenance and review of this Scheme.
- Intermediary:** A legal registered company who takes cement product(s) from a cement manufacturing plant and undertakes full responsibility for all aspects of the quality of the cement to supply the cement product(s) onwards to a Purchaser.
- Major Nonconformity:** A major nonconformity is a nonfulfillment of a requirement that affects the capability of the management to achieve the intended results. Nonconformities could be classified as major in the following circumstances: (a) if there is a significant doubt that effective process control is in place, or that products or services will meet specified requirements; or (b) a number of minor nonconformities associated with the same requirement or issue could demonstrate a system failure and thus constitute a major nonconformity.
- Minor Nonconformity:** A minor nonconformity is a nonfulfillment that does not affect the capability of the management system to achieve the intended results.
- Participant:** An Applicant who has been certified to this Scheme, either as a Certified Cement Manufacturer or Certified Cement Supplier, through successful Certification Assessment and the Certification is continuously maintained.
- Plant:** A plant for the production of certified cement product(s).
- Plant Register:** The register of currently certified Plants and certified cement products is to be maintained by the responsible Certification Body and the Hong Kong Concrete Institute.

Purchaser:	An individual, firm or company who entered into a contract with a Certified Cement Manufacturer or a Certified Cement Supplier to purchase certified cement products.
Regulations:	The combined Administrative Regulations and Technical Regulations.
Review Committee:	A committee formed by interested parties of this Scheme to review and give comments to the Drafting Committee for the development and maintenance of this Scheme.
Scheme:	This product conformity certification scheme for the certification of the production of cement products.
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 or trading of cement products shall be eligible as an Applicant to apply to become a Certified Cement Manufacturer or a Certified Cement Supplier respectively.
- 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 and the cement manufacturing plant shall establish and maintain a documented quality system in accordance with the requirements of ISO 9001 and the Regulations of this Scheme.
- 3.4 The Applicant and the cement manufacturing plant shall fulfill relevant statutory and regulatory requirements for the production and supply of the cement 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 supplying the cement products manufactured at the Certified Manufacturing Plant.

4. PROCEDURES FOR APPLICATION AND CERTIFICATION

4.1 Application

4.1.1 Certification Body shall determine appropriate application procedures for a new Applicant or an existing Participants making application to the Certification Body for initial certification or a change or an extension of the existing Certification Scope.

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

- (a) Company name and address;
- (b) Name and address of the proposed manufacturing plant
- (c) For the case of a cement supplier, an agreement with the owner of the manufacturing plant proving that the cement supplier is allowed to supply the cement product(s) for application to Purchasers. Validity date of the certificate to be granted upon successful application shall be extended at least until the termination date of the agreement.
- (d) Certification scope;
- (e) Company representative for communication with the Certification Body;
- (f) 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 a Technical Auditor, who shall be competent to carry out the assessment for the production of cement products.

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 to confirm the conformity of operation processes and the quality of the cement products to the requirements of ISO 9001 and the Regulations of this Scheme.
2. At the manufacturing plant, the assessment team shall assess the operations of relevant processes and plant and equipment including but not limited to the control of design process (where appropriate), incoming materials, production process, in-process and product quality control testing, storage as well as calibration of such plant and equipment to confirm compliance to relevant requirements in ISO9001 and the Regulations of this Scheme.
3. The assessment team will evaluate conformity of the quality system of the Applicant and Participants by an assessment of all relevant processes and the associated quality and production records.
4. The assessment team shall assess the quality control system by carrying out an evaluation of quality control (QC) testing results of manufacturer's autocontrol tests, intermediary's confirmation autocontrol tests (when cement product(s) is stored in an intermediate depot before delivery to Purchasers) and audit tests. The assessment team shall also examine relevant quality records to confirm the output of control systems and hence authenticate the conformity of the cement product(s) to the specified criteria in the Regulations.

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:

- a. **No Nonconformity** Certification will be recommended, subject to full

compliance of the Audit Testing results to the requirements in this Scheme, to the decision of the certification body.

- b. **A number of minor nonconformities** which do not cumulatively indicate a major failure of the quality management system and product quality and full compliance of the Audit Testing results to the requirements in this Scheme. 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.

It is noted that implementation of corrective and preventive actions do not have to be completed before the receipt of the letter by the Certification Body. Corrective and preventive 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.

- c. **Failure of the Audit Testing result or 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 reasonably short period of time. The Applicant will then be required to propose corrections and corrective actions for the agreement by the Assessment Team to rectify the nonconformities in the system. Time limit for the submission of the corrective and preventive actions is normally two weeks or longer subject to the decision of the Audit Team based on the nature of nonconformities. In the case of failure of Audit Testing result, cause of failure shall be identified and submitted with corresponding corrective and preventive action for the approval of the Assessment Team.

Corrective and preventive actions agreed by the Assessment Team shall be implemented within a timeframe acceptable to the Assessment Team.

Certification will not be recommended until a Follow Up Assessment is carried out by the Assessment Team confirming that the nonconformities have been rectified after successful implementation of the corrective and preventive actions together with the Audit Testing results fully complies with the requirements in this Scheme.

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

4.3 Certification

4.3.1 Recommendation for Certification from the Assessment Team shall be passed to 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, the manufacturer's company (if the Participant is the intermediary only) and the Manufacturing Plant
- d. Name, model number and Strength Class of the certified cement products in accordance with BS EN 197-1: 2011 or its updated version to which the technical requirements are referred for assessment and certification.
- e. Statement that the cement products conforms to the requirements of relevant Strength Class of cement product to this Scheme, for which the year of publication shall be clearly stated
- 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 cement product(s) shall be in accordance with the requirements in ISO/IEC 17030 and the regulations of the Accreditation Body and Certification Body.

4.4.2 License agreement issued by the HKCI for controlling the use of certificates, marks or other statements of conformity of the certified cement products shall be signed by the Participants through the Certification Body.

4.4.3 The way in which the Participants make reference to this Scheme in their publicity material shall be abided by the rules set out by the Certification Body and the HKCI 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:

- a. Changes in ownership or name of the company for Certification.
- b. Change of processes which may affect the certification scope.
- c. Change of the Manufacturing Plant and/or Quality System Management Office.
- d. Suspension of production for a period more than 3 months of the manufacturing Plant.

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 routine Surveillance Assessments for the first Three-year Certification shall be once in every six months.

The frequency of routine Surveillance Assessments for all subsequent Three-year Certification shall be once in every nine months.

6.2.2 Surveillance Assessments shall comprise the followings:

- a. Conformity of quality management system and the associated documentation to ISO9001 and this Scheme;
- b. Quality records of various activities in the quality management system;
- c. Evaluation of the results of manufacturer's autocontrol testing and intermediary's autocontrol testing (when cement product(s) is stored in an intermediate depot before delivery to Purchasers) for the conformity to the Technical Regulations in this Scheme;
- d. Sampling of Audit Testing sample and arrangement of the required audit testing in accordance with this Scheme.

6.2.3 In case of a report of major nonconformity, the follow up Surveillance Assessments in accordance with Section 4.2.4 (3) of this Regulation) shall be arranged, which may require, subject to the decision of the Assessment Team, either:

- a. A partial assessment to confirm that nonconformities have been corrected when there is only one single nonconformity to be cleared, or
- b. A full assessment to confirm compliance with the Regulations when there are at least two nonconformities to be cleared.

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:

- a. Certification is confirmed. The operation processes in the Certified Scope and the product quality comply with the Regulations in this Scheme without finding of any nonconformity. Some Areas For Improvement (AFIs) may be given for the improvement of the quality and operation processes.
- b. 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.
- c. Suspension of Certification or Reduction of Certification Scope is recommended when 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 in accordance with Section 6.2.3. 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 effective implementation of the correction(s) and corrective action(s) within three months after the Surveillance Assessment. Otherwise, Certification of the Participant shall be withdrawn or the Certification Scope shall be revised, 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 c. 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 c. 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 of the certified cement products to the Purchasers are ceased.
- 7.5 If the Certification for a Participant is suspended or withdrawn, the Participant shall immediately cease to use the Certification Mark and shall within two weeks' time inform the Purchaser(s) for such suspension or withdrawal of the 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 CEMENT MANUFACTURERS AND CERTIFIED CEMENT SUPPLIERS

- 8.1 Upon the request of any Purchasers, end users or any stakeholder of the certified cement products, the Certification Body is obliged to provide verbal or written confirmation, whichever is requested, of the status of any Certified Cement Manufacturer and Certified Cement Supplier together with the relevant Certified Manufacturing Plant under his registry.
- 8.2 Reasons for any suspension or withdrawal of Certification shall be stated in the written notice as mentioned in Clause 7.3.

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 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 twelve months, or any other length of the grace period to be announced by the HKCI, 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 this Scheme, the grace period given to the Participants shall be subject to the announcement of the relevant committee(s) of the HKCI. The Certification Bodies and Participants shall make all necessary amendments in their auditing and operation systems and product quality to comply with the new requirements in the Scheme accordingly within the grace period given.

11. COMPLAINTS

- 11.1 Certified Cement Suppliers shall keep records of all written complaints received from any concerned parties and corresponding responses. These records shall be made available to the Assessment Team at the time of any Assessment. The Assessment Team shall investigate in detail on such complaints to see if any Area for Improvement or non-conformity has to be raised.
- 11.2 The Certification Body shall keep a record of all written complaints, in relation to a Certified Cement Supplier received from any concerned parties. Such complaints shall be investigated at the discretion of Certification Body and reported to the Certification Board or equivalent.
- 11.3 The Certification Body shall respond to complainants with a report which is confined to the statements of the Certification status of the Certified Cement Products Manufacturer and its Plants.

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-CP quality management system shall have the following registration: - Registered IPC (International Personnel Certification Association) 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-CP 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 cement, concrete, mortars 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 DIRECTORY OF CERTIFIED PRODUCTS

14.1 The HKCI shall not be responsible to publish a directory of certified products to this Scheme.

14.2 The Certification Body shall 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 HONG KONG CONCRETE INSTITUTE, CERTIFICATION BODY, APPLICANTS AND PARTICIPANTS

- 15.1 The Certification Body shall enter into an agreement with the Hong Kong Concrete Institute for the mutual responsibilities and chargeable annual fee for the endorsement of the HKCI for the validity of the Certificates of Conformity issued by the Certification Body.
- 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 Hong Kong Concrete Institute is obliged to answer enquiries regarding this Scheme from interested parties 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.

TECHNICAL REGULATIONS

Contents

	Page
1. Introduction	2
2. Quality System	2
3. Responsibilities of Certified Cement Manufacturers	2
4. Definitions	3
5. Mechanical, Physical and Chemical Requirements of Cement Products	3
6. Conformity Criteria	4
7. Requirements for Dispatching Centre	6
8. Review of Quality Management System	7
9. Compliance to ISO 9001	7
10. Classification and Designation	8
11. Marking and Labelling	8

**Product Conformity Certification Scheme
for
Cement Products
(PCCS-CP)
Part Two
TECHNICAL REGULATIONS**

1. INTRODUCTION

1.1 These Technical Regulations set out the technical requirements of the Scheme.

1.2 The Technical Regulations shall be read in conjunction with the Administrative Regulations.

2. QUALITY SYSTEM

2.1 An effective quality system shall be established, documented and maintained in accordance with the prevailing ISO 9001 standard and relevant requirements in the Regulations of this Scheme by the cement product supplier.

**3. RESPONSIBILITIES OF CERTIFIED CEMENT MANUFACTURER OR
CERTIFIED CEMENT SUPPLIER**

3.1 The Certified Cement Manufacturer or the Certified Cement Supplier shall take responsibility for the quality of its cement product(s), and shall nominate a Quality Management Representative who shall have defined authority and commitment to maintain their quality management system fully complying with the requirements of ISO 9001 and to ensure the cement product(s) fully complying with the Technical Regulations of this Scheme.

3.2 The Certified Cement Manufacturer or Certified Cement Supplier 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. A proper training procedure shall be set up and maintained for the training of technical staff of the Certified Cement Manufacturer or the Certified Cement Supplier and the Certified Manufacturing Plant.

3.3 All evaluation resources shall be calibrated and properly maintained internally or externally. External calibration authorities shall be accredited, by Hong Kong Accreditation Services (HKAS) or its Mutual Recognition Agreement (MRA) partners, where available.

3.4 All staff of the Certified Cement Manufacturer, the Certified Cement Supplier and the Certified Manufacturing Plant, whose responsibilities and authorities relate directly to the operations of management system for this Scheme, shall be assessed for their competence.

4. DEFINITIONS

Definitions for terms used in this Scheme shall be referred to the Administrative Regulations of this Scheme and those given in ISO17065: 2012 and ISO17067: 2013, wherever appropriate.

5. MECHANICAL, PHYSICAL AND CHEMICAL REQUIREMENTS OF CEMENT PRODUCTS

The mechanical, physical and chemical requirements for cement products as listed in the BS EN 197-1:2011 or a newer version for Portland Cement CEM I to which the cement products are certified or are applying for certification as requested by the cement manufacturer subject to clients' requirements, shall form the product conformity requirements of this Scheme.

6. CONFORMITY CRITERIA

6.1 General Requirements

Cement products conforming to BS EN 197-1:2011 or a newer version for CEM I Portland Cement shall be continually evaluated on the basis of testing of spot samples. The Certified Cement Manufacturer or the Certified Cement Supplier shall implement a documented system for the evaluation of product conformity that includes the following testing:

- (a) Manufacturer's Autocontrol Testing in accordance with Table 6 of BS EN 197-1:2011
- (b) Intermediary's Confirmation Autocontrol Testing (when cement product(s) is stored in an intermediate depot before delivery to Purchasers)
- (c) Audit Testing.

The properties, the test method, intermediary's confirmation autocontrol testing, and audit testing are specified in Table 1. The requirements of statistical conformity criteria and single result conformity criteria in BS EN 197-1:2011 or a newer version shall be followed and complied with.

6.1.1 Certified Manufacturing Plant's autocontrol testing and audit testing of samples

The Certified Manufacturing Plant shall conduct routine manufacturer's autocontrol testing in accordance with Table 6 of BS EN 197-1:2011 to ensure continuous compliance of the characteristic requirements of relevant strength class of Portland Cement CEM I in BS EN 197-1:2011 or in a newer version with respect to the cement product(s) concerned and any other stated customer requirements. Conformity for mechanical, physical and chemical properties in autocontrol testing shall be evaluated in accordance with Section 9.2 of BS EN 197-1:2011. Alternative test methods could be used provided that they have been validated in accordance with the appropriate provisions in the cited standards of the reference test methods such as by establishing a correlation between results of the alternative and reference test methods. In the event of a dispute, only the reference methods are used.

Audit testing shall be arranged in all types of audit (including Certification Audit, Surveillance Visit and Re-certification Audit) with spot samples taken under the responsibility of the certification body at the point(s) of release of cement from the manufacturing plant and/or depots supplied with the cement product(s) by the

manufacturing plant. Assessment Team of the certification body shall be granted access to the manufacturing plant/depots in order to allow the samples to be taken.

(a) Number of samples

For audit testing, three standard package bags of the spot certified cement product samples are taken. The bag samples shall be clearly labeled, authenticated and sealed. The first bag of the sample shall be taken for conducting tests as required in this Scheme by the laboratory specified in Section 6.2 of this Scheme. The second and third samples shall be kept by the certified cement manufacturer/supplier until the full test results of the first bag sample are obtained. If all test results pass the required mechanical, physical and chemical properties of the certified cement in this Scheme, the audit testing is deemed passed. In the event test result of the first sample fails to meet the required properties in this Scheme, the second and third samples shall be immediately sent to the laboratory for conducting the same tests. The audit testing is deemed passed only if test results of both the second and third bag sample pass the required mechanical, physical and chemical properties in this Scheme.

(b) Required Properties and test methods

The mechanical, physical and chemical properties specified for testing in Table 6 of BS EN 197-1: 2011 for CEM 1 cement shall be determined according to the indicated test methods.

(c) Evaluation of test results

The results obtained from the audit testing shall be evaluated by the Certification Body. The limit values for single results described in Table 10 of BS EN 197-1: 2011 shall be used for the evaluation of the test results for compliance to this Regulation.

6.2 Testing Laboratories

Audit Testing shall be conducted by laboratories accredited by HOKLAS or its MRA partners for the tests concerned. Tests for Manufacturer's Autocontrol Testing can be conducted by the in-house laboratory of the Certified Manufacturing Plant that complies with the requirements of ISO/IEC 17025 and relevant HOKLAS requirements, if applicable. All equipment and measuring devices shall be calibrated by HOKLAS or its MRA partners accredited laboratory, where available. If the Production Autocontrol Testing is to be conducted externally, the external laboratories shall be accredited by HOKLAS or its MRA partners.

7. REQUIREMENT FOR DISPATCHING CENTRE

7.1 General Requirements

Intermediaries operating dispatching centre(s) before delivery to Purchasers have a responsibility to maintain quality, the identity and the conformity of certified cement products. The intermediary shall demonstrate that the conformity of the cement product(s) is maintained during transport, reception, storage, packaging and dispatch and that the quality and the identity of the cement product(s) are assured from the manufacturing plant to the user after dispatch.

7.2 Tasks for Intermediary to Confirm Testing of Samples at Dispatch Centre

The intermediary shall demonstrate that he operates measures to maintain the quality of the certified cement product(s) and shall have a quality procedure which describes the quality aims and the organizational structure and which adequately covers purchasing, transport, reception, handling, storage, testing and dispatch of the cement product. In particular these measures shall include appropriate acceptance and identification testing in order to demonstrate that the certified cement product(s) delivered to the dispatching centre has not suffered from contamination or ageing and corresponds to the cement specified in the purchasing or delivery contracts. In addition, appropriate measures shall be taken to ensure that different cement products are kept separately and are stored in separate compartments and that contamination of cement is avoided.

7.3 Confirmation Autocontrol Testing of Samples Taken at Dispatching Centre

For certified cement supplied by an intermediary, who is certified under this Scheme as certified supplier, the intermediary shall carry out confirmation autocontrol testing of samples to verify that the cement product(s) maintains its properties after dispatching from the manufacturing plant and before delivered to purchaser. The frequency of sampling and testing, the test properties and the test methods shall be at least as specified in Table 1. Results of the autocontrol testing carried out at the dispatching centre and at the factory supplying the certified cement should be compared. The confirmation autocontrol testing may be carried out in the laboratory of the intermediary or in an external laboratory as specified in Section 6.2 of this Scheme. Representatives of the Certification Body shall be granted access to the laboratory in order to verify that the equipment

used to test the cement meets **the** ISO/IEC 17025 and relevant HOKLAS requirements. The individual results of confirmation autocontrol testing carried out by an intermediary in respect of each certified cement product shall remain within the range of the maximum and minimum values of the relevant manufacturer’s autocontrol results in any given control period.

Table 1: Confirmation autocontrol and audit testing of samples of certified cement taken at dispatching centre; properties and minimum testing frequencies

Properties to be tested	Minimum testing frequencies	
	Confirmation Autocontrol Testing by the Intermediary	Audit Testing
Early strength	Upon first delivery	1 set of tests per audit
Standard strength	1 per delivered lot but at least 1 per	
Initial setting time	1000 tonnes.	
Loss on ignition	Every further three months storage	
Insoluble residue	1 per 1000 tonnes shall be repeated for testing	

Note: test methods shall be referred to Table 6 of BS EN 197-1:2011 for the same items.

8. REVIEW OF QUALITY MANAGEMENT SYSTEM

The quality management system established in accordance with these Regulations and the conformity of the quality of the certified cement products, evaluated by manufacturer’s autocontrol testing, intermediary’s confirmation autocontrol testing (wherever applicable) and all kinds of audit testing, shall be systematically reviewed at least once every twelve months to ensure the continuous effectiveness of the system and the continuous product conformity of the Certified Cement Products.

9. COMPLIANCE TO ISO 9001

Other than the technical requirements in BS EN 197-1:2011 or in a newer version, all requirements stated in current version of ISO 9001 shall also be complied with.

10. CLASSIFICATION AND DESIGNATION

Classification and designation of the certified cement products shall be in accordance with the relevant version of BS EN 197-1.

11. MARKING AND LABELLING

11.1 General Requirements

Products complying with the Regulations of the PCCS-CP Scheme shall be clearly marked with, but not limited to, the following information.

- (a) Name of product;
- (b) Classification of the cement product and the relevant version of BS EN 197-1;
- (c) Brand and place of origin;
- (d) date or batch code of production, shelf life and conditions of storage.

The information shall be marked either on the packaging or delivery notes to customers.

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