



**Façade Group**

**PRODUCT CONFORMITY CERTIFICATION SCHEME**

**FOR**

**HEAT SOAKED TEMPERED GLASS**

**ADMINISTRATIVE PROCEDURES**

**FaG-TG 001**

***JANUARY 2006***

## **FOREWORD**

The Facade Group of The Hong Kong Institute of Steel Construction was established in 2002. It aims to provide a technical platform for various professionals in the construction industry, including architects, building surveyors, engineers, contractors and facade suppliers to promote advanced and cost-effective façade applications in structures. The Committee of the Façade Group consists of:

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This document “Product Conformity Certification Scheme for Heat Soaked Tempered Glass Administrative Procedures” is the first technical guide on heat soaked tempered glass compiled by the Facade Group. It serves as a reference document for the local construction industry to establish effective administrative procedures of the Product Conformity Certification Scheme for general heat soaked tempered glass. This document was compiled between July and November 2005 by a Task Group consisting of the following Committee Members:

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## **Product Conformity Certification Scheme for Heat Soaked Tempered Glass - Administrative Procedures**

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Amendment Record

## **SYNOPSIS**

This Product Conformity Certification Scheme for Heat Soaked Tempered Glass aims to promote the quality of manufacture and supply of heat soaked tempered glass. The Scheme requires that all the certified products are controlled by a quality management system at various critical stages of manufacture and supply, from auditing of quality management system of production plants, initial prototype testing of products, technical inspection of manufacturing process, and subsequent surveillance visits and continual audit testing of products. It should be noted that in many advanced countries, most government departments, local regulators and authorities as well as national agencies require mandatory certifications of heat soaked tempered glass for reasons of safety, health, environmental protection, fraud prevention and market fairness. Such requirements are often stipulated in their project specifications and procurement contracts. The Scheme adopts ISO 9001 for quality management system, ISO 17020 for inspection and ISO 17025 for testing schemes into one coordinated audit, ensuring conformity of the products at various critical stages of manufacture and supply. All the certified products are entitled to bear a certification mark together with relevant technical product description.

This Scheme carries the following advantages:

- An independent assurance on heat soaked tempered glass is achieved that the products are manufactured and supplied under an effective system of testing, inspection, conformity control and regular monitoring by an independent accredited certification body.
- The purchasers of the products are assured that each individual product is certified to be in compliance with both the stringent administrative procedures and the relevant technical requirements of the Scheme.
- The Scheme is able to identify certified products with a certification mark which enhances the reputation of the products as well as the manufacturers, and hence, their competitiveness in the market.
- All certified products enjoy the benefits of protection against competition from sub-standard products and misrepresentation.
- The Scheme is highly effective in improving production efficiency with reduced wastage and rejects.

It should be noted that a complementary document, namely, Technical Requirements FaG-TG 002 is compiled for heat soaked tempered glass, which includes all technical requirements on material specifications, testing methods / procedures and heat soak process of finished products against relevant standards.

Moreover, as the ISO/IEC Guide 65: 1996 “General requirements for bodies operating product certification systems” specifies that the scope of certification system shall be coupled with production surveillance / assessment and surveillance of the Applicant’s quality management system, the framework of this Scheme is established against the following international guidance:

- i) IAF Guidance on the Application of ISO/IEC Guide 65, and
- ii) IAF Guidance on the Application of ISO/IEC Guide 62.

In view of the local practice and the normative reference in heat soaked tempered glass in Hong Kong, the HKCAS Supplementary Criteria No. 2, in particular, Clause 4 about product certification procedures is adopted. Thus forms a base for building up both the administrative procedures and the technical requirements of this scheme.

The workflow of the Scheme and all relevant procedures of certification audit, surveillance visits and renewal audits are outlined in Appendix A for easy reference.

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**1. Introduction**

- 1.1 This Scheme aims to promote the quality of production of heat soaked tempered glass. The Applicants/ Participants participating in this Scheme shall meet all the specified requirements stipulated in this document.
- 1.2 This Scheme requires all the Applicants/ Participants to operate a Quality Management System complied with ISO 9001: 2000. Alternatively, while the Quality Management System is not required to comply fully with ISO 9001:2000, all the essential quality elements relevant to the manufacture and supply of the products shall be followed (HKCAS Supplementary Criteria No. 2, Issue No. 1 dated August 2003).
- 1.3 This document sets out the procedures for the operation of the Scheme, the rights and the obligations of the Applicants/ Participants as well as the obligations of the Certification Body..
- 1.4 The certification applies to the identification of conformity only to those products that are within the scope of this Scheme.
- 1.5 The workflow of this Scheme and all relevant procedures of certification audit, surveillance visits and renewal audits are outlined in Appendix A for easy reference.

## **2. Definitions**

For the purposes of this Scheme, the following terms are defined as below:

### ***Administrative Procedures***

Procedures which set out the basic administrative requirements for this Scheme.

### ***Applicant***

A company, business or person that has applied for certification but not yet been approved for registration.

### ***Auditor***

A person who possesses the competence as required by ISO 19011:2002 to conduct an audit.

### ***CB***

A certification body accredited by the Hong Kong Accreditation Services (HKAS) to execute this Scheme.

### ***Certification Mark***

A protected mark issued by a CB indicating that a product is in full conformity with the Scheme Requirements.

### ***Concise Product Technical Description***

Statements that complement to the Certification Mark with concise product features description, product standard, product classification and the individual product serial number.

***Initial Type Testing***

A method under which a sample of the product is selected in the certification audit and tested according to a prescribed test method in order to verify full compliance with the relevant Technical Requirements.

***Lead Auditor***

An auditor has additional knowledge and skills in audit leadership, as required by ISO 19011: 2002, to facilitate efficient and effective execution of the audit.

***Major Nonconformity***

A deviation from the Scheme Requirements, or absence of, or failure to implement and maintain one or more required quality management system elements, or a situation which will, on the basis of available objective evidence, raise significant doubt to the conformity of the products (IAF Guidance on the Application of ISO/IEC Guide 65: 1996, Issue 1 dated 27 March 1999).

***Minor Nonconformity***

A failure to comply with the Scheme Requirements which is considered not to affect seriously the quality management system of the Applicant/ Registrant or the compliance with the Scheme Requirements.

***Participants***

A company, business or person that has been approved to be registered in the relevant registration list of a certification body.

***Product Conformity Certificate***

A certificate issued by a CB affirming that all the Scheme Requirements on the products as described under the Scope have been assessed satisfactorily.

***Purchaser***

An individual or a company that purchases the product.

***Quality Management System***

The organizational structure, responsibilities, procedures, processes and resources for implementing quality management regarding the manufacture and supply of the products.

***Quality Manual***

Documents which describe the quality management system, including management structures and operational procedures of the Applicant, in meeting the Scheme Requirements.

***Scope of Certification***

A range of products that an Applicant applies for the product conformity certification under this Scheme.

***Technical Requirements***

Documents which set out all prevailing technical requirements as required by the Scheme.

***The Scheme***

This is a System 5 - Product Conformity Certification Scheme (ISO/IEC Guide 67: 2004) which has been established for the certification of the manufacture and supply of fire protection products to all the requirements presented in this Scheme.

***The Scheme Requirements***

The combined requirements set out by the Product Conformity Certification Scheme for Fire Protection Products - Administrative Procedures and the complement any Technical Requirements.

**3. Prerequisite of Applicants**

- 3.1 The Applicant shall be required to demonstrate the ability to conform with the Administrative Procedures and the relevant Technical Requirements of this Scheme.
- 3.2 The Applicant shall establish and maintain an office and a production plant for the management, manufacture and supply of the products.
- 3.3 The Applicant shall establish and maintain a documented quality management system in accordance with this document. The quality management system shall apply to all relevant plants of the Applicant.
- 3.4 In case of a new application for product conformity certification, the applicant shall establish product related procedures and maintain quality records for at least two months before a certification audit will be conducted.
- 3.5 The Applicant shall obtain all statutory / regulatory licenses in connection with the operation / production of the plant(s).

**4. Obligations of Applicants/ Participants**

- 4.1 The Applicant/ Participant shall establish and operate a quality management system related to the product in accordance with ISO 9001: 2000. Alternatively, while the quality management system is not required to comply fully with ISO 9001:2000, all the essential quality elements relevant to the manufacture and supply of the product shall be followed. The scope of certification shall be clearly defined and submitted to the CB for consideration.

## **Product Conformity Certification Scheme for Heat Soaked Tempered Glass - Administrative Procedures**

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- 4.2 The Applicant/ Participant shall operate the production plant according to the Quality Management System and manufacture the product within the scope of this Scheme.
- 4.3 The Applicant shall pay to the CB an application fee, a certification audit fee, a product testing fee and all the subsequent fees for the certification audit, surveillance visits and renewal audits. Upon approval of the registration, the Participant shall be responsible to pay the annual fee for each certificate registration and the administration of this Scheme. The amount of fees shall be determined by the CB and these fees may change from time to time.
- 4.4 The Applicant/ Participant shall provide full cooperation and assistance during certification audits, and these shall include producing relevant product related procedures and technical documents, providing quality records when requested, and free access to plants, and providing assistance to initial type testing as well as subsequent audit testing whenever necessary.
- 4.5 The Participant is entitled to use the certification mark in accordance with Clause 9. However, the Participant shall not use it in a manner that may bring the Scheme or the CB into disrepute.
- 4.6 The Participant is responsible for informing the CB in writing of any changes that may affect the Registration. Such changes include:
- a. Changes in the ownership or the name of the organization.
  - b. Changes in the management representative, the directors or other senior staff of the organization.
  - c. Major changes in the quality management system related to the certified product or in the production activities.
  - d. Closure or relocation of a relevant production plant.
- 4.7 The CB shall determine whether the changes require further investigation regarding the Registration. In such case, the Participant shall not release products resulting from such changes without written approval issued by the CB.

**5. Obligations of Certification Body**

5.1 Experience and Qualification of Auditing Team

The Certification Body shall select auditors with suitable qualifications or training as well as sufficient experience and ability to perform audits.

The competence requirements are:

- a. At least one member of the audit team shall possess at least one year experience in ISO 9001 QMS, and with a degree in engineering disciplines plus a minimum of 1 year related experience in conducting tests for curtain walls or relevant tests;
- b. At least one member of the audit team shall possess at least one year experience in ISO 9001 QMS, and with a higher diploma/ diploma in engineering disciplines plus a minimum of 3 years related experience in conducting tests for curtain walls or relevant tests;
- c. Lead Auditors shall fulfill all qualification requirements in ISO 19011: 2002;

5.2 Confidentiality

All information related to the certificate registration should be held in confidence by the staff of the CB.

5.3 Changes to the Scheme

This Scheme may be altered by the CB from time to time. The CB will notify the Applicants/ Registrants with written notice of the proposed alterations, and will take account of the views expressed by interested parties before making decision on the changes within a time frame set by the CB. The date by which the Applicants or Registrants must comply with the altered Scheme will be notified in writing by the CB.

**6. Application Procedure for Certification**

- 6.1 The Applicant shall submit an application to the CB for the product with all relevant documents, e.g. scope of certification, quality manual, drawings and technical information including specifications related to the products, certificates of origin for purchased raw materials, etc.
- 6.2 The Applicant shall sign a certification agreement to abide by the Scheme as well as the Regulations of the CB.
- 6.3 The Applicant shall nominate a senior member from his organization to be the Management Representative.

**7. Certification Audit**

**7.1 Stage 1 Audit**

- 7.1.1 Upon the receipt of an application, an audit team, consisting of a lead auditor with other auditors whenever necessary, shall carry out a document review and visit the concerned office and each production plant involved.
- 7.1.2 Auditing of the Applicant's Quality Management System, drawings and technical information related to the product shall form part of Stage 1 Audit. All quality records shall be made available for the audit.
- 7.1.3 At the end of the visit, the Auditor shall comment on the acceptability of the Applicant's quality management system, drawings and technical information related to the product, and obtain the Applicant's acknowledgement.
- 7.1.4 Once the Applicant submits all necessary documents to the CB for assessment and the Lead Auditor recommends to proceed, Stage 2 Audit shall be arranged to be performed on an agreed date.

- 7.2 Stage 2 Audit
- 7.2.1 The CB selects suitable Auditors, and experts whenever necessary, to perform on-site audits to the concerned office and each production plant involved.
- 7.2.2 The Lead Auditor shall call for initial inspection of heat soak process. The test samples shall be selected according to the relevant Technical Requirements.
- 7.2.3 If the Applicant has the resource and capability which includes an in-house laboratory to relevant test standards, tests can be performed in-house and shall be witnessed by the Lead Auditor / Auditor against all requirements in ISO/IEC 17025 and the relevant Technical Requirements. Otherwise, testing shall be carried out by a laboratory which is accredited by HOKLAS for the specific tests, or an oversea laboratory under the HOKLAS's Mutual Recognition Agreements (MRA). The samples shall be randomly selected for testing in accordance with the Technical Requirements and shall be representative of the batch of the product. It should be noted that the initial type testing results in the certification audit will be the reference results of the fire performance test, which will serve as the technical basis for the sampling and testing plan as stipulated in the relevant Technical Requirements for surveillance visits and renewal audits.
- 7.2.4 On completion of the audit, the Lead Auditor shall report any non-conformities and observations whenever appropriate. Details of any follow-up actions for rectification shall be proposed by the Applicant in writing for the consideration of the Lead Auditor.
- 7.2.5 Whenever follow-up actions are proposed by the Applicant and agreed by the Lead Auditor, the Applicant shall fulfill the agreed corrective actions within an agreed time frame.
- 8. Approval of Registration**
- 8.1 The CB shall consider the Lead Auditor's recommendations to decide on the approval of registration, or otherwise.

- 8.2 When a registration is approved, a product conformity certificate shall be issued to the Applicant to confirm his registration in the relevant registration list of the CB.
- 8.3 When an application is rejected, the Applicant shall have the right of appeal to any decision made by the CB in accordance with the CB's Regulations. A meeting of the Appeals Panel shall be held within 30 calendar days of receipt of such notice, and the Applicant shall be given at least 7 calendar days notice of the time and place of such a meeting. The decision of the majority of the Appeals Panel as declared by its chairman shall be final.

## **9. Use of Certification Mark**

- 9.1 Upon approval of registration, the Participant is entitled to use the Certification Mark according to the Regulations of the CB. This mark shall be used on the products and associated documents including quotations, delivery notes, brochures and advertising media, etc.
- 9.2 The use of Certification Mark shall be proprietary in nature, and shall apply only to the certified products.
- 9.3 The Participant shall use the Certification Mark in association with the concise product technical description. Guideline for the use of the Certification Mark is given in Appendix B.
- 9.4 Any misuse of the Certification Mark shall be stopped immediately and rectified by a corrective action as agreed by the CB.

## **10. Surveillance Visits and Renewal Audits**

- 10.1 After approval of registration, the CB shall carry out surveillance visits and renewal audits in accordance with the Scheme Requirements. While surveillance visits shall normally be performed within an agreed time interval, normally every 6 months, the renewal audit shall be carried out by the end of the third year from the date of the initial certification audit or the preceding renewal audit.

- 10.2 During surveillance visits and renewal audits, the Lead Auditor shall perform the following:
- a. Each production plant and the relevant equipment including testing equipment shall be checked against the Quality Manual and the product related procedures of the Participant, as well as the relevant Technical Requirements of the Scheme.
  - b. The quality management system related to the product and all associated records including order processing records, quality records, etc.
  - c. Records showing the use of the Certification Mark..
- 10.3 If a Participant wishes to extend certification scope of an existing product with an additional type or a new model manufactured in the same plant and to the same, or different standard, a written application shall be submitted to the CB. Under such cases, test samples of the new model of the product shall be subjected to additional audit inspection of the heat soak process and audit testing in accordance with the Technical Requirements, and the CB may decide whether a full scale audit or a partial audit is required.
- 10.4 Audit inspection and testing
- 10.4.1 The audit inspection of the heat soak process, including checking of quality control records shall be carried out in certification audit, surveillance visits and renewal audits.
- 10.4.2 The audit inspection of the heat soak process and the audit testing including fragmentation test and mechanical strength test measure the performance of a heat soaked tempered glass in accordance with prevailing National Testing Standard or Code of Practice. For example, the heat soak performance in the elevated temperature conditions against BS EN 14179-1: 2005 Cl. 5.3 and Cl. 6 and fragmentation test results against BS EN 14179-1: 2005 Cl. 10. Mechanical strength tests shall be carried out by a HOKLAS accredited laboratory or an oversea laboratory under the HOKLAS's Mutual Recognition Agreements (MRA) against relevant testing standards.

10.4.3 Other tests may be performed in-house and shall be witnessed by the Lead Auditor and other Auditor whenever necessary against all requirements in ISO/IEC 17025 and other relevant testing documents if the Applicant has the resource and capability which includes an accredited in-house laboratory to relevant test standards.

10.5 Whenever an audit report of major nonconformities is issued, a follow up visit shall be performed within four weeks to confirm whether the nonconformities have been corrected to the requirements of the CB. Whenever minor nonconformities are found, the Participant shall submit their plan of corrections and corrective actions within two weeks for the assessment of the CB. The assessment of such corrections and corrective actions shall be held in the next surveillance visit.

10.6 Outcome of Audits

The Participant shall be notified of the audit outcome:

- a. Endorsement on satisfactory progress/ renewal of registration in which all the Scheme Requirements related to the product is complied with.
- b. Conditional registration/ renewal in which a number of minor nonconformities needed to be corrected. This does not indicate a major failure against the Scheme Requirements related to the product. The Participant is required to rectify all such non-conformities within an agreed time frame before an endorsement on satisfactory progress or a registration renewal is issued.
- c. Suspension of registration in which a major non-conformity or a series of significant non-conformities. This indicates a major failure against the Scheme Requirements related to the product. The Participant is required to rectify all such non-conformities within an agreed time frame, and a follow up visit for rectification is required before an endorsement on satisfactory progress or a registration renewal is considered.

Situations that lead to suspension of registration include:

- (i) improper use of the product conformity certificate or the certification mark,

- e.g. misleading published information or advertisement is not re-solved.
- (ii) contravention to the rules of the Scheme.
- d. Withdrawal of registration in which a major non-conformity or a series of significant non-conformities that indicate a major failure against the Scheme Requirements related to the product, and that these non-conformities have not been rectified after suspension of registration.

The registration may be withdrawn if:

- (i) the Participant does not wish to continue the registration, or
- (ii) the product is no longer made by the Participant.
- (iii) the Technical Requirements are changed in such a way that the Participant is unable to demonstrate compliance with the new requirements.

10.7 Upon suspension or withdrawal of registration,

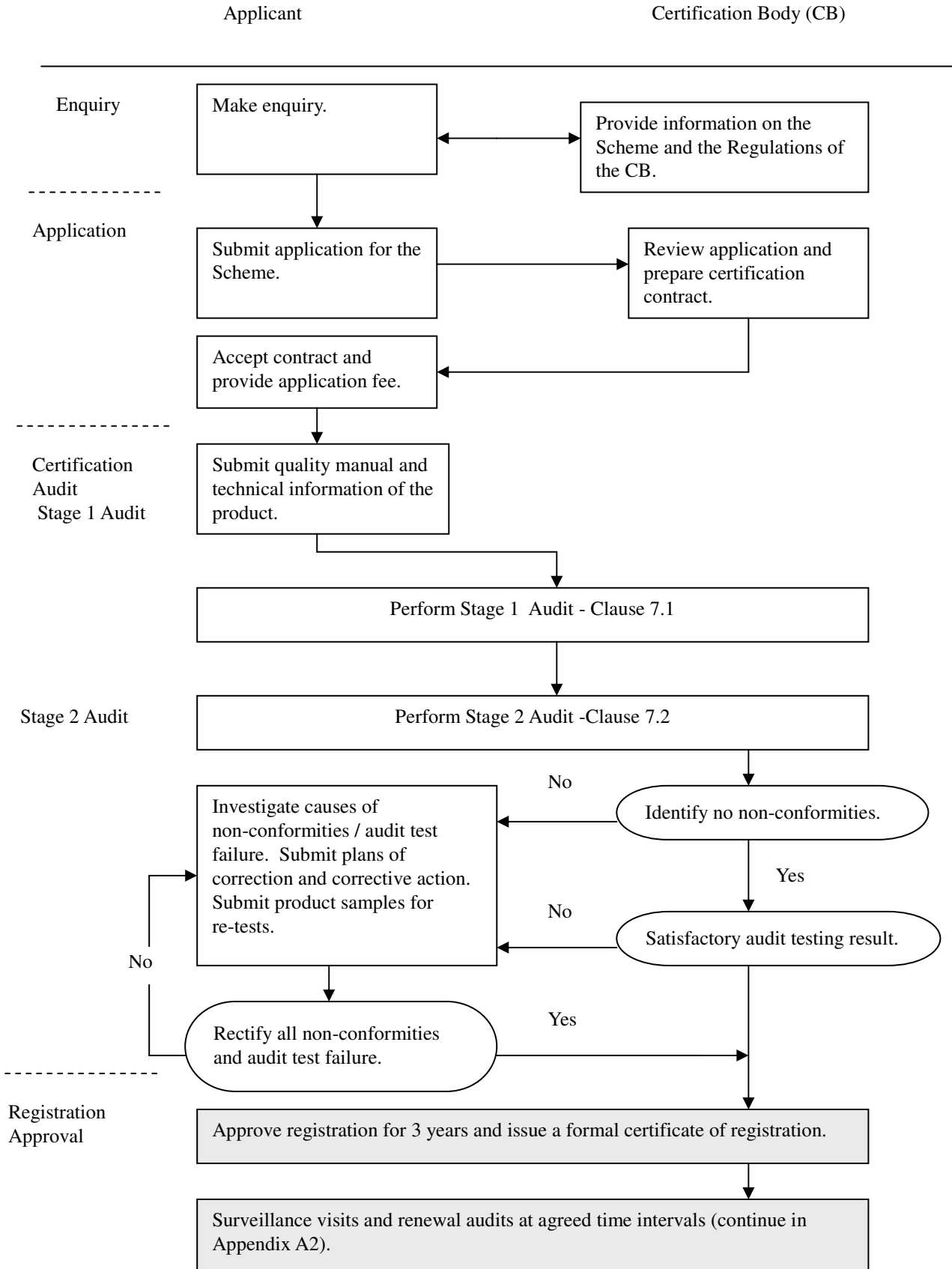
- a. the Participant shall cease to use the certification mark in any manner whatsoever, and shall cease to use any other material that may imply that the product is certified under this Scheme.
- b. the Participant shall notify immediately all customers of his registration status where the registration is a condition of contract with a customer, and where the business is active or likely to be active with that customer within one year of the suspension or withdrawal of the registration.
- c. the Participant shall cease to operate the business in a manner which may imply that the Participant is certified under this Scheme.

**11. Complaints**

- 11.1 The Participant shall keep a record of all complaints related to the certified products and shall make these records available to the Auditor during the surveillance visits or renewal audits.
- 11.2 The CB shall record all written complaints in relation to a Participant as received from the third parties. Such complaints shall be investigated in accordance with the Regulations of the CB.
- 11.3 The Participant shall take appropriate actions with respect to such complaints and make good any deficiencies found in the products or the services to comply with the requirements of this Scheme.

Appendix A1

Workflow of Product Conformity Certification Scheme – Certification Audit

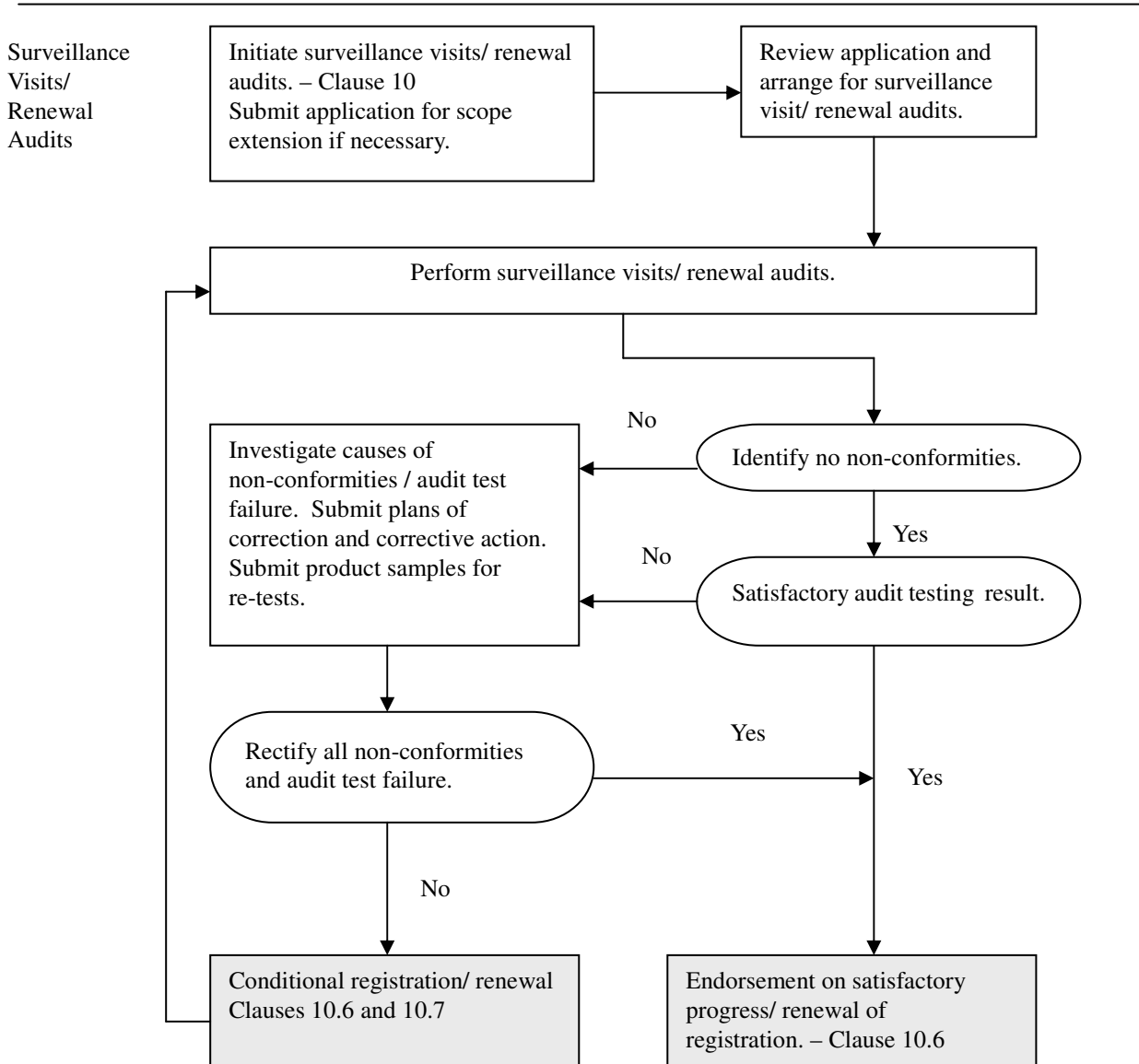


Appendix A2

Workflow of Product Conformity Certification Scheme –  
Surveillance Visits and Renewal Audits

Registrant

Certification Body (CB)

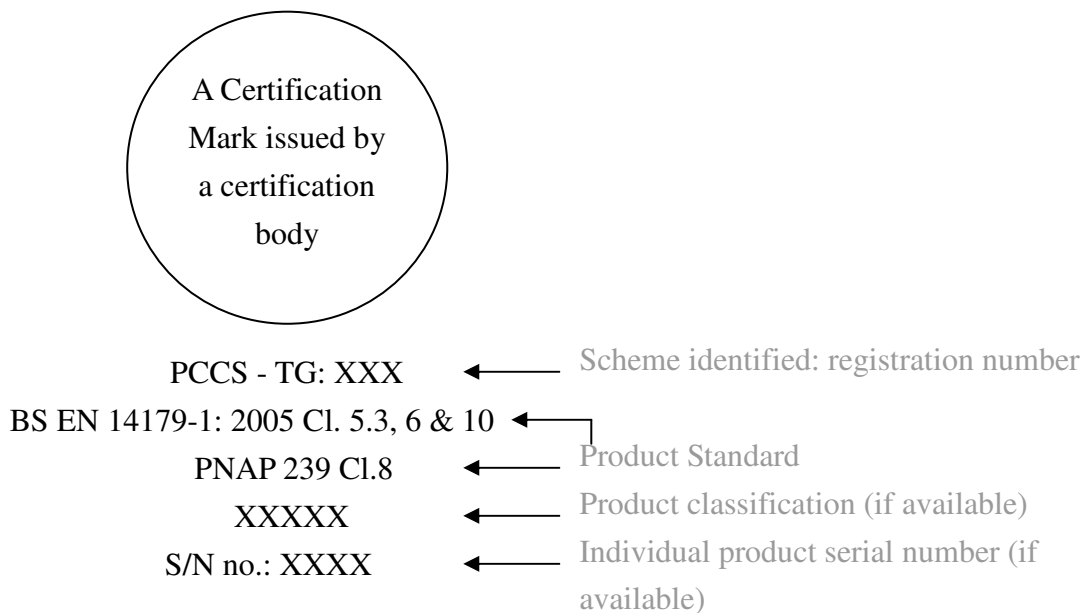


**Appendix B  
Use of Certification Mark**

The Participant shall use the Certification Mark in association with the concise product technical description as follow:

- (i) Concise product features description;
- (ii) Product standard;
- (iii) Product classification (if available);
- (iv) Individual product serial number (if available).

For example, if a heat soaked tempered glass panel complies with the requirements of BS EN 14179-1: 2005 Clause 5.3, 6 & 10 as well as PNAP 239 Clause 8, the Participant shall show the Certification Mark with the concise product technical description as follow:



It should be noted that:

1. The Certification Mark shall always be used in conjunction with the registration number of the Participant in this Scheme and the appropriate version of the relevant product standards with date code. If a Participant wishes to vary these conditions, he must obtain a written permission of the CB.
2. The Certification Mark shall only be used on the certified product, and any other uses of the Certification Mark shall be submitted to the CB for approval in writing before being put into effect. The Participant shall use the Certification Mark in a fair and reasonable

manner on the certified product so as to indicate that the product is certified under the Scheme. A Participant shall not use the Certification Mark or his product conformity certificates of the Scheme in such a manner as to be detrimental to the interests of the CB or other certified companies. Moreover, for the avoidance of doubt, a Participant shall not advertise or with reference to the Certification Mark in any manner indicating or so as to indicate that his certified products are superior than the same or similar products offered by other Participants under the Scheme.

3. A Participant shall only use the Certification Mark in the exact format stipulated by the CB, and shall observe any directions given by the CB on colours and sizes of the representations of the Certification Mark. A Certification Mark should be directly applied to each individual certified product. A Participant shall not use any mark or device which is confusingly similar to the Certification Mark on any of his products.
4. A Participant shall discontinue immediately any use of the Certification Mark which is unacceptable to the CB, and any form of public statement or reference, advertisement or conduct in relation to the registration under this Scheme which in the opinion of the CB might be misleading.
5. If the scope of certification of a product is covered by an accreditation agreement that the CB has with an accreditation body, then the CB may in its discretion and subject always to payment of relevant fees, permit the Participant to use the relevant accreditation mark(s). The specifications of the relevant accreditation mark(s), and guidelines on the use of the accreditation mark(s) in conjunction with the Certification Mark of the CB, will be published by the CB from time to time.

