HOKLAS Supplementary Criteria No. 17

Construction Materials Test Category – Accreditation of Building Components and Related Tests

0 Introduction

(a) This criteria document serves to clarify and supplement the requirements of ISO/IEC 17025:2017 and HKAS Policy Document No. 1 for the accreditation of building components and related tests under the test category of 'Construction Materials'. It shall be read in conjunction with ISO/IEC 17025:2017, HKAS Policy Document No. 1 and relevant HKAS and HOKLAS supplementary criteria documents. The following sections set out specific technical criteria for the building components and related tests which include, but not limited to, the following items :

- Acoustic tests
- Dimension stones & Tile
- Curtain walls & Windows
- Doors & Gatesets
- Pipes

(b) Laboratories shall comply with all specific requirements of the test methods in addition to the requirements specified in this documents.

1 Scope

(No additional explanation)

2 Normative references

(No additional explanation)

3 Terms and definitions

(No additional explanation)

4 General requirements

(No additional explanation)

5 Structural requirements

(No additional explanation)

6 Resource requirements

6.1 General

(No additional explanation)

6.2 Personnel

(a) An **approved signatory** with responsibility for the operation of the building components and related tests shall have the necessary competence to ensure the tests are performed in accordance with the test methods and HKAS requirements. A person holding a recognised degree or equivalent qualification in a relevant discipline, with at least three years of relevant technical and accountable experience, satisfies these requirements. Alternatively, a person with eight years directly relevant technical and managerial experience may be considered acceptable in lieu of formal qualifications.

(b) For testing operators performing wind resistance tests of curtain walls/windows, a person in possession of a relevant technical certificate issued by the Institute of Vocational Education or equivalent, with at least one year of on-the-job training on the practical and technical aspects of relevant testing, satisfies these requirements. Alternatively, a person having four years of relevant experience and on-the-job training on the practical and technical aspects of relevant testing also satisfies these requirements.

(c) Each laboratory shall evaluate the technical competence of its test operators for wind resistance testing of curtain walls/windows and keeps a list of **qualified operators** for wind resistance testing of curtain walls/windows who are permitted to perform the concerned tests and sign the worksheets. Record of assessing the competence of the qualified operator(s) shall be kept in the laboratory and ready for examination during each HKAS assessment visit or upon request by HKAS.

(d) Testing personnel shall normally be supervised by a suitable qualified supervisor having the necessary qualification, experience and technical

knowledge not less than those of the testing operators for the accredited test. Testing operator shall have the necessary qualifications, experience and technical knowledge to perform the accredited test.

6.3 Facilities and environmental conditions

(No additional explanation)

6.4 Equipment

(No additional explanation)

6.5 Metrological traceability

(a) General requirements on equipment calibrations are given in HOKLAS SC-02. Specific requirements on equipment calibration/verification for various building components and related tests are given in Appendix A of this document. These requirements shall be complied with unless overridden by more stringent requirements stipulated in the relevant test methods.

(b) Where a laboratory has the necessary reference standard or reference material, suitably controlled environment and competent staff, it may perform in-house calibration/verification for its working equipment. Documented internal calibration/verification procedures shall be ready for examination during each HKAS assessment visit. HKAS Executive may require the laboratory to provide the calibration/verification procedures in the briefing notes to the assessment team.

6.6 Externally provided products and services

(No additional explanation)

7 Process requirements

7.1 Review of requests, tenders and contracts

(No additional explanation)

7.2 Selection, verification and validation of methods

(No additional explanation)

7.3 Sampling

(No additional explanation)

7.4 Handling of test items

(a) Items to be tested shall be identified throughout the test and records of identification of each test item shall be kept. Such identification shall be such that the area or batch of items specifically tested can be identified against the corresponding test results.

7.5 Technical records

(No additional explanation)

7.6 Evaluation of measurement uncertainty

(No additional explanation)

7.7 Ensuring the validity of results

(a) An applicant or accredited laboratory shall conform with the proficiency testing requirements as stipulated in HOKLAS SC-33.

7.8 Reporting of results

(No additional explanation)

7.9 Complaints

(No additional explanation)

7.10 Nonconforming work

(No additional explanation)

7.11 Control of data and information management

(No additional explanation)

8 Management system requirements

(No additional explanation)

APPENDIX A

SPECIFIC CALIBRATION/VERIFICATION REQUIREMENTS

This appendix lists the current recommended specific calibration requirements for equipment of building components and related tests.

General		
Type of equipment	**Recommended maximum period between successive calibrations/verifications**	**Recommended calibration/verification procedure or guidance documents and equipment requirements**
Balance	Refer to HOKLAS SC-02 App. E	Refer to HOKLAS SC-02 App. E
Caliper and micrometer	Refer to HOKLAS SC-02 App. E	Refer to HOKLAS SC-02 App. E
Force measuring device (proving ring, transducer or load cell)	Every year	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
Force testing machine (compression or tension) (a) Load verification	Every 6 months	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02 to an appropriate standard (BS, EN, ASTM or ISO etc.)
(b) Load rate	Every month	In accordance with appropriate standards
Pressure gauge (hydraulic or transducer types)	Refer to HOKLAS SC-02 App. E	Refer to HOKLAS SC-02 App. E (The use of a pressure gauge in a hydraulic jack to measure forces is not accepted)
Time measuring device	Refer to HOKLAS SC-02 App. E	Refer to HOKLAS SC-02 App. E

Curtain walls & Windows Test		
Type of equipment	**Recommended maximum period between successive calibrations/verifications**	**Recommended calibration/verification procedure or guidance documents and equipment requirements**
Pressure chamber	Every year	Check uniformity of pressure distribution for at least three points at the same time
Pressure transducer	Every year	By a ‘competent calibration body’ as defined in clause 2.1 of HOKLAS SC-02
Displacement transducer	Every year	By a ‘competent calibration body’ as defined in clause 2.1 of HOKLAS SC-02 or calibrate using a micrometer type calibrator.
	Before use	One-point check using a gauge block
Flowmeter or rotameter	Every year	By a ‘competent calibration body’ as defined in clause 2.1 of HOKLAS SC-02

Acoustic Test		
Type of equipment	**Recommended maximum period between successive calibrations/verification**	**Recommended calibration/verification procedure or guidance documents and equipment requirements**
Acoustic calibrator	Every year	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
Frequency analyser	Every five years	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
Frequency response tracer	Every year	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
Frequency standard	Every five years	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
Microphones	Every year or when 1 dB change is detected, whichever is sooner	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
	Every three months	Using a reference device
Sound level meter	Every two years	By a 'competent calibration body' as defined in clause 2.1 of HOKLAS SC-02
	Every three months	Using a reference device
	Before use	Using sound level calibrator