



**Hong Kong Association for  
Testing, Inspection and Certification Ltd.  
Professional Certification Scheme for Testing Personnel**

**CC06  
CERTIFICATION HANDBOOK  
TOYS AND HARDLINES TESTING**

First Issue  
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## FOREWORD

The Professional Certification Scheme for Testing Personnel (PCSTP) is a comprehensive scheme which provides for the examination and certification of individuals seeking to demonstrate their knowledge and/or competence in their field of operation.

The scheme is developed under HKTIC and managed by the Certification Board (CB), which is responsible for the granting, reviewing and revising the personnel certification titles and requirements in accordance to the prevailing demand of the testing industries served by the scheme. The Certification Board, in turn, may appoint specialist Working Committees as it deems necessary to oversee specific parts of the scheme.

The sole criteria for certification of personnel engaged in toys and hardlines testing are given in this document (and any subsequent amendments) and no other criteria will be applied. Certification is not conditional on the candidate applying for other services or membership from HKTIC or any other groups or associations.

The benefits of certification include:

1. recognition and prestige for the individual and creation of a competitive advantage over non-certified individuals in the same field;
2. enhanced employment opportunities;
3. establishment of a professional standard for individuals in a particular testing field;
4. assistance to employers in making more informed recruitment decisions;
5. a more productive and highly trained workforce for employers;
6. enhanced professional impression on customers;
7. assistance to clients in making informed decisions about qualified providers;
8. protection of the general public from using incompetent and unfit practitioners; and
9. assurance of the general public of the accuracy and validity of testing results.



## **Requirements of Certification of Personnel Engaged in Toys and Hardlines Testing**

### **1. General**

- 1.1. This document prescribes procedures by which personnel may be examined and, if successful, certified for toys and hardlines testing.

### **2. Scope of Certification**

- 2.1. The levels of certification available are

- 2.1.1. Certified Testing Technician and;
- 2.1.2. Certified Testing Professional.

- 2.2. The scope of certification

Certification of toys and hardlines testing is sub-divided into two sub-categories:

- 2.2.1. Toys and children's products tests
- 2.2.2. Hardlines tests

### **3. Eligibility for certification**

- 3.1. Candidates shall have a combination of education, training and experience adequate to ensure that they have the potential to understand the principles and procedures of the applicable methods.

- 3.2. Academic qualification and experience

- 3.2.1. Certified Testing Technician (CTT)

- (a) The candidate shall have

- a diploma in physical science or engineering or equivalent with no less than two years of relevant testing experience; or
- 10 years of relevant testing experience; or
- any other qualifications and experience deemed as equivalent.

- 3.2.2. Certified Testing Professional (CTP)

- (a) The candidate shall have a bachelor's degree in physical science or engineering or equivalent and with no less than three years of relevant experience.



(b) Candidate without a degree shall

- have been certified as Certified Testing Technician by the Certification Board and have no less than five years of relevant supervisory experience post certification as CTT, or
- have no less than 15 years of relevant experience of which 5 years shall be at a managerial position.

(c) Candidates shall have any other qualifications and experience deemed as equivalent.

### 3.3. Training

#### 3.3.1. Certified Testing Technician

- (a) provide certificates of achievement (satisfactory results in end-of-course evaluation) in training courses approved by the Certification Board in respective competence requirements; or
- (b) obtain satisfactory results in certification examinations as arranged by the Certification Board.

Details of approved training courses are available on [www.hktic.org](http://www.hktic.org).

#### 3.3.2. Certified Testing Professional

- (a) any one of the following:
  - (i) provide certificates of achievement (satisfactory results in end-of-course evaluation) in training courses approved by the Certification Board in respective competence requirements; or
  - (ii) obtain satisfactory results in certification scheme examinations as arranged by the Certification Board; or
  - (iii) have no less than 15 years of relevant experience, of which 5 years shall be at managerial position; or
  - (iv) HOKLAS approved signatory with not less than 8 years of relevant experience and the scope of signatory approval covering the major measurement techniques or methods as stipulated in this Certification Handbook for the sub-category the certification is being sought; and



- (b) obtain satisfactory results in professional assessment by interview.

Details of approved training courses are available on [www.hktic.org](http://www.hktic.org).

### 3.4. Competence requirements for Certified Testing Technician

#### 3.4.1. General requirements

- Understanding of ISO/IEC 17025 including quality control requirements
- Laboratory safety
- Integrity management

#### 3.4.2. Technical requirements

- Understanding basic measurement methods
- Knowledge of equipment usage

### 3.5. Competence requirements for Certified Testing Professional

#### 3.5.1. Management requirements

- Management skills
- Integrity management

#### 3.5.2. Quality requirements

- Laboratory management in compliance with ISO/IEC 17025
  - Statistical treatments of data and quality control requirement
- Laboratory safety

#### 3.5.3. Technical requirements

- Estimations of measurement uncertainty
- Interpretation of results and reporting requirements
- Requirements of equipment calibration
- Principles of measurement methods employed in testing



#### **4. Examination Procedure**

4.1. A candidate who can provide certificates of achievement in training courses in all competence requirements may be exempted from examinations.

4.2. Partial exemption for examinations is not allowed.

4.3. No exemption is permitted for professional assessment by interview for Certified Testing Professional candidates.

4.4. Examinations consists of

4.4.1. Written examination; and/or

4.4.2. Professional assessment by interview (for Certified Testing Professionals only).

4.5. Candidates must satisfy the examiner(s) in all parts. Details of the examination format follow the syllabus and specimen examination questions as given in Appendices 1 and 2 respectively.

4.6. Types of questions

4.6.1. Multiple choice questions

4.6.2. Short answer questions

4.6.3. Open-ended questions

4.7. Examination for Certified Testing Technician

The examination will comprise the following:

4.7.1. General

- multiple-choice questions
- short answer questions

4.7.2. Technical

- multiple-choice questions
- short answer questions

4.7.3. Time length of examination

- Written examination – 2 hours



#### 4.7.4. Weighting of each topic

<u>Topics</u>	<u>Weighing (%)</u>
a) Understanding ISO/IEC 17025	10
b) Laboratory safety	10
c) Integrity management	10
d) Understanding basic measurement methods	45
e) Equipment usage	25

Weighing of each topic shall not deviate from the pre-set percentage by more than 5%.

#### 4.7.5. Marking system

- Model answer shall be set for each multiple choice questions. Marks will be given for correct answers and half of the mark will be deducted for each wrong answer.
- Suggested answers shall be set and marks should be allocated according to key points of answers for short questions. Marks for each key point should be pre-set. Marks would be given to answers with meanings which match the suggested answers as judged by the marker.

#### 4.7.6. Passing mark

- The passing mark for each section shall not be less than 40% and the overall passing mark is 60%.

#### 4.8. Examination for Certified Testing Professional

The examination will comprise the following:

##### 4.8.1. Management requirements

- Multiple choice questions
- Short answer questions

##### 4.8.2. Quality requirements

- Multiple choice questions
- Short answer questions
- Open-ended question(s)





## 4.8.3. Technical requirements

- Multiple choice questions
- Short questions
- Open-ended question(s)

## 4.8.4. Professional assessment by interview

- The interview will cover all certification criteria and focus on underlying principles, limitations, quality control checks and reporting requirements of tests currently undertaken by the candidate.

## 4.8.5. Time length of examinations

- Written examination – 3 hours
- Professional assessment by interview – 30 to 50 minutes

## 4.8.6. Weighting for each topic

<u>Topics</u>	<u>Weighting (%)</u>
a) Management requirements	10
b) Integrity management	10
c) Laboratory management in compliance with ISO/IEC 17025	15
d) Laboratory safety	5
e) Estimation of measurement uncertainty	10
f) Interpretation of results and reporting requirements	10
g) Requirements of equipment calibration	15
h) Principles of measurement methods	25

Weighting of each topic shall not deviate from the pre-set percentage by more than 5%.

## 4.8.7. Marking system

- The same marking system as Section 4.7.5 shall apply. The marking system for open-ended questions shall be the same as that for short questions.



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#### 4.8.8. Passing Mark

- The passing mark for each section shall not be less than 40% and the overall passing mark is 60% for each of the written examination and of the interview.
- A candidate must pass both the written examination and the interview.



## 5. Application Procedure for Certification/Examination and Fees

### 5.1. Application form

5.1.1. Applications must be made on the appropriate application form which is available at [www.hktic.org](http://www.hktic.org).

5.1.2. Application form asks for specific details of experience and training and must be signed confirming that these details are correct and supported by such other documents as may be necessary to confirm that the candidate is eligible for examination.

5.1.3. No applications can be confirmed or examination dates issued until receipt of a correctly completed application form and the full fees. In the event of false statements being discovered any certificate awarded as a result of the test will be revoked and declared null and void.

### 5.2. Application and examination fees

5.2.1. The fee structure is as follows:

Level	Type of application/examination	Fee (H.K. \$)
CTT	Initial and upgrade application	300
	Examination (written), if applicable <sup>Note</sup>	500
	Annual subscription fee	500
CTP	Initial and upgrade application	500
	Examination (written), if applicable <sup>Note</sup>	500
	Examination (professional assessment)	1000
	Annual subscription fee	500

Note:

Written examination can be exempted under the following conditions by:

- achieving certificate of achievement (satisfactory results in end-of-course evaluation) in approved training courses for all competence requirements; or
- fulfilling the academic requirements and having no less than 15 years of relevant experience, of which 5 years shall be at a managerial position for testing professionals.



5.3. Initial certification, certification upgrade and extension of certification of new category

- 5.3.1. Candidates who are seeking certification for the first time or for those wishing to upgrade or extend their certification credential can go to website [www.hktic.org](http://www.hktic.org) and download an application form and Handbook for the test category to be certified.
- 5.3.2. The candidate shall submit payment, completed application form and documentation consisting of :
- Academic qualifications;
  - Certificate of achievements in appropriate training courses; and
  - Any other relevant records
- 5.3.3. The application is reviewed and evaluated by the Programme Officer for confirmation of acceptance at the requested level of certification. The candidate is notified of the decision and/or date and time of examination where applicable.
- 5.3.4. The Certification Board may grant certification to Testing Technicians directly without examination on condition that they fulfill the academic and training criteria as stipulated in clauses 3.2.1 and 3.3.1.
- 5.3.5. The Certification Board may recommend that a candidate seeks certification at an alternate level, or terminate the certification process after reviewing the documents submitted. The application fee would not be refunded.
- 5.3.6. The examiners involved are independent and do not respond to questions from candidate. The Programme Officer provides the information about the certification process to the candidate and answers any questions he/she may have.
- 5.3.7. The Certification Board makes the decisions on awarding a pass or fail based primarily upon the recommendation of the examiners.
- 5.3.8. A candidate applying for Certified Testing Professional is advised to take and pass the written examination before applying for professional assessment by interview.
- 5.3.9. All certified personnel will be registered in databases and presented as public information on their respective websites. The candidate is notified of the result of the



certification procedure within 30 calendar days after the examination or submission of application. They are entitled to use the designation as CTP or CTT.

#### 5.4. Re-certification

5.4.1. Candidates are required to re-certify after the period of certification validity, which is normally 3 years from the date of issue of the certificate, has expired.

5.4.2. The re-certification process is different from the first certification process. It concentrates on the continuing professional development (CPD) of the individual that has taken part in since the last certification or re-certification. Similar to first certification, candidate shall visit the website and download the application form and shall submit payment and completed documentation, consisting of

- Application form for re-certification
- Working experience in the past 3 years and
- Records of Continuing Professional Development (form for recording of CPDU is available on website [www.hktic.org](http://www.hktic.org))

5.4.3. The Programme Secretariat will review the records of CPD to determine whether the re-certification candidate fulfils the CPD requirements for his/her level.

#### 5.5. Continuing Professional Development (CPD)

5.5.1. The Continuing Professional Development programme supports the ongoing educational and professional development of individuals who have attained the certification. The purpose of the CPD program is to:

- enhance ongoing professional development;
- encourage and recognize individualized learning opportunities;
- maintain the value and recognition of the certification; and
- provide a vehicle for attaining and recording professional development activities.

5.5.2. In order to satisfy the CPD programme and maintain an active certification status, candidate must accrue and report a minimum of 30 and 60 Continuing Professional Development Units (CPDUs) during each three-year certification cycle for Certified Testing Technician and Certified Testing Professional respectively. A Certified Testing Technician can accrue the necessary CPDUs by participating in any one or more activities as listed in Appendix 4. A Certified Testing Professional shall



participate in at least two activities. The number of CPDUs accrued for one activity shall not be less than 30 in case the Professional attends only two activities. The expiry date of validity is shown on the certificate.

#### 5.5.3. Continuing Professional Development Units (CPDUs)

- The Continuing Professional Development Units (CPDUs) is the measuring unit used to quantify approved learning and professional service activities. Typically, one CPDU is earned for every one hour spent in a planned, structured learning experience or activity. There is a range of opportunities available to candidates to acquire CPDUs through training/education programmes and professional activities covering seminar, industrial discussion group, symposium, training course, etc. Appendix 4 gives guidelines for counting CPDUs.

#### 5.6. Cancellations, Rescheduling, No Shows

- 5.6.1. If candidate needs to cancel or reschedule an interview or an examination, he/she must do so no later than 48 hours before the scheduled appointment.
- 5.6.2. If he/she fails to notify the appropriate party within the specified time period and/or fails to meet a scheduled examination appointment, he/she forfeits the full certification fee and will have to pay the full certification fee in order to schedule another interview or examination.
- 5.6.3. There are times when extenuating circumstances (e.g. medical emergency, death in immediate family, illness in immediate family) may prevent a candidate from meeting a scheduled interview or examination appointment, resulting in a no show. Should such a situation arise, the candidate will be asked to provide explanations along with supporting documentation (e.g. accident report, medical documentation, death certificate). If he/she does not make contact within 72 hours following a missed appointment, fees will apply in order to schedule a new appointment. All claims will be reviewed on a case-by-case basis. The candidate is allowed a maximum of one year, from the date of application is approved, to apply for re-examination.



## 6. Appeals

6.1. As a policy, the Certification Board has a procedure for considering appeals against the decisions at the end of each stage of the certification cycle.

### 6.2. Written examination recheck

6.2.1. The marks awarded for a particular section may be subject to a recheck. A recheck is carried out to ensure that there have been no arithmetical or clerical errors, that the marks awarded are appropriate and that all the marks to which the candidate is entitled have been included in the final total.

### 6.3. Professional assessment Review

6.3.1. The grounds for such review must clearly identify the element or elements of the assessment for which the review is sought. It must also specify the grounds on which the review is sought and must contain all information, which the candidate requests to be taken into account in the review.

6.3.2. The grounds for a review are:

- The regulations have not been properly implemented.
- The regulations do not adequately cover the candidate's case.
- Compassionate or medical circumstances related to the candidate's assessment situation, which were made known by the candidate in writing.
- Significant performance related information which the candidate believes was not considered by the examiners.

### 6.4. Appeal for a written examination recheck

6.4.1. A request for a recheck must be received no later than 10 working days after the date of posting of the examination results.

6.4.2. Only a written request for a recheck will be considered.

6.4.3. A fee, as stipulated in the Schedule of Fees, will be charged, which must be included in the request for a recheck. Such fee is non-refundable.

### 6.5. Appeal for a professional assessment review

6.5.1. A request for a review must be received no later than 10 working days after the date of posting of the assessment results.



- 6.5.2. Only a written request will be considered.
- 6.5.3. As the result of the appeal needs to be ratified by the Certification Board, it may take some time before the candidate is notified of the decision.
- 6.5.4. The fee for the professional assessment review is as set forth in the Schedule of Fees. Such fee is non-refundable.
- 6.6. An appeal form for appeal of written examination and professional assessment is available on website [www.hktic.org](http://www.hktic.org).





## 7. **Obligations**

7.1. All certified personnel shall at all times:-

7.1.1. commit to abide with the Regulations as set for the PCSTP scheme;

7.1.2. pay the fees and charges as determined by the Certification Board;

7.1.3. represent honestly and truthfully to any person concerned that he/she is only certified for activities stated in the scope of certification;

7.1.4. endeavour to ensure that the certification granted by the Certification Board is not used in a misleading manner; and

7.1.5. maintain complete integrity and impartiality in all circumstances.

7.2. Details of regulations are given in the document PCSTP01 “Regulations for Professional Certification Scheme for Testing Personnel”.



## APPENDIX 1:

### **Examination syllabus and specimen questions for Certified Testing Technician**

Any aspect of the syllabus may be included in the written examinations or professional assessments. The level of knowledge required by the candidates varies according to the topic. To ensure comprehension by all parties, the following terms have been selected to demonstrate an increasing level of knowledge.

#### **Definitions**

**Outline Knowledge:** The candidate must be familiar with the subject in outline terms. He/She should know that the topic exists and what it is applied to. In the context of methods/techniques the candidate would be expected to know "what it is, what it does" but would not be expected to know the finer points of application of the technique.

**Knowledge:** The candidate must have a working knowledge of the subject and be able to apply it.

**Detailed Knowledge:** The candidate must have a depth of knowledge sufficient to enable him/her to exercise judgment.

#### **Types of questions**

For all multiple-choice questions candidates are required to tick or otherwise indicate the correct answer in the space provided.

Candidates are expected to give a few words, a phrase or a sentence as answers for short answer questions in the space provided.

Candidates are required to explain in depth for open-ended questions.

### **1. Examination syllabus of Certified Testing Technician**

#### **1.1. General requirements (outline knowledge)**

##### **1.1.1. Understanding of ISO/IEC 17025**

- Document control
- Technical records – preparation of force diagram, etc.
- Environmental and testing conditions



- Equipment
- Traceability
- Quality control

1.1.2. Laboratory safety (knowledge)

- General laboratory safety
- Safety in physical testing laboratories
- Proper handling of heavy duty samples or large equipment
- Safety in flammability tests
- Use of fire extinguisher

1.1.3. Integrity management (detailed knowledge)

- Prevention of Bribery Ordinance, Cap. 201
  - Corruption
  - Advantages
- Confidentiality and proprietary right
- Outside Employment
- Use of Company Assets
- Conflict of Interest
- PCSTP01 “Regulations – Professional Certification Scheme of Testing Personnel”
  - Code of ethics in general
  - Code of ethics in relation to employer
  - Code of ethics in relation to public
  - Obligation of Certified Testing Personnel
  - Use of Certification symbol and claim of certification status

1.2. Technical requirements (knowledge)

1.2.1. Understanding on basic measurement methods, related precautions, limitations and mal-practice

- Understanding of load and force, use of test fixture and application of force, abuse test, durability and stability test
- The measurement methods and test standards of the sub-category as given in Appendix 5



1.2.2. Equipment usage (knowledge)

- The criteria for selection of measurement equipment
- Understanding of equipment calibration and measurement traceability, S.I. units
- Conversion between metric and English scale
- Understanding of use of equipment of the sub-category as given in Appendix 6

**2. Specimen examination questions**

2.1. Name three pieces of information that could be identified on a calibration label.

2.2. What test is required if an accessible surface area which is inaccessible to flat surface contact during the drop test?

- (a) Impact test
- (b) Torque test
- (c) Tension test
- (d) Flexure test
- (e) Compression test

2.3. What is the definition of “bunk bed”?



## APPENDIX 2:

### **Examination syllabus and specimen questions for Certified Testing Professional**

#### **1. Competence requirements of Certified Testing Professional**

##### 1.1. Management requirements (Detailed Knowledge)

###### 1.1.1. Manager's Basic Functions

###### 1.1.2. Time Management

###### 1.1.3. Communication in Your Workplace

###### 1.1.4. Team Building – Basic understanding of concepts

###### 1.1.5. Delegation and Management of Generation Y

##### 1.2. Quality requirements

###### 1.2.1. Laboratory Management in compliance with ISO/IEC 17025 (Detailed Knowledge in the following aspects)

- Document control
- Review of contract
- Subcontracting
- Verification of critical consumables e.g.
  - The tape used for sharp edge test
- Difference between correction and corrective actions and control of non-conforming work
- Preventive actions
- Technical records – test result, force diagram
- Conditional rooms and testing environmental conditions
- Traceability (equipment)
- Sample identification and integrity within laboratory
- Quality assurance procedures and plan
  - Method verification
    - Minimum method verification in complying with specification of test standards
    - Difference between verification and validation
    - Participation in proficiency testing programme, interlaboratory comparison programme
    - Verification of continuing competence
    - Drafting of test procedures



- Statistical treatments of data and quality control requirement (detailed knowledge)
  - Basic statistics such as student-t test, normal distribution, standard deviation and ESDM

1.2.2. Laboratory safety (knowledge)

- General laboratory safety
- Safety in physical testing laboratories
- Proper handling of heavy duty samples or large equipment
- Safety in flammability tests
- Use of fire extinguisher

1.2.3. Integrity management (detailed knowledge)

- Prevention of Bribery Ordinance, Cap. 201
  - Corruption
  - Advantages
- Confidentiality and proprietary right
- Outside Employment
- Use of Company Assets
- Conflict of Interest
- CSTP01 “Regulations – Professional Certification Scheme of Testing Personnel”
  - Code of ethics in general
  - Code of ethics in relation to employer
  - Code of ethics in relation to public
  - Obligation of Certified Testing Personnel
  - Use of Certification symbol and claim of certification status

1.3. Technical requirements (knowledge)

1.3.1. Estimation of measurement uncertainty

- Approaches : ISO GUM
- Factors affecting uncertainty
- Reporting of uncertainty and compliance

1.3.2. Requirements of the following general equipment calibration:

- Equipment for one sub-category as given in Appendix 6

1.3.3. Principles of measurement methods

- Measurement techniques and test standards of one sub-category as given in



## Appendix 5

- Rationale in performing the tests

### **Professional assessment syllabus on sector specific tests (only for testing professional)**

- 1 Test standards and compliance requirements
- 2 Principles of test and reporting requirements
- 3 Scope and limitations
- 4 Difference of requirements of different standards such as ISO, EN, ASTM, AS, etc

## **2. Specimen examination questions**

- 2.1. Define correction and corrective actions. Illustrate the difference with an example.
- 2.2. What is the difference between A weighed and C weighed measurements?
- 2.3. A magnetic board containing 25 magnets, is it applicable for EN71-1 clause 8.3 tension test for magnet? If yes, briefly describe the procedures and the requirements concerned?

**APPENDIX 3****Training courses approved by the Certification Board**

Before 1 January 2012, candidate attending the courses as listed below is deemed to satisfy the competence requirements shown.

**1. Certified Testing Technician**

Competence requirements	Course Name	Training Provider
ISO/IEC 17025	Laboratory Management	HKAS/HKTIC/IVE
Laboratory Safety	Laboratory safety	HKTIC/VTC/OSHC/ Labour Department
Use of equipment	Calibration and Verification for Testing Equipment	IVE

**2. Certified Testing Professional**

Competence requirements	Course Name	Training Provider
ISO/IEC 17025	Laboratory Management for organizations implementing ISO/IEC 17025:2005	HKAS/HKTIC/IVE
Laboratory Safety	Laboratory Safety	HKTIC/VTC/OSHC/ Labour Department
Measurement uncertainty	Guide to Expression of Uncertainty of Measurement (ISO GUM)	HKAS/HKTIC/SPACE
	Fundamental of Measurement Uncertainty for Product Testing	IVE
Calibration and use of equipment	Calibration and Verification for Testing Equipment	IVE

HKTIC – Hong Kong testing, Inspection and Certification Limited

HKAS – Hong Kong Accreditation Services

VTC – Vocational training Council

IVE – Hong Kong Institute of Vocation Education

OSHC - Occupational Safety and Health Council





As commence from 1 January 2012, candidate is required to obtain certificates of achievement (satisfactory results in end-of-course evaluation) in approved courses in meeting the competence criteria. Lists of training organizations and training courses are available on the Scheme website [www.hktic.org](http://www.hktic.org).

1. Certified Testing Technician (both quality and technical requirements)

Competence requirements	Course Name	Duration (hours)
Quality requirement	Understanding ISO17025 & laboratory safety	8 hours
Technical requirements	Basic laboratory technique and use of equipment for either toys or hardlines testing	36 hours
Integrity requirements	Ethics	3 hours

2. Certified Testing Professional

Competence requirements	Course Name	Duration (hours)
Management skills	Comprehensive management	14
ISO/IEC 17025 including Quality control	Laboratory management	15
Safety	Laboratory Safety	6
Measurement uncertainty	ISO GUM	21
Basic and specific techniques and use of equipment	Principles of measurement methods, calibration of equipment, method validation and rational in performing the tests requirements for either toys or hardlines testing	40



## APPENDIX 4

### **Guidelines for counting Continuing Professional Development Unit (CPDU)**

Activities	CPDUs
Training course, seminar or workshop on relevant topics (Internal training and workshops on relevant topics are also counted <sup>Note1</sup> )	1 CPDU for candidate attending workshops or seminars which involve each contact hour.
Author or co-author of an article published in a refereed journal	30 CPDUs per article (author) 20 CPDUs per article (co-author)
Author or co-author of an article published in a non-refereed journal	15 CPDUs per article (author) 10 CPDUs per article (co-author)
Lecturer/Speaker on relevant topics at a conference, seminar or formal course.	10 CPDUs per activity
Member or moderator on relevant topics at a conference, symposium, workshop or formal course.	5 CPDUs per activity
Author or co-author of textbook on relevant field	40 CPDUs (author) 20 CPDUs (co-author)
Developer of content for a testing learning courseware.	10 CPDUs per new course
Board or committee member of testing or certification organization	20 CPDUs (board)per annum 10 CPDUs (committee) per annum
Development of new international/regional test standard	30 CPDUs
Verification and implementation of new international/regional test standard <sup>Note2</sup>	10CPDUs
Development of new accredited in-house method (limited to 3 developers) <sup>Note3</sup>	15 CPDUs
Technical visit	1 CPDU per each visit hour



Remarks:

- Note 1: Internal training should be organized in similar structure as external training with training materials, assessment and attendance or assessment certificate.
- Note 2: Organization should maintain evidence in support of competence in performing the tests including documentation (test procedures), satisfactory results in proficiency testing activities (proficiency testing programme, interlaboratory comparison programmes or verification by certified matrix reference materials).
- Note 3: Accreditation should be granted by HKAS (Hong Kong Accreditation Services) or accreditation body having MRA (mutual recognition agreement) with HKAS.



## APPENDIX 5

### Sub-categories and measurement methods of toys and hardlines testing

#### (A) Sub-categories of toys and hardlines testing

##### 1. Toys and children's products tests

###### 1.1 Measurement methods

- 1.1.1 Mass, weight, force and torque measurements
- 1.1.2 Dimensional, angular, roundness, hardness and texture measurements
- 1.1.3 Time measurements
- 1.1.4 Flammability Measurements
- 1.1.5 Temperature measurements
- 1.1.6 Acoustic measurements

###### 1.2 Knowledge on requirements of the following standards

###### 1.2.1 Toys - EN71-1 and 2 and ASTM F963

###### 1.2.2 Children's products

- Stroller ASTM F833, EN1888
- Baby carrier – ASTM F2236, EN13209
- Feeding utensil- EN14372, EN14350-1
- Soother – EN1400-1 and 2

##### 2 Hardlines tests

###### 2.1 Measurement methods

- 2.1.1 Mass, weight, force and torque measurements
- 2.1.2 Dimensional, angular, roundness, hardness and texture measurements
- 2.1.3 Time measurements
- 2.1.4 Flammability Measurements
- 2.1.5 Temperature measurements

###### 2.2 Knowledge on requirements of the standards of two types of the following products:

###### 2.2.1 Candle - ASTM F2601, ASTM F2058, EN15426, EN15493, EN15494, ASTM F2417

###### 2.2.2 Cookwares – CMA (Cookware Manufacturer Association standard), EN12983 -1, ISO8442-1, EN13834



### 2.2.3 Furniture

- Chair – EN581-2, EN12520 , EN1022
- Table – EN581-3, EN12521
- Storage – EN14749
- Bunk bed - ASTM F1427

## (B) Measurement methods of toys and hardlines testing

### 1 Mass, weight, force and torque measurements

- 1.1 Mass and weight principles
- 1.2 Weighing instruments, Classes, selection
- 1.3 Physical influences
- 1.4 Stress and strain, Characteristics & operations of a load cell
- 1.5 Torque concepts and applications, Torque testers calibration
- 1.6 Moment

### 2 Dimensional, angular, roundness, hardness and texture measurements

- 2.1 Linear and angular measurement standards
- 2.2 Angular measurements
- 2.3 Roundness Evaluation Methods
- 2.4 Hardness measurements, scale and conversion
- 2.5 Volume measurements

### 3 Time measurements

- 3.1 Clocks, oscillators and frequency standards
- 3.2 Time scales and international timekeeping
- 3.3 Evaluating the performance of time and frequency standards
- 3.4 Measurement and analysis techniques for time calibrations

### 4 Flammability Measurements

- 4.1 Pre-conditioning requirements
- 4.2 Evaluation of burn rate
- 4.3 Angle of application
- 4.4 Type of fuel and burner
- 4.5 Air flow of testing environment
- 4.6 Temperature zone of a flame



- 5 Temperature Measurements
  - 5.1 Physics of temperature measurement
  - 5.2 Temperature scale, traceability and international standards
  - 5.3 Thermocouple electromotive force, measurement and calibration
  - 5.4 Properties of thermocouples and systematic errors
  
- 6 Acoustics measurements
  - 6.1 Units of Measure used to Quantify Sound, Components of the Ear coupler, Calibration of an Acoustic Meter and its use, Basic Types of Sound Field Microphones
  - 6.2 A weighed and C weighed
  - 6.3 Position and factors affecting the measurements



## APPENDIX 6

### List of equipment required for each sub-category

- 1 Common
  - 1.1 Mass/load
  - 1.2 Balance
  - 1.3 Length measuring devices
  - 1.4 Humidity measuring devices
  - 1.5 Temperature measuring devices
  - 1.6 Time measuring devices
  - 1.7 Torque and tension gauge
  - 1.8 Angular measuring devices
  - 1.9 Fixture
  - 1.10 Sharp point tester
  - 1.11 Impact medium
  - 1.12 Sharp edge tester
- 2 Toys and children's test
  - 2.1 Sound level meter
  - 2.2 Flux meter
  - 2.3 Ohmmeter
  - 2.4 Bite tester
  - 2.5 Flammability tester in compliance with CFR1610
  - 2.6 Flow meter
  - 2.7 Burner



## APPENDIX 7

### References

1. *ISO/IEC 17025:2005* "General requirements for the competence of testing and calibration laboratories"
2. *HKTIC PCSTP01* "Regulations for Professional Certification Scheme for Personnel"
3. *ISO 5725-3: 1994* Accuracy (trueness and precision) of measurement methods and results Part 3 – Intermediate measure of the precision of a standard measurement method
4. *ISO/IEC Guide 98-3:2008* Uncertainty of measurement -- Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)
5. *HOKLAS Supplementary Criteria No. 9* "Toys and Children's Products" Test Category – Toys Physical and Mechanical Tests
6. *Test standard for toys and children's testing*
  - 6.1. Toys
    - 6.1.1. *ASTM F963 - 08* Standard Consumer Safety Specification for Toy Safety
    - 6.1.2. *EN 71-1:2011* Safety of toys - Part 1: Mechanical and physical properties
    - 6.1.3. *EN 71-2:2011* Safety of toys - Part 2: Flammability
  - 6.2. Children's products
    - 6.2.1. *ASTM F833 - 11* Standard Consumer Safety Performance Specification for Carriages and Strollers
    - 6.2.2. *EN1888:2003* Child care articles. Wheeled child conveyances. Safety requirements and test methods
    - 6.2.3. *ASTM F2236 - 10* Standard Consumer Safety Specification for Soft Infant Carriers
    - 6.2.4. *EN13209-1:2004* Child use and care articles. Baby carriers. Safety requirements and test methods.
    - 6.2.5. *EN 14372:2004* Child use and care articles. Cutlery and feeding utensils. Safety requirements and tests
    - 6.2.6. *EN14350-1:2004* Child use and care articles. Drinking equipment. General and mechanical requirements and tests
    - 6.2.7. *EN1400-1:2002* Child use and care articles. Soothers for babies and young children.





General safety requirements and product information

6.2.8. *EN1400-2:2002* Child use and care articles. Soothers for babies and young children.

Mechanical requirements and tests

7. *Test standards for hardlines testing*

7.1. Candle

7.1.1. *ASTM F2601 - 09* Standard Specification for Fire Safety for Candle Accessories

7.1.2. *ASTM F2058 - 07* Standard Specification for Candle Fire Safety Labeling

7.1.3. *ASTM F2417 - 09* Standard Specification for Fire Safety for Candles

7.1.4. *EN15426:2007* Candles. Specification for sooting behavior

7.1.5. *EN15493:2007* Candles. Specification for fire safety

7.1.6. *EN15494:2007* Candles - Product Safety Labels

7.2. Cookwares

7.2.1. *CMA* (Cookware Manufacturer Association standard)

7.2.2. *EN12983 -1:2000* Cookware. Domestic cookware for use on top of a stove, cooker or hob. General requirements

7.2.3. *BS EN ISO 8442-1:1998* Materials and articles in contact with foodstuffs. Cutlery and table holloware. Cutlery and table holloware. Requirements for cutlery for the preparation of food

7.2.4. *EN13834:2007* Cookware. Ovenware for use in traditional domestic ovens

7.3. Furniture

7.3.1. *EN581-2:2009* Outdoor furniture. Seating and tables for camping, domestic and contract use. Mechanical safety requirements and test methods for seating

7.3.2. *EN12520:2010* Furniture. Strength, durability and safety. Requirements for domestic seating

7.3.3. *EN1022:2005* Domestic furniture. Seating. Determination of stability

7.3.4. *EN581-3:2007* Outdoor furniture. Seating and tables for camping, domestic and contract use. Mechanical safety requirements and test methods for tables

7.3.5. *EN12521:2009* Furniture. Strength, durability and safety. Requirements for domestic tables

7.3.6. *EN14749:2005* Domestic and kitchen storage units and worktops. Safety requirements and test methods

7.3.7. *ASTM F1427 - 07* Standard Consumer Safety Specification for Bunk Beds



8. *GUIDEBOOKS FROM LABOUR DEPARTMENT OF HKSAR*

- 8.1. A brief guide to first aid
- 8.2. A brief guide to the Occupational Safety and Health Ordinance
- 8.3. A brief guide to the Occupational Safety and Health Regulation
- 8.4. Code of practice on safety management
- 8.5. Guidelines for good occupational hygiene practice in a workplace
- 8.6. Hazards during chemicals in use and safety guidelines

9. *Standards in relation to laboratory safety*

- 9.1. *BS 7258* Laboratory fume cupboards
- 9.2. *AS 2444* Portable fire extinguishers and fire blankets - Selection and location
- 9.3. *AS/NZS 2243.8* Fume cupboards
- 9.4. *AS/NZS 2243.10* Storage of chemicals



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