



## **DOCUMENT No. IICS-UTTg-17-07**

# **Requirements for the Certification of IICS 5.5 Ultrasonic Thickness Measurement Examiner in accordance with the requirements of ISO 16809:2017 and ASME BPVC Section V SE797 / SE797M:2017**

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Issued under the authority of the Governing Board for Certification  
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IICS is administered by TUV NORD (Malaysia) Sdn. Bhd.

## **FOREWORD**

The International Inspector Certification Scheme (IICS) 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 scope of IICS includes Welding Inspectors, Crane Inspectors, Corrosion engineers, Piping Engineers Plant Inspectors, Non-destructive Testing and other certification schemas.

IICS is managed by certification board of TUV Nord Malaysia Sdn. Bhd., which acts as the governing certification body, in keeping with the requirements of the industries served by the scheme.

The current document covers the Certification of IICS 5.5 Ultrasonic Thickness Measurement Examiner.

## **CERTIFICATION CRITERIA**

The sole criteria for certification are given in the document (and any subsequent amendments) and no other criteria will be applied. Certification is not conditional on the candidate applying for other services from TUV Nord Malaysia Sdn. Bhd., its parent, or any other groups or associations.

### **1 GENERAL**

#### **1.0 Scope**

This document prescribes procedures by which personnel may be examined, and, if successful, certificated for the duties of Ultrasonic Thickness Examiner, as defined in Clause 1.2. The examinations are primarily intended for metallic materials (structures, piping, vessels and boiler etc.).

#### **2.0 Responsibilities of personnel**

Typical areas of work activity of personnel for whom IICS Ultrasonic Thickness Measurement Examiner certifications would be suitable are given below:

Under the supervision of an NDT Supervisor Level 3:

- Application of codes and standards requirements
- Prepare and review work instruction for ultrasonic thickness measurement
- Select the appropriate ultrasonic equipment, couplant and probe to suit measurement and site conditions
- Set-up and calibrate the ultrasonic equipment to suit measurement and site conditions
- Perform basic visual assessment of the test object prior to thickness measurement
- Perform thickness measurement according to written work instruction and record necessary findings
- Preparation of inspection reports

#### **1.3 Qualification Requirements for IICS Certification**

Job responsibilities and experience criteria for examination eligibility as given below are strictly adhered to and enforced.

## IICS 5.5 Ultrasonic Thickness Measurement Examiner

Candidates	Ultrasonic Application Related Experience	Remarks
<ul style="list-style-type: none"><li>School Leaver</li><li>Fresh Graduates</li></ul>	None or Less than 2 years documented experience	Must attend an IICS approved training course
<ul style="list-style-type: none"><li>Welding Foreman/Supervisor</li><li>Welding Inspector</li><li>QA/QC Personnel</li></ul>		Must attend an IICS approved training course
<ul style="list-style-type: none"><li>API 510 / API 570 / API 653 Inspectors</li></ul>		Must attend an IICS approved training course
<ul style="list-style-type: none"><li>Ultrasonic Technician</li><li>Ultrasonic Inspector (AWS, CSWIP, PCN, etc)</li></ul>	Min 2 years documented experience (within recent 3 years)	Encouraged to attend an IICS approved training course, though not compulsory

### 1.3.3 Health/Eyesight

- Recent Eyesight Test Certificate is recommended, as proof of near visual acuity (based on Jaeger J2 Eye Chart or equivalent eye test)

## 2. EXAMINATION PROCEDURE

### 2.1 IICS Examination Format

The examination format for the IICS 5.5 Ultrasonic Thickness Measurement Examiner consists of theoretical and practical examinations, which is designed to test the candidate's knowledge of the syllabus, and applicable codes and standards.

Please refer to Appendix 1 for details of the examination format.

### 2.2 Application for IICS Examination

Candidates will be required to submit an application form. All the information requested must be filled on these forms. No applications can be considered confirmed until receipt of correctly completed documents. Application forms ask for specific details of work experience and must be verified by current employer. Candidate must provide supervisor's contact information of previous employments or projects, which is meant for verification purposes by exam administrator.

In the event of a false statement being discovered on forms, any examination undertaken will be declared null and void.

Candidates proved to have cheated, or found to have attempted to remove or found to have removed examination material in an IICS examination will not be accepted as a candidate for any IICS examination for a minimum period of five years from the date of the examination where cheating, attempt to remove or removal of examination material, was established to have taken place.

Examination may be taken at any approved Test Centers. List is available on request.

### 3. **CATEGORIES OF IICS CERTIFICATION AND FEES**

Candidates may apply for the following certification categories:

<b>Certification</b>			<b>IICS 5.5</b>	
<b>Validity Term</b>			3 years (RM)	3 years (USD)
<b>Certification Fee per Candidate (RM)</b>	<b>Initial</b>	IDC Participant	850	250
		Non-IDC Participant	1,600	400
	<b>Retest</b>		500	150
	<b>Reschedule to another exam window stated by IICS</b>		NIL	
	<b>Reschedule to a preferred exam window</b>		1,600	250
	<b>Upgrade</b>		NIL	
	<b>3-year Renewal</b>		500	150
	<b>6-year Renewal</b>		850	250

#### 3.1 **Initial Certification**

Refers to candidate's first attempt in taking the particular IICS Certification.

#### 3.2 **Retest**

Refers to candidate who fail in the initial certification. Candidate may attempt a maximum of two retests within 12-month period from the first scheduled examination date.

#### 3.3 **Three-Year Renewal**

Refers to IICS Certificate holder who needs to renew his/her certificate before its expiry.

Candidate does not need to sit for an examination. Candidate has to demonstrate that he/she has maintained his/her competence by providing evidence of continuous work activity in ultrasonic inspection. This can be satisfied by submitting a log sheet of relevant work activity covering minimum 2 years' documented experience within the recent 3 years.

The certificate will not be renewed without further test if a substantiated complaint is notified by the Governing Board during the period of its validity. Further instruction and retest may then be required.

#### 3.4 **Six-Year Recertification**

Refers to IICS Certificate holder who needs to be recertified beyond six years from the initial examination (or 3 years from a previous three-year renewal).

Candidate has to demonstrate that he/she has maintained his/her competence by providing evidence of continuous work activity in ultrasonic inspection. This can be satisfied by submitting a log sheet of relevant work activity covering minimum 2 years' documented experience within the recent 3 years.

If qualify for 6-year recertification with the complete application, candidate will be required to take an online examination. The 6-year recertification online examination for Ultrasonic Thickness Measurement Examiner consists of 30 multiple choice questions.

Note: As a guide, 'reasonable continuity' in any given six year period means that absences from work for which the certificate was granted should not exceed one year in one or several periods.

## **4. IICS CERTIFICATION POLICIES**

### **4.1 Payment Policy**

- a) Applications will not be processed until payment is received and applied.
- b) Applicants are responsible for all taxes, banking or other service fees, including all applicable withholding taxes.
- c) Penalty fee of RM 150 will be imposed on application and payment received after the examination deadline.

### **4.2 Refund Policy**

- a) All refund requests must be submitted to the approved test center by e-mail within three (3) months from the date of payment.
- b) For refund requests made before the application deadline, you will be refunded the initial New Application fee minus RM 150 for processing.
- c) For refund requests made after the application deadline, you will be refunded 50% of the initial New Application fee.
- d) If you are found to be unqualified, you will be refunded the initial New Application fee minus RM 150 for processing.
- e) Reschedule application fees are non-refundable.
- f) Refunds will not be issued under the following circumstances:
  - If request is made three months or more after your initial payment date
  - If request is made less than five days before a scheduled exam appointment, or any time after a scheduled appointment
  - If you did not show up for your exam
  - If you have already taken your exam
- g) Refund requests have to come directly from the paying party, either the candidate or the organization that paid the examination fee (if not paid by candidate).

### **4.3 Examination Policies and Notifications**

- a) Examination Cycle
  - Each candidate is allowed 12 consecutive months to pass an examination.
  - This 12-month period begins with the first scheduled examination date.
- b) Retest
  - Candidate who does not pass the initial examination may attempt a maximum of 2 retests (on those parts of the examination in which success was not achieved) within the allowable 12-month period.
  - If candidate is unsuccessful within the allotted 12 months, he/she is required to re-take the full IICS approved training course, followed by a new application for the examination.
- c) Reschedule
  - If candidate cannot attend the examination as scheduled, he/she has to notify the approved testing center at least 2 weeks prior to examination date.
  - Reschedule fee of RM 150 apply and is non-refundable.
- d) Examination Results
  - Examination results will be emailed to candidate within 2-4 weeks after the examination date.
- e) Certificate of Proficiency and Certified Personal ID Card
  - A paper certificate and personal ID Card will be issued to the candidate who passed the examination.

- The items will be mailed out to the candidate or the organization that paid the examination fee (if not paid by candidate), approximately 2-4 weeks from announcement date of examination results.
  - Penalty fee of RM 350 will be imposed on requests for reissuance of Certificate of Proficiency and/or Certified Personal ID Card.
- f) Term of Certification
- Certification is valid for three years.
- g) Renewal or Recertification
- Renewal or Recertification of IICS Certificate must take place not later than 30 days after the date of expiry.
  - It is the certificate holder's responsibility to ensure that renewal takes place at the appropriate time.
  - Penalty fee of RM 150 will be imposed on renewal or recertification application received more than 30 days after the date of expiry.

#### **4.4 Grievances and Appeals**

- a) Appeals against failure to certify or against non-renewal of the certificate may be made by the inspector or the employer upon application in writing to the Governing Board.
- b) The contents of a failed exam will not be disclosed or returned to any candidate.
- c) An aggrieved party in a dispute which considers itself to have reasonable grounds for questioning the competency of an IICS qualified person may petition the Governing Board for non-renewal of the certificate. Such a petition must be accompanied by all relevant facts, and if in the opinion of the Board an adequate case has been presented, a full investigation of the circumstances under dispute will be initiated. If the petition is substantiated to the satisfaction of the Board, the certificate will not be renewed without further test.

### **5. RECORDS**

TUV NORD (Malaysia) Sdn. Bhd. maintains records of successful and unsuccessful candidates. These records are accessible to the Governing Board or its nominees at all reasonable times.

### **6. REFERENCES**

ISO 16809:2017: Non-destructive Testing – Ultrasonic Thickness Measurement

ASME Section V Article 23, SE 797 / SE797M Edition 2017 Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse Echo Contact Method

## 7. **ADDRESSES**

For further general information contact:

**TUV NORD (Malaysia) Sdn. Bhd.**

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For specific information on examinations and tests and arranging for them to be carried out, please contact the **approved Test Center(s)**:

**IDC Training House Sdn. Bhd.**

No 7, Unit 8, Jalan Industri PBP 3,  
Taman Industri Pusat Bandar Puchong,  
47100 Puchong,  
Selangor, MALAYSIA

Phone: +60 (3) 8061 5126 / 8061  
Email: [info@idc-training.com](mailto:info@idc-training.com)

Fax: +60 (3) 8068 7720  
Website: [www.idc-training.com](http://www.idc-training.com)



## **Examination Format for the Certification of IICS 5.5 Ultrasonic Thickness Measurement Examiner**

**APPENDIX TO DOCUMENT NO. IICS-UTTg-17-07**

Appendix 1: Examination Format for IICS 5.5 Ultrasonic Thickness Measurement Examiner



## APPENDIX 1: EXAMINATION FORMAT & TIMING

### IICS 5.5 Ultrasonic Thickness Measurement Examiner

Examination Format	Time Allowed	Details
<b>Theoretical Paper (Closed Book)</b>	1 hour 15 minutes	<b>50 multiple choice questions</b> Ability to understand the theory and behavior of ultrasound Ability to understand the working principal of ultrasonic testing equipment Ability to evaluate the work order with the applicable codes <ul style="list-style-type: none"><li>ASME BPVC Sect. V SE-797 / SE-797M D1.1: 2017, Structural Welding Code</li><li>ISO 16809:2017 Non-destructive testing – Ultrasonic thickness measurement</li></ul>
<b>Instruction Writing</b>	1.5 hour	Ability to prepare a specific work instruction on steps to assess and perform ultrasonic thickness measurement of a given test piece
<b>General Practical Examination</b>	1 hour	Thickness measurement of 4 different bare materials Thickness measurement of 4 different coated materials
<b>Specific Practical Examination</b>	4 hours	Time Allowed: 1.5 hours <ul style="list-style-type: none"><li>2 lamination plates</li></ul> Time Allowed: 2.5 hours <ul style="list-style-type: none"><li>3 corrosion plates</li></ul>

**Pass mark is 70%. If any individual part passing mark couldn't get achieved, the individual part which has been failed shall be retaken.**