

WES 8103 : 2019

# WES

## Standard for Certification of Welding Coordinators

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**Prepared by JWES (the Welding Coordinators Certification Committee)**

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**Under the Direction of JWES Standard Committee**

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# Standard for Certification of Welding Coordinators

## 1. Scope

This standard shall be used to regulate the certification of welding coordinators on the basis of the welding coordination personnel prescribed in Subclause **B6.3** of **Annex B** or Subclause **C6.3** of **Annex C** of **JIS Z 3400** (corresponding to Subclause **7.3** of **ISO 3834-2** or Subclause **7.3** of **ISO 3834-3**) and **JIS Z 3410 / ISO 14731**.

## 2. Normative reference

The following standards including Annexes shall constitute part of this standard by way of being referred to in this standard.

**JIS Z 3400:2013 / ISO 3834s:2005**, Quality requirements for fusion welding of metallic materials

**JIS Z 3410:2013 / ISO 14731:2006**, Welding coordination — Tasks and responsibilities

## 3. Terms and definitions

Definitions of important terms used in this standard shall be as given in the following.

### 3.1

#### competence

The capability of the welding coordinators that is represented by his/her knowledge, job competence and experience being satisfied in conformity with the requirements of this standard

### 3.2

#### the Society

The Japan Welding Engineering Society

### 3.3

#### certification

Action by the Society, demonstrating that the competence of the welding coordinator is sufficiently in conformity with this standard

### 3.4

#### certificate of competence

The document granted by the Society to the certified welding coordinator

### 3.5

#### applicant

Person who seeks to obtain the certification of competence from the Society

### 3.6

#### registered welding coordinator

The welding coordinator who has been accepted in the examination and registered by the Society

## 3.7

**surveillance**

The Society's act of confirming, by the document submitted by registered welding coordinator, that registered welding coordinator successively satisfies the requirements of this standard

## 3.8

**recertification**

The capability of the registered welding coordinator being successively certified after the validity of his/her certificate with the assessment specified in this standard by the Society

## 3.9

**Credit System**

The system by which the registered welding coordinator may be exempted from the recertification examination (including the seminar for recertification and exercises), if he/she can submit the documentary evidence and verify that the total score calculated by the points given to each activity indicated in **Table B.1** of this **Annex** is 36 points or more within the latest five years (60 months) before expiring the registration period

## 3.10

**manufacturer**

Person or organization responsible for the welding production

**4. Levels of certification of welding coordinators**

- a) The levels of certification of welding coordinators (hereinafter referred to as the level(s)) of certification of welding coordinators shall be determined by the assessment and the examination stipulated in this standard.
- b) The levels shall be classified into Senior Welding Engineer, Welding Engineer, and Associate Welding Engineer depending on the task, responsibility, technical knowledge and job competence of the welding coordinators. (See **Table 1**)

**Table 1. Tasks, responsibilities, technical knowledge and job competence of welding coordinators**

Level	Tasks and responsibilities	Technical knowledge and job competence
Senior Welding Engineer	All activities prescribed in Subclauses 4.1 and 4.2 in <b>JIS Z 3410 (ISO 14731)</b> . All activities allocated by the manufacturer described in <b>Annex B</b> of <b>JIS Z 3410 (ISO 14731)</b>	Comprehensive technical knowledge on welding described in Subclauses 6.1 and 6.2 a) of <b>JIS Z 3410 (ISO 14731)</b> , and job competence able to manage / and coordinate welding production and process control.
Welding Engineer		Specific technical knowledge on welding described in Subclauses 6.1 and 6.2 b) of <b>JIS Z 3410 (ISO 14731)</b> , and job competence able to coordinate welding production and process control
Associate Welding Engineer		Basic technical knowledge on welding described in Subclauses 6.1 and 6.2 c) of <b>JIS Z 3410 (ISO 14731)</b> , and job competence able to supervise welding production and process control.

**Note** In **JIS Z 3410**, for all tasks and responsibilities assigned by the manufacturer, it is prescribed in 6.1 that the responsible welding coordinators shall be able to demonstrate general technical knowledge and

specialized technical knowledge in welding and allied process, and in 6.2 that the responsible welding coordinator shall be allocated from one of the following groups (levels), depending on the nature and / or complexity of the production.

- (a) Comprehensive
- (b) Specific
- (c) Basic

## 5. Access conditions and assessment of access conditions

### 5.1 Access conditions

The applicants for certification shall have the following welding and related work experience as in **Table 2**.

If the applicants have less than the relevant welding and related work experience as in **Table 2**, they shall meet the required years of experience in welding engineering / production as in **Table 2** within 5 years after success in the written examination.

**Table 2. Access conditions**

Academic career or certification		Required years of experience in welding engineering / production		
		Senior Welding Engineer	Welding Engineer	Associate Welding Engineer
1	Graduate school of University / Institute graduate of master degree, or University / Institute graduate of bachelor degree (science or engineering)	3 (1)	2 (1)	1
2	Graduate school of University / Institute graduate of master degree, or University / Institute graduate of bachelor degree (other than science or engineering)	6	4	2
3	2-year college graduate (science or engineering), or Graduate of college of technology	6 (5)	4 (3)	1
4	Graduate of science or engineering special college, or Technical high school graduate	—	7	2
5	High school graduate (other than technical one)	—	8	4
6	Academic career other than 1 to 5 above	—	—	7
7	Welding Engineer certificate holder	3	—	—
8	Associate Welding Engineer certificate holder	—	3	—

**Note 1** Required years of experience in **Table 2** are the minimum requirement.

**Note 2** The number in a parenthesis is applied to the University / Institute / College regarded as one majoring in welding engineering.

**Note 3** Required years of experience in welding engineering / production shall be the years in which the applicant has been fully engaged in the welding-related jobs. If the applicant has not been fully engaged in the welding-related jobs, decision shall be made based on the actual state of the job.

**Note 4** The required years of experience after graduation from the school (1~5) or after granted the certificate (7, 8) shall be required as the years of experience.

**Note 5** A graduate of university/institute of science or engineering as in 1 includes a graduate of a college of technology/engineering who has completed the graduate course of two years and a bachelor's degree certified by National Institution for Academic Degree and University Evaluation.

**Note 6** The academic career of the graduate of science or engineering special college given in 4 shall be approved only if the applicant is a graduate from a high school.

## 5.2 Assessment of access conditions

The Society shall assess the application documents submitted by the applicants to examine whether they are eligible in the light of the requirements certification. The assessment of the application documents shall also judge whether the applicants can be exempted from the oral examination stipulated in 6.2 of this standard. The access conditions shall be assessed in the following times:

- a) If the applicants who have the required years of experience as in **Table 2** take the written examination, it is the time the applicants have submitted the application documents for the written examination.
- b) If the applicants who have less than the required years of experience as in **Table 2** (refer to **Annex A**) have taken the written examination and passed it, it is the time the applicants have submitted the application documents for the oral examination.

## 6. Examinations

### 6.1 Contents of examination

The Society shall conduct examinations to assess if the applicants possess sufficient knowledge and job competence to perform the tasks and responsibilities stipulated in clause 4 of **JIS Z 3410 (ISO 14731)**. The examinations shall consist of the written examination and the oral examination. The candidates who have succeeded in the written examination may proceed to enter the oral examination. The main fields of technical knowledge to be examined shall be as follows:

- a) Welding processes and equipment
- b) Materials and their behavior during welding
- c) Construction and design
- d) Fabrication and application engineering

### 6.2 Exemption from oral examination

Those applicants for Welding Engineer and Associate Welding Engineer who have completed the training courses that the Society has approved as one of the suitable courses for education and training in advance may be exempted from the oral examination in spite of the stipulation of 6.1.

However, the Society shall not exempt the oral examination to those applicants, including holders of the certificate of completion of the training courses, whose competence, the Society considers, cannot be assessed by the result of assessment of the access conditions in the application documents and by only the result of the written examination. Also this exemption shall not be applied to the applicants who have taken the written examination before having the required years of experience as in **Table 2**.

## 7. Acceptance criteria

Those who satisfy the following requirements of a) to g) shall be accepted.

- a) The examinees for Senior Welding Engineer who have passed in the both written examinations of Category I and Category II shall be accepted in the written examinations and may proceed to the oral examination. A candidate who holds the certificate Welding Engineer shall be exempted from taking the written examination of category I.
- b) For the written examination of Category I for Senior Welding Engineer, examinees whose score is 70 % or more of the full marks shall be accepted.
- c) For the written examination of Category II for Senior Welding Engineer, examinees whose score is 70 % or

more of the full marks, and 40 % or more in each question shall be accepted.

- d) For the written examination for Welding Engineer, examinees whose score is 70 % or more of the full marks shall be accepted.
- e) For the written examination for Associate Welding Engineer, examinees whose score is 60 % or more of the full marks shall be accepted.
- f) Being judged also by the oral examination as possessing sufficient technical knowledge and job competence, in case the oral examination has been conducted.
- g) If an applicant takes the written examination before having the required years of experience as in **Table 2**, the term of validity of his / her success shall be five years from the date of issuing the notification to success or failure.

## **8. The term of registration, validity of certificate of competence and ethical imperative**

### **8.1 The term of registration**

The term of registration of certification shall be five years.

### **8.2 Grant of certificate**

The Society shall grant certificate of competence (hereinafter refer to as the certificate) to those who have passed the examinations and have completed specified procedures.

### **8.3 The term of validity of certificate**

The certificate shall initially be valid for two years. If the certificate holder undergoes surveillance stipulated in

**8.4** within this period, and is confirmed to be maintaining the job competence, the validity of the certificate shall be extended for the residual duration of registration.

### **8.4 Surveillance**

The Society shall conduct surveillance based on the application of registered welding coordinators within six months prior to the expiry of validity of the certificate. Surveillance shall be done by way of checking the written evidence of job engagement. If deemed necessary, interview or other appropriate means shall be taken for confirmation.

### **8.5 Invalidation of certificate**

The certificate shall lose its validity after expiry.

### **8.6 Ethical imperative**

Registered welding coordinators shall conform to the social norms, relevant laws, regulations and rules on performance of their tasks.

## **9. Invalidation of certification**

Certification shall lose its validity when either **a)** or **b)** or **c)**.

- a) The certificate has expired.
- b) The Society decides to revoke his/her certification due to dishonest act in the process from application to certification
- c) In case the registered welding coordinator has violated the compliance rules or is suspected of violations due to the intentional misuse of certificate, the dishonest act on business, the gross negligence, the Society make the fact-finding survey based on interview to the registered welding coordinator and/or the person concerned and finally decide to revoke his/her certification taking into account the survey results.

**10. Assessment for recertification**

- a) Registered welding coordinators who wish to obtain the recertification shall apply for the assessment for recertification within one year before the expiry date of registration and before invalidation of the certification.
- b) The assessment for recertification shall be conducted by the ways of **1)** and **2)**.
  - 1) Assessment of the submitted application document for renewal of certification
  - 2) Recertification examination (which includes seminar related to the latest welding technology)
- c) When the Society assessed necessary, taking into account the results of the assessment of **1)** and the examination of **2)**, a secondary assessment may be added. The secondary assessment procedure shall be stipulated separately.
- d) The Society may implement a structured Credit System for the assessment of recertification as an alternative to the recertification examination of **10 b) 2)**. (refer to **Annex B**)
- e) Upon passing the assessment for recertification described in **10 b)** and **c)** above, and the submission of the registration form to the Society before the required date, the welding coordinators shall be registered as newly certified after the expiry of the previous registration.



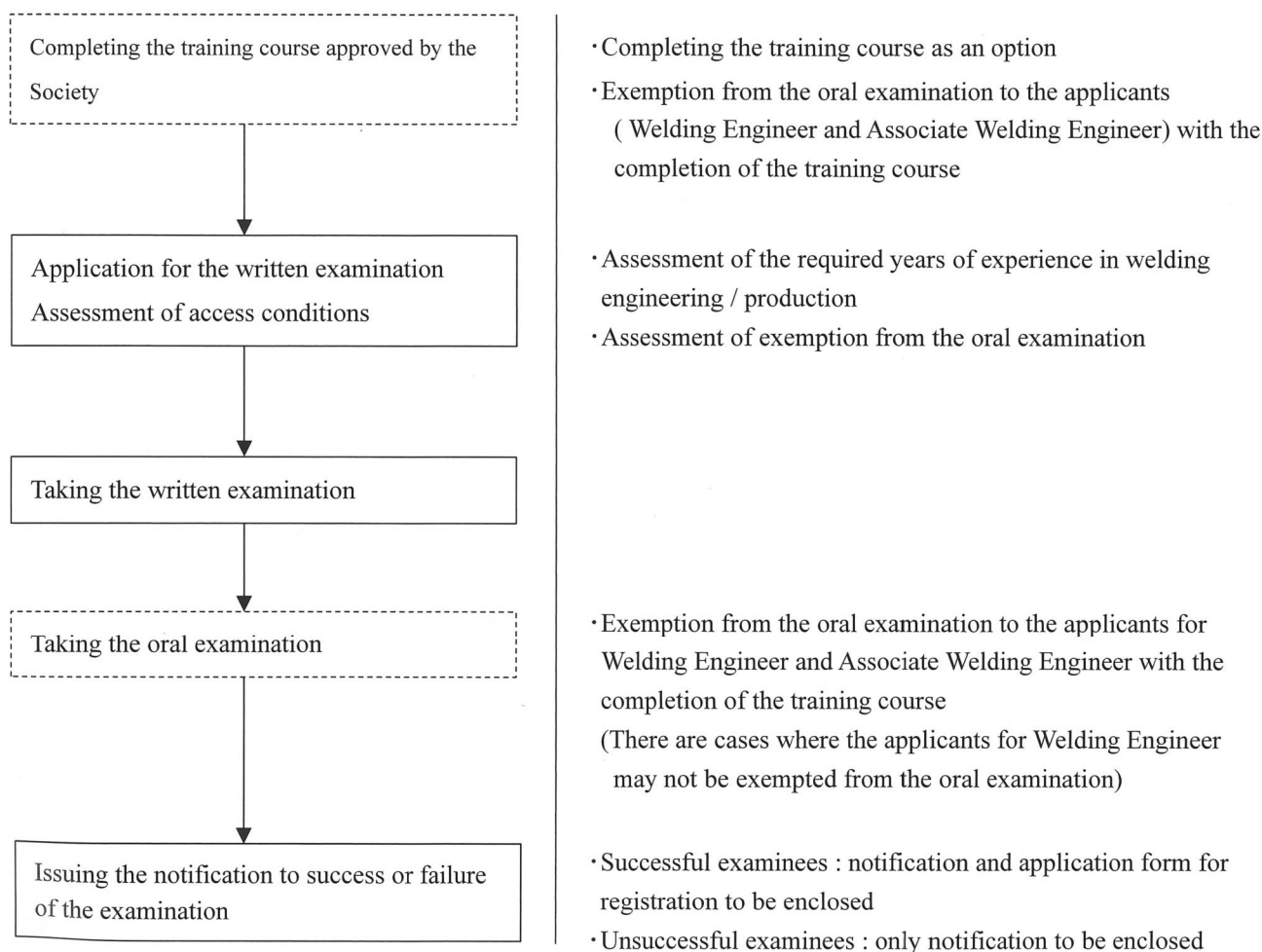
## Annex A

### (Informative)

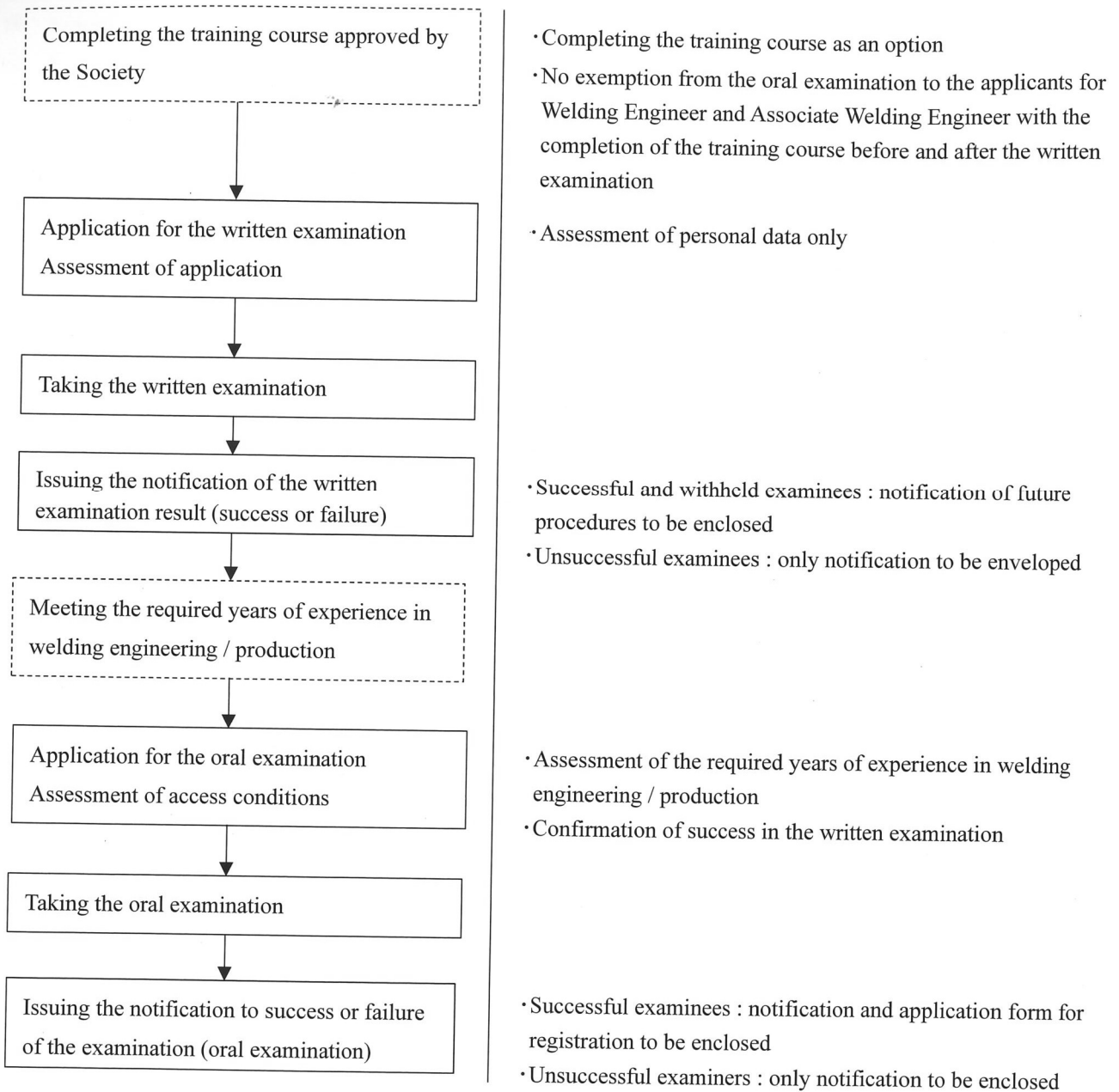
#### Flow of examination application including the assessment of access conditions

##### A.1 Flow of examination application

The times for assessing the access conditions depend on whether the applicant have the relevant welding and related work experience as in Table 2 or not. The flows of examination application including the assessment of access condition are shown in Fig.A.1 and in Fig.A.2. [ refer to 5.2 of this standard ]



**Fig.A.1 Flow of examination application for the applicants who have the required years of experience in welding engineering / production**



**Fig.A.2 Flow of examination application for the applicants who have less than the required years of experience in welding engineering / production**

## **Annex B**

### **(Normative)**

#### **Guideline for Credit System**

##### **B.1 Purpose and scope of the Credit System**

Applicant who can submit the documentary evidence and verify that the total score calculated in accordance with the **Table B.1** are 36 points or more within the latest five years (60 months) before expiring the registration period may be exempted from the recertification examination (including the seminar for the recertification test and exercises) by submitting the Application Form of Credit System [Refer to **10 d)**].

##### **B.2 Application**

Applicant who wants to apply the Credit System shall submit the Application Form of Credit System with the Application Form of Recertification. He/she shall also submit the necessary documents which evidently prove the activities involved and being accountable in accordance with the **B.3**.

##### **B.3 Documentary evidence**

**B.3.1** Document or certificate signed by the representative of organization of a technical seminar or conference for attendance or presentation of the technical paper or chairpersonship.

**B.3.2** Copy(ies) of publishing paper or writing book on welding or related technology.

**B.3.3** Document issued by the representative of business consignment organization as that proving the consultation related to welding technology ( including the business consignment contents and engagement time)

##### **B.4 Assessment and notification of assessment**

Recertification committee which is given the terms of reference of assessment by the Qualification committee of welding coordinators shall make an assessment the application package. Recertification committee may contact by telephone or mails, or meet to an applicant if necessary.

The result of the assessment shall be notified to the applicant.

##### **B.5 Appeal and complaint**

Applicant who is not able to accept the results of the assessment described in **B.4** may submit the application form for the appeal describing the reason to the Society.

**Table B.1 : Credit System for Recertification**

Activity	Points
(1) Attending as a lecturer or a chairperson to a technical meeting or conference organized by a society, institution or school which is relating to welding technology <sup>1)</sup> . Meeting <sup>2)</sup> shall be including a seminar, symposium, study group meeting, research committee, discussion meeting, technical visit, shop tour and so on.	3 points per one contact hour <sup>3)</sup>
(2) Preparing and publishing papers on welding or related technology in official journals of national or international technical societies upon request or peer-reviewed technical publication <sup>5)</sup> , <sup>6)</sup> .	18 points per one paper
(3) Authoring or presenting paper at the meeting or conference defined in the above (1) <sup>4)</sup> , <sup>5)</sup> .	12 points per one paper
(4) Attendance as an audience to the meeting or conference defined in the above (1) <sup>5)</sup> .	1 point per one contact hour <sup>3)</sup> .
(5) Official consultant of welding or relating technology <sup>1)</sup> to an organization or industry of not belonging to his/her company <sup>7)</sup> . The consultation made as a usual activity shall not be counted.	1 point per one contact hour <sup>3)</sup> , <sup>8)</sup> .
(6) Contributing as a social activity of welding technology <sup>1)</sup> , or making efforts by him/herself to keep abreast of technology relating to welding technology. Each shall be verified by a third party organization. Receiving a recognition relating to welding technology from a society or institution. Contribution to standardization or activities of a society or institution of welding and relating technology <sup>4)</sup> , <sup>6)</sup> .	Determined separately <sup>9)</sup> .
<b>Footnotes :</b> <p><sup>1)</sup> Welding and relating technology is limited to the fields of the knowledge and competence that are required for welding coordinator to possess.</p> <p><sup>2)</sup> The applicable meetings are the training courses for Welding Coordinators and Certification for Inspection of Welds (CIW). The inapplicable meetings are in-company workshops, the training course for Steel Column Robotic Welding Operator, the supervision and examination of welder qualification test, the practical and the theoretical training courses for welder, etc..</p> <p><sup>3)</sup> 50 minutes actual contact hour may account as one (1) hour.</p> <p><sup>4)</sup> In case of co-authoring, individual must have contributed at least 10 % of the content of the manuscript. In case of invention or receiving an award of more than one person, individual must have contributed at least 10 % of the content.</p> <p><sup>5)</sup> In article (2), authoring without peer-reviewed or voluntarily authoring shall be applied article (3).</p> <p><sup>6)</sup> Studying, investigating or preparing hours for consulting may be including into contact hour, but traveling hour shall not be including.</p> <p><sup>7)</sup> Excluding any consultation to the same group or relative company.</p> <p><sup>8)</sup> Research and preparation time may be included but travel and transportation time not included.</p> <p><sup>9)</sup> The Recertification Committee conduct adequacy evaluation for the activities defined in (6) of this table, require to submit the additional documentary evidence if necessary and perform a comprehensive evaluation of an applicant by determining the relevant point. Social contribution may include the patent establishment which is beneficial for the welding industry.</p> <p>In case the most outstanding report among essay reports submitted by the Senior Welding Engineer (SWE) applicant at assessment for recertification may be published later in JWES WE-COM based on the recommendation of the examiner, the relevant SWE applicant will be able to obtain 36 points at next assessment for recertification.</p>	

# WES

Standard for Certification of Welding Coordinators

## 銲接管理者認證標準

WES 8103:2019

由

台灣銲接協會

翻譯

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## 銲接管理者認證標準

### 1.適用範圍

本標準基於JIS Z3400附錄B之B6.3或附錄C之C6.3(對應ISO 3834-2之7.3或ISO 3834-3之7.3)，以及JIS Z 3410/ISO 14731有關銲接管理者的規定，制定銲接管理者認證的規章。

### 2.引用標準

本標準引用下列標準，這些標準及其附錄皆構成本標準的一部分。

JIS Z 3400:2013/SO 3834s:2005 金屬材料熔融銲接的品質要求

JIS Z 3410:2013/ISO 14731:2006 銲接管理-任務與責任

### 3.用語及定義

本標準使用之重要用語及其定義如下所列：

#### 3.1 勝任能力(competence)

銲接管理者的專業知識、工作能力和經驗所展現的能力符合本標準的要求。

#### 3.2 協會(the Society)

指日本溶接協會。

#### 3.3 認證(certification)

由協會執行，證明銲接管理者的能力充分符合本標準的要求。

#### 3.4 能力證明書(certificate of competence)

由協會授予銲接管理者以證明其能力之文件。

#### 3.5 申請人(applicant)

向協會申請能力認證之人員。

#### 3.6 登錄銲接管理者(registered welding coordinator)

經考試合格且被協會登錄之銲接管理者。

#### 3.7 監督(surveillance)

協會的確認作為，由登錄銲接管理者提交的文件，確認其滿足本標準的要求。

#### 3.8 再認證(recertification)

登錄銲接管理者在其能力證明書有效期到期後，依本標準有關評估之規定，持續獲得協會認證。

#### 3.9 積點制度(Credit System)

登錄銲接管理者提交展延登錄效期申請前5年內的文件證據，依附錄之表B.1計算點數達36點(含)以上，可以豁免再認證考試(包括再認證研討會和練習)的制度。

#### 3.10 製造廠家(manufacturer)

對銲接生產負責任的人員或機構。

### 4. 銲接管理者認證的等級

(a) 銲接管理者認證的等級應依本標準之規定藉由審查和評估考試做決定。

(b) 銲接管理者的等級依任務、責任、技術知識和工作能力區分為資深銲接工程師、銲接工程師和副銲接工程師(參見表1)。

表1 銲接管理者的任務、責任、技術知識和工作能力

等級	任務和責任	技術知識和工作經驗
資深銲接工程師 (SWE)	<b>JIS Z3410 (ISO 14731) 4.1</b> 和4.2規定的所有活動；以及其附錄B敘述由製造者分派的所有活動	具備 <b>JIS Z 3410 (ISO 14731) 6.1和6.2(a)</b> 所規定關於銲接的廣泛技術知識，以及能夠管理和協調銲接生產、製程控制的工作能力。
銲接工程師 (WE)		具備 <b>JIS Z 3410 (ISO 14731) 6.1和6.2(b)</b> 所規定關於銲接的特定技術知識，以及能夠協調銲接生產、製程控制的工作能力。
副銲接工程師 (AWE)		具備 <b>JIS Z 3410 (ISO 14731) 6.1和6.2(c)</b> 所規定關於銲接的基礎技術知識，以及能夠指導銲接生產、製程控制的工作能力。

註：在JIS Z 3410，有關製造廠家賦予之任務和責任，6.1節規定有責任銲接管理者應能展現銲接及相關製程的一般技術知識和特殊技術知識；在6.2節規定有責任銲接管理者應依生產的特性及/或複雜度，界定為下列等級之一。

- (a)綜合級
- (b)特定級
- (c)基礎級

## 5. 參加資格及其評鑑

### 5.1 參加資格

認證申請人應具備表2所列銲接及其相關工作經驗。若申請人銲接及其相關工作經驗少於表2所列，應在筆試通過後的5年內，滿足表2之銲接工程/生產製造工作年資要求。

### 5.2 參加資格的評鑑

協會應評鑑申請人提交的申請文件，審查他們是否符合認證的要求；申請文件的評鑑亦應裁決申請人是否可豁免本標準6.2節規定的口試。參加資格評鑑應在下列時間點實施：

- (a)若參加筆試申請人具備表2要求之經驗年資，且申請人已提交筆試申請文件時。
- (b)若申請人經驗年資少於表2(參閱附錄A)之要求，參加筆試並通過，當申請人已提交口試申請文件時。

表2 參加資格

學歷或認證		銲接工程/生產製造工作年資要求		
		資深銲接工程師(SWE)	銲接工程師(WE)	副銲接工程師(AWE)
1	大學/學院碩士學歷畢業，或大學/學院學士學歷畢業(科技或工程相關系所)	3 (1)	2 (1)	1
2	大學/學院碩士學歷畢業，或大學/學院學士學歷畢業(科技或工程以外相關系所)	6	4	2
3	二年制專科學歷畢業(科技或工程相關科系)或技術學院學歷畢業	6 (5)	4 (3)	1
4	科技或工程專科學院學歷畢業或高級職業中學畢業	-	7	2
5	高級中學畢業(高職以外)	-	8	4
6	(1)至(5)以外的學歷	-	-	7
7	銲接工程師(WE)證書持有者	3	-	-
8	副銲接工程師(AWE)證書持有者	-	3	-

註：1 表2所列為最低經驗年資要求。

2 括弧中數字適用於大學/學院/專科主修銲接工程畢業生。

3 銲接工程或生產製造經驗年資，必須為認證申請人全職參與的銲接相關工作，如果認證申請人非全職參與銲接相關工作，應依工作實際狀況來做認定。

4 經歷年資是指從學校畢業後的經驗年資要求(1~5)或取得認證後(7~8)的經驗年資。

5 在(1)所述之大學或工程科技學院畢業生，包括科技或工程學院修業二年之畢業生獲政府學位主管機構與大學評鑑認證之學士學歷。

6 即若申請人是來自高級中學畢業生，在(4)所述之科技或工程專科學院的畢業學歷應被認可。

## 6. 考試

### 6.1 考試的內容

協會應實施考試以評估申請人是否具備足夠的知識和工作能力以履行JIS Z 3410(ISO 14731)規定的任務和責任，考試應包括筆試和口試，通過筆試的應試者可進入下階段的口試。考試之技術知識的主要領域包括如下：

- (a) 銲接製程和設備
- (b) 材料及其銲接過程中的現象
- (c) 結構與設計
- (d) 製造與應用工程

### 6.2 口試的豁免

銲接工程師和副銲接工程師申請人完成協會認可教育訓練課程的前提下，可豁免6.1節規定的口試。然而，在申請人雖有完成訓練課程證書，但協會審查人員無法從其資格申請文件做出勝任能力的評判，以及僅有筆試結果的狀況，仍不得免除口試。除上述狀況外，豁免口試亦不適用於不具備表2要求經驗年資之筆試應試人。

## 7. 合格標準

滿足以下(a)~(g)的要求應視為合格。

- (a) 資深銲接工程師的考試，通過類型I及類型II的筆試視為通過筆試，可以進入下階段的口試。擁有銲接工程師證書的候選人應可免除類型I的筆試。
- (b) 資深銲接工程師類型I筆試的合格基準為總分的70%(含)以上。
- (c) 資深銲接工程師類型II筆試的合格基準為總分的70%(含)以上，且每一問題須答對40%(含)以上。
- (d) 銲接工程師的筆試，合格基準為總分的70%(含)以上。
- (e) 副銲接工程師的筆試，合格基準為總分的60%(含)以上。
- (f) 口試的實施也包含是否具有足夠技術知識、工作能力的評判。
- (g) 不具備表2要求經驗年資之筆試應試人，其通過筆試之成績從通知簽發日期起算保留5年。

## 8. 登錄期間、能力證書的有效期限與職業倫理條款

### 8.1 登錄期間

證書登錄期間為5年。

### 8.2 證書授予

協會須頒發能力證明書(以下提及以證書表示)予通過考試和完成規定程序的申請人。

### 8.3 證書有效期

證書起始有效期為2年，在這期間證書持有人依規定接受監督，且被確認持續具有工作勝任能力，證書的有效期應展延至登錄期限。

### 8.4 監督

協會應實施監督，針對登錄銲接管理者在其證書有效期屆滿前6個月內提出的申請進行審查。監督方式為核對參與相關工作的書面證據，如果有必要，應採用面試或其他適當方式以進行確認。

### 8.5 證書失效

證書在其有效期屆滿後失效。

### 8.6 職業倫理條款

登錄銲接管理者應確認達成其任務之社交規範、相關法律、法規和規約。

## 9. 認證的失效

當以下(a)或(b)或(c)狀況發生時，認證失效。

- (a) 證書過期
- (b) 協會決定取消其證書，因發現申請至認證的過程中有不誠實的行為。
- (c) 登錄銲接管理者違背承諾規約，或被察覺有濫用證書、不誠實業務行為、嚴重疏失的情況，協會基於約談登錄銲接管理者及/或相關人員所做的真相調查，最後決定取消其證書並列入調查結果。

## 10. 再認證的評鑑

- (a) 登錄銲接管理者欲獲得再認證，應在登錄有效期屆滿前及認證失效前一年內申請再認證。
- (b) 再認證的評定應以(1)及(2)的方式實施。
  - 1. 評定更新認證提交的申請文件。
  - 2. 再認證考試(包括參加最新銲接技術發展相關的研討會)。
- (c) 當協會評鑑認為有必要，除採計(1)項審查及(2)項考試的結果外，可增加第二次的評鑑。第二次評鑑程序應另行規定。

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- (d) 協會可以實施結構嚴謹的積點制度作為再認證的評鑑，作為10(b)(2)再認證考試的替代方案。(參考附錄B)
- (e) 當銲接管理者通過上述10(b)和(c)或10.3再認證評鑑，並在要求日期前提交登錄表格給協會，在前次登錄到期後應視為新的認證並進行登錄。

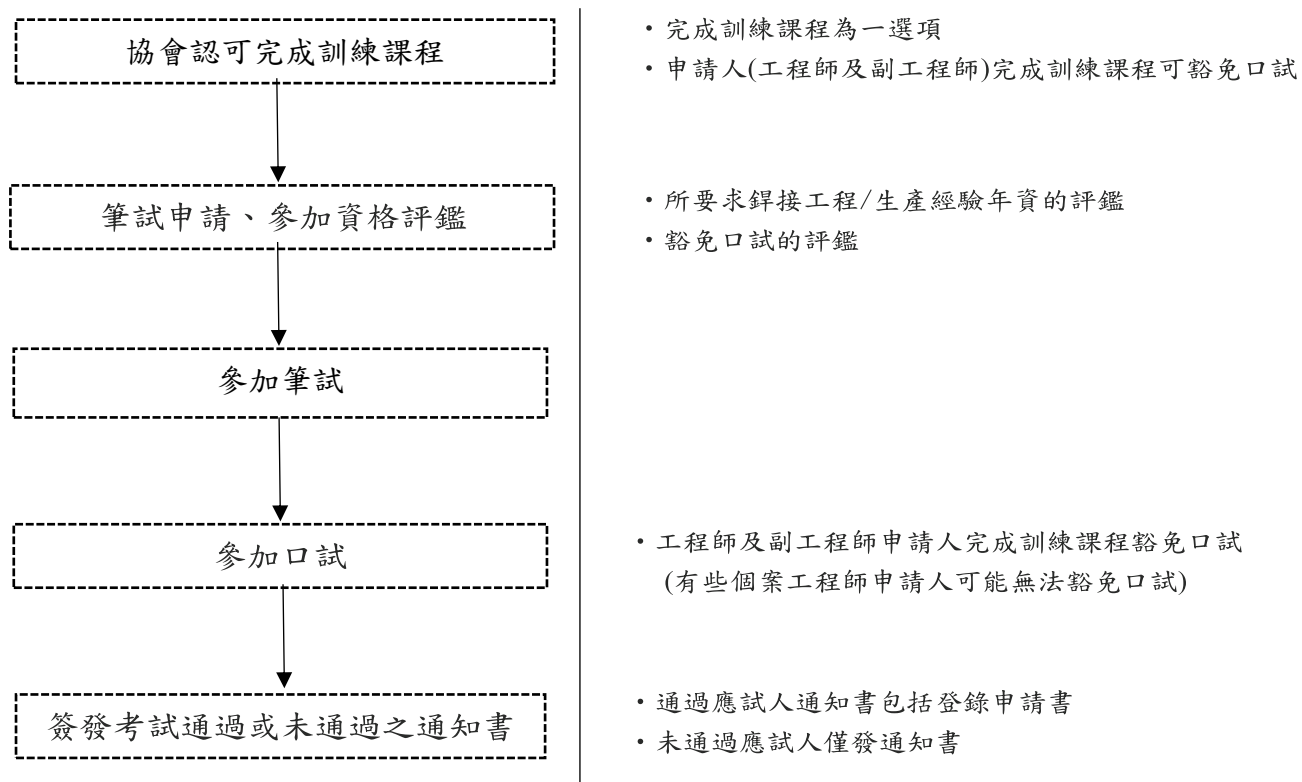
## 附錄A

(參考)

## 包括參加資格評鑑的考試申請流程

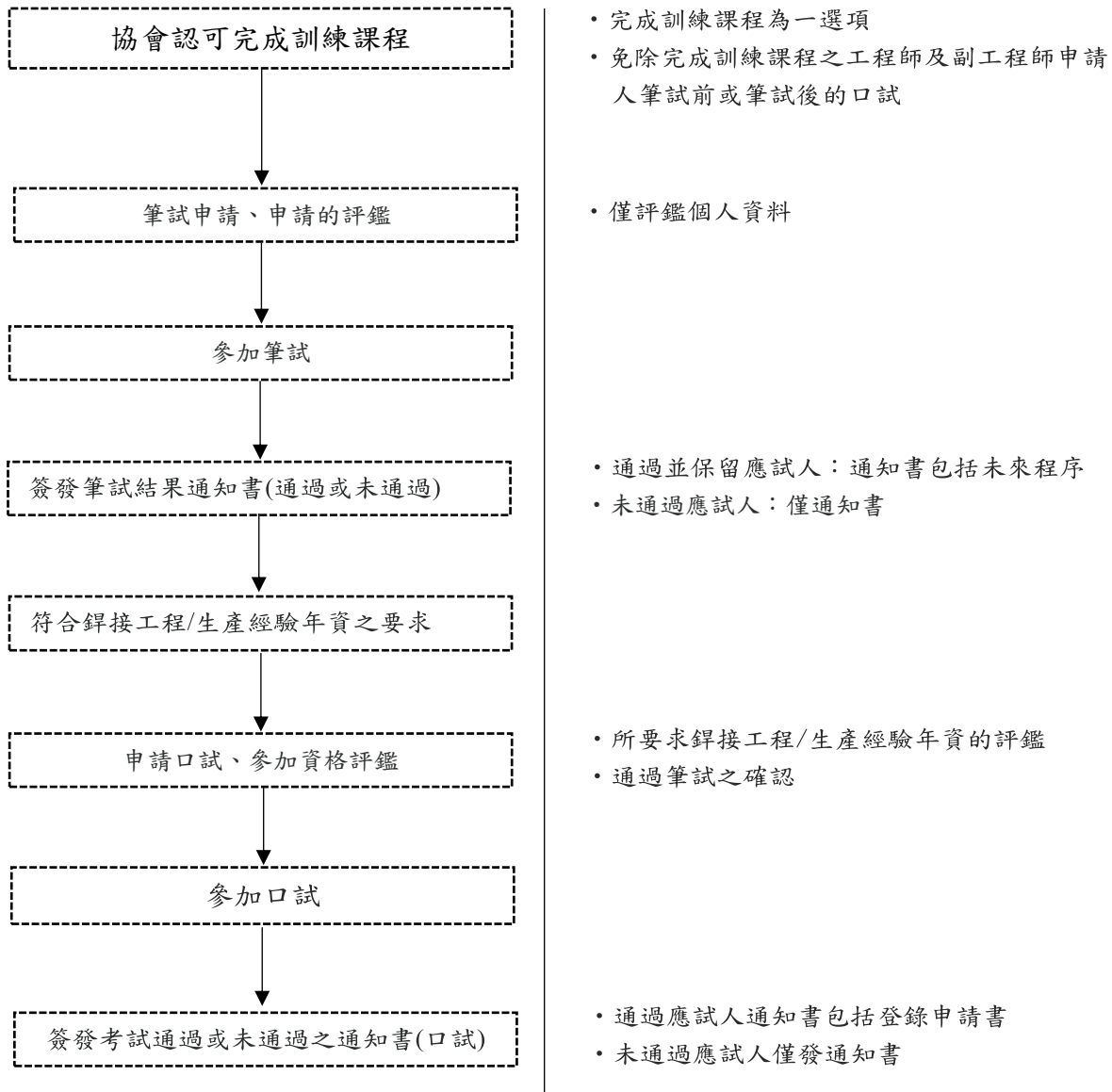
## A.1 考試申請流程

評鑑參加資格的時機依申請人是否具備表 2 所列銲接及相關工作經驗而定，考試申請流程包括參加資格的評鑑如圖 A.1 和圖 A.2 所示〔參閱本標準 5.2〕。



圖A.1 申請人具備所要求銲接工程/生產經驗年資之考試申請流程。





圖A.2 申請人銲接工程/生產經驗年資低於要求之考試申請流程。

## 附錄B

### (規定)

#### 積點制度實施指引

##### **B.1 積點制度的目的與範圍**

能提交文件證據的申請人，藉由提交積點制度申請書〔參閱10(d)〕，依據表B.1計算登錄期限前5年(60個月)的總點數達36點(含)以上，可以豁免再認證考試(包括再認證研討會和練習)。

##### **B.2 申請**

要應用積點制度的申請人須提交含再認證申請書的積點制度申請書，依據B.3，申請人也須提交可以明顯證明包含其內可以採計活動的必要文件。

##### **B.3 文件化物證**

B 3.1 由技術性研討會或討論會舉辦機構代表人簽署之文件或證書，證明出席或發表技術論文或擔任主席。

B3.2 銲接或相關技術領域發表論文或書籍著作的影本。

B3.3 由業務委託機構代表人簽屬之文件，證明關於銲接技術的諮詢(包括業務委託內容和雇用時間)。

##### **B.4 評鑑及其結果通知**

再認證委員會接收由銲接管理者檢定委員會提送之評鑑參考用語，應對申請案作出評鑑決定。若有必要，再認證委員會可以藉由電話、郵件或會議等方式聯繫申請人。

評鑑結果應通知申請人。

##### **B.5 上訴與抱怨**

無法接受 B.4 敘述之評鑑結果的申請人，可以提交敘述理由之上訴申請書至協會。

表 B.1 再認證之積點制度

積點事項	點數
(1) 在協會、研究所或學校所舉辦與銲接技術相關之技術會議或討論會擔任講師或主席，所謂會議包括研討會、座談會、技術訪問、工廠參觀等。	執行或參與1小時3點 <sup>(3)</sup>
(2) 準備和發表銲接或相關技術之論文在國內正式期刊、或國際技術協會邀請或同行評審的技術出版物 <sup>(4、5)</sup> 。	1篇論文18點
(3) 在上述(1)定義的會議或討論會投稿論文或發表論文 <sup>(4、5)</sup> 。	1篇論文12點
(4) 出席參與上述(1)定義的會議或討論會 <sup>(5)</sup> 。	參與1小時1點 <sup>(3)</sup>
(5) 對公司 <sup>(7)</sup> 以外的機構或產業界提供銲接或相關技術 <sup>(1)</sup> 的正式諮詢，如果諮詢工作是經常性活動則不予採計。	聯繫1小時1點 <sup>(3、8)</sup>
(6) 對協會銲接技術活動作出貢獻、或對銲接相關技術作出努力，有關上述之貢獻或努力應由第三機構驗證：從一協會或研究所接收關於銲接技術的認可；對銲接及相關技術的標準化、協會或研究所的活動作出貢獻 <sup>(4、6)</sup> 。	個案決定 <sup>(9)</sup>
<b>註：</b> (1) 銲接及相關技術限於銲接管理者被要求應具備之技術領域和能力。 (2) 適用會議為銲接管理者及銲道檢驗認證(CIW)之訓練課程。 不適用會議為公司專題討論會、鋼圓柱機械手臂銲接操作員訓練課程、銲接技術員檢定試驗監評、銲接技術員實作及理論課程等。 (3) 50分鐘執行時間可視為1小時。 (4) 在共同著作的狀況，個人至少須貢獻原稿內容的10% 在發明或接受獎項有超過1人以上之情況，個人至少須貢獻內容的10%。 (5) 在第(2)項，沒有同行評審或自願的投稿應採用第(3)項計算點數。 (6) 研究、調查或為諮詢作準備的時數可以包括到執行時數，但不包括交通時數。 (7) 對同一集團或關係企業提供的諮詢不計。 (8) 研究和準備時間可以包括，但不包括交通時間。 (9) 規定在第(6)項活動的評價應由再認證委員會依個案作認定，對協會活動的貢獻可以包括對銲接產業有價值發明的專利權。 SWE申請人提交作為再認證評鑑之論說報告若被評定為傑出報告，基於主試人員的推薦稍晚可能在JWES WE COM發表，其相關SWE申請人將可以36點作為下次再認證使用。	