

Trade Test Seminar

Intermediate Trade Test for General Welder

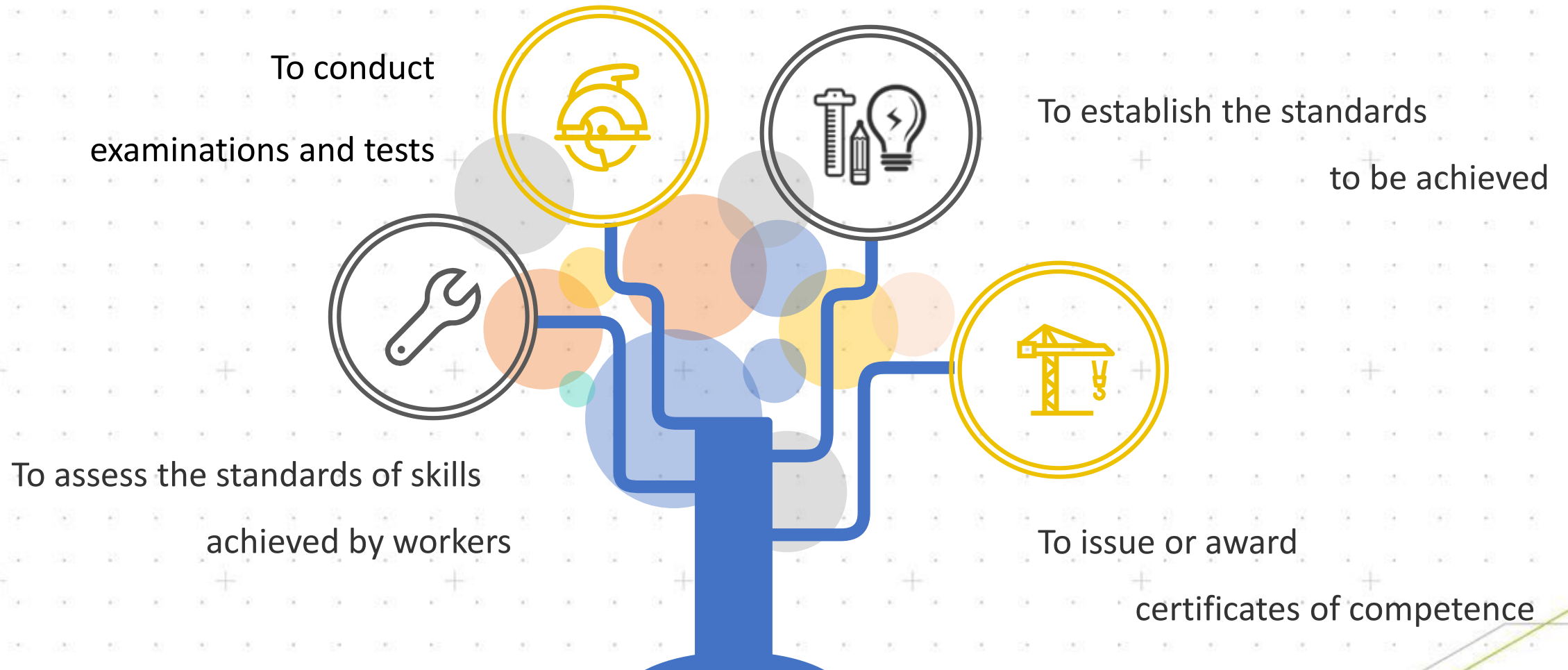
Li Tak Shing - Supervising Instructor
HKCITTC
2020/10/18

Agenda

1. Introduction of Trade Testing
2. Application Requirements of Trade Test
3. Trade Test Procedures
4. Content of Intermediate Trade Test for General Welder
 - 1) Written Test Content
 - 2) Practical Test Content
 - 3) Trade Testing Workshop and Mock-up
 - 4) Major Equipment & Tools, Safety Tools and Materials List
 - 5) Common Mistakes
5. Candidate Resources
6. Q&A Session



1. Introduction of Trade Testing - Purposes



1. Introduction of Trade Test - Categories of Trade Tests and Nos. of Candidates



Civil and Building Construction Trade Test
Types of Trade Tests : 76
Types of Intermediate Trade Tests : 47



Construction-related Electrical and Mechanical Trade Tests
Types of Trade Tests : 15
Types of Intermediate Trade Tests : 12



Certification Tests for Machineries and Cranes Operation
Construction Crane Operators (Gondola)
Operator of Builder's Lift



Total Nos. of **Candidates** in 2019 * **20,915**

*Including Civil and Building Construction Trade Test, Construction-related Electrical and Mechanical Trade Tests and Certification Tests for Machineries and Cranes Operation (Gondola and Builder's Lift)

2. Application Requirements of Trade Test



Recognised bridging
course for trade test

2 Trade Test
Opportunities
for each Course

ITT

1. Hong Kong Residents
2. Holding Valid Safety Card
3. Fulfil **work experience** requirement / **recognised bridging course for trade test**

Work Experience in Hong Kong

- At least **2 years'** relevant work experience

Documentary Proof(s) of Work Experience:

- Documentary Proof from Employers; and/or
- Declaration or Oath/ Affirmation made at one of the Home Affairs Enquiry Centres; and/or
- Specified Form signed by the Chairman/ Vice-chairman of one of the recognised labour unions

TT

1. Hong Kong Residents
2. Holding Valid Safety Card
3. Fulfil **work experience** requirement / **recognised bridging course for trade test**

Work Experience in Hong Kong

- At least **4 years'** relevant work experience; or
- Possessing corresponding **ITT qualification** + at least 2 years' relevant work experience

Documentary Proof(s) of Work Experience:

- Documentary Proof from Employers; and/or
- Declaration or Oath/ Affirmation made at one of the Home Affairs Enquiry Centres

(Documentary proof issued by recognised labour unions is NOT accepted for TT application)



* NOT applicable to Certification Tests for Machineries and Crane Operation

3. Trade Test Procedures

Key Points to Note



Present valid Green Card
攜帶有效平安卡



Bring your own Safety Shoes
自備安全鞋

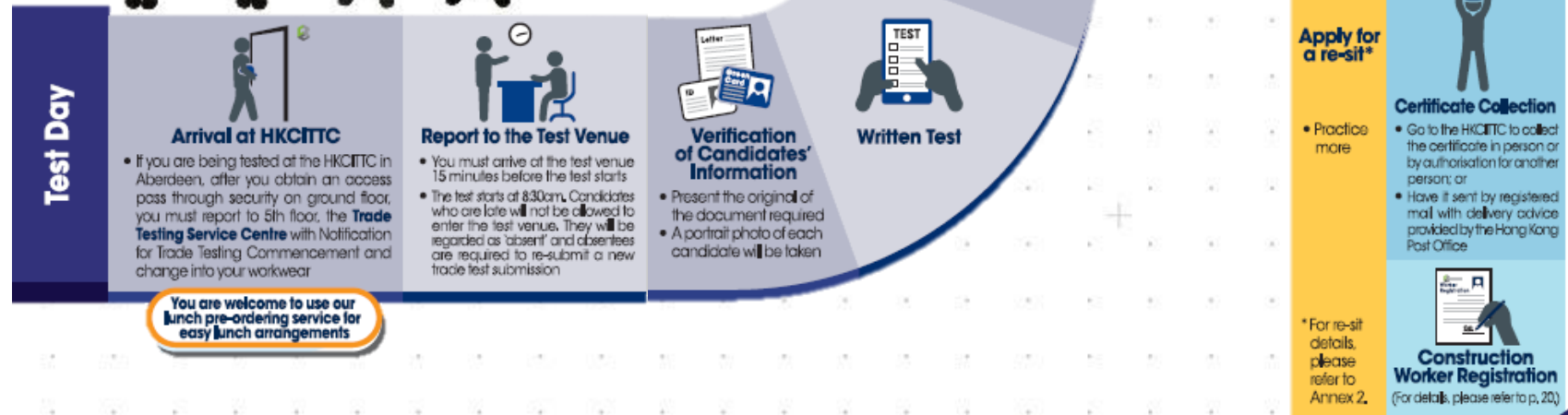


Arrival Time for Registration on L5e Service Centre
到達L5e服務中心登記時間

Appropriate
Work wear



Watch the Video !



4. 普通焊工中級工藝測試 (中工)

Intermediate Trade Test for General Welder

筆試
Written Test
限時30分鐘
Time Limit
30 Minutes



(由2020年1月1日起所有工藝測試均設筆試)
(Written Test session applies to all trade test & intermediate trade test from 1 Jan 2020 onwards.)

實務試
Practical Test
限時3小時
Time Limit 3 Hours



4.1 筆試內容 Written Test Content

筆試 Written Test

測試限時 Time Limit	30分鐘 30 Minutes
測試內容 Test Content	10條選擇題 10 Multiple Choice Questions
合格要求 Passing Requirement	答對6條或以上為合格 Answer 6 (or above) questions correctly will be awarded a “pass”



筆試範疇

Scope of Written Test

- ✓ 相關工種項目的技術知識 Understanding on trade skill
- ✓ 相關工具及器械的應用知識
Application knowledge of relevant tools and equipment
- ✓ 建造安全知識 Safety knowledge
- ✓ 工種相關的法例及行為守則
Industry practice and code of conducts
- ✓ 職業道德 Ethics



4.1 筆試內容參考資料

Written Test Reference Material



HONG KONG CONSTRUCTION INDUSTRY TRAINING CENTRE
香港建造業工藝訓練中心

General Welder Intermediate Trade Test
Reference Material for Written Test

General Welder Intermediate Trade Test Reference Material for Written Test Reference material to prepare for written test

This study material is a reference for candidate to prepare for attending written test in Intermediate Trade Test:

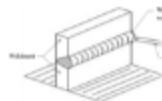
1. Shielded metal arc welding electrode has different sizes in diameter and it is represented through numerical values under Standard Wire Gauge (SWG). For SWG 12, 10, 8 and 6 electrode, the largest diameter of electrode is SWG 6.
2. According to American Welding Society, classification of electrode follows standard pattern, for example: E6013. The first two digits, i.e. 60, designates minimum tensile strength of electrode at least 60ksi (or 413MPa).
3. For electrode E6013, the third digit, i.e. 1, designates position. It means the electrode is usable in all positions (i.e. flat, horizontal, vertical and overhead).
4. The tools shown in the photos are called welding rod oven.



5. The tool shown in the photo is called cutting torch.



6. The welding position shown in the diagram is horizontal.



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3

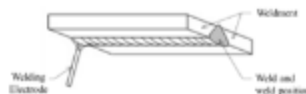
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HONG KONG CONSTRUCTION INDUSTRY TRAINING CENTRE
香港建造業工藝訓練中心

General Welder Intermediate Trade Test
Reference Material for Written Test

7. The welding position shown in the diagram is overhead.



8. Comparing low carbon steel with medium carbon steel, high carbon steel and cast iron, low carbon steel has higher weldability than others.
9. In general, low carbon steel does not require preheating before welding.
10. Electrode rods should be kept dry in order to prevent porosity during welding.
11. The most serious weld defect is crack.
12. When considering shielded metal arc welding for vertical weld, welders should use short welding arc length, small size of electrode and low welding current.
13. The shielding gas used to protect the melt pool in gas tungsten arc welding (GTAW), or called tungsten inert gas welding, is argon.
14. The flame for oxy-acetylene cutting is neutral flame.
15. When there is a problem with an electrical tool, worker should stop using it and report to the person in charge to arrange repairing.
16. The highest fatal accident rate in construction industry is work at height.
17. Every board or plank forming part of a working platform should be not less than 25mm in thickness.
18. The top guard-rails of working platform should be ranged from 900 to 1150mm in height.
19. In case of any corruption/act of bribery happen in construction industry, it will cause decline in work quality.
20. The benefits of professional ethics and good conducts will improve construction industry and it will bring us mentally and physically well.

Provision

This document is provided as reference for test preparation only. Under all circumstances, all content in the official test papers, including but not limited to the terms and conditions therein, prevail. There are different versions of the test paper, content include but not limited to tools, materials, equipment, drawing, construction details or procedures and different simulated site environments. Candidates should refer to the official test documents during testing.

The CIC reserves the right, at its sole and absolute discretion, to change, update or delete the contents in this document at any time without prior notice.

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4

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Written Test
Reference Materials

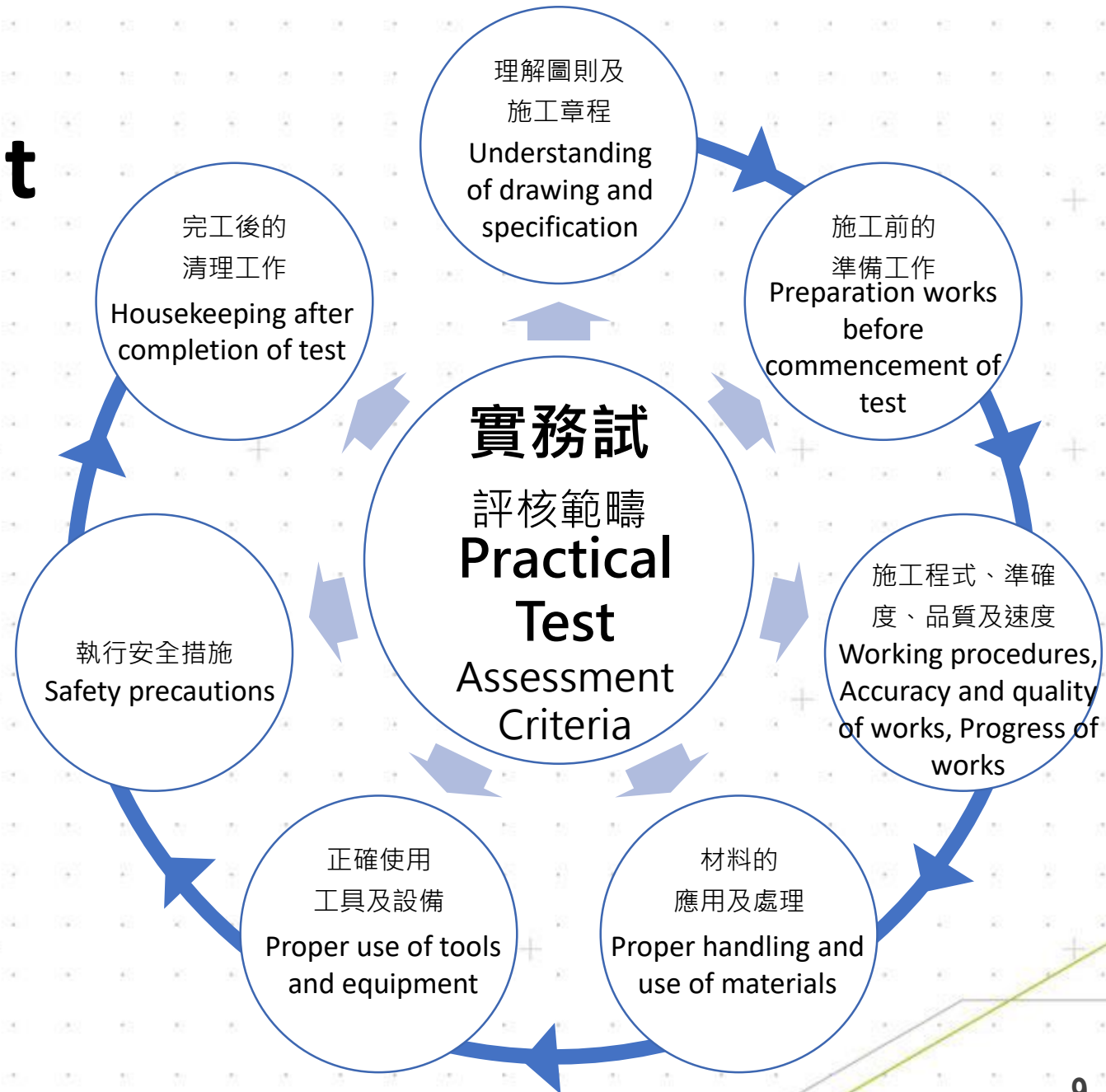


4.2 實務試內容

Practical Test Content

Points to Note:

1. The candidate must read the “Notes to Candidates” in the Annex before starting;
2. **Candidates must fulfill the following requirements to be awarded a pass in the test:**
 - i. **Get a Pass in the Skill Assessment Part** (get 60 marks or above out of 100 marks, and without serious technical defects); and
 - ii. **Get a Pass in the Safety Assessment Part** (get 6 marks or above out of 10 marks); and
 - iii. Complete the test within the **time limit**.
3. Full mark of the test is 100 marks. The passing mark is 60 marks.



4.2 實務試內容（續）

Practical Test Content (Continued)

- **Duration:** 3 hours

Test Content:

Complete the following items at designated location:

1. Select suitable electrode, adjust current, fix the steel plates by tack weld and full weld in flat position.
2. Set up & check cutting device properly, adjust the pressure and light. Cut the work piece according to the lines. Upon completion, disassemble the cutting device.



4.2 實務試內容（續）

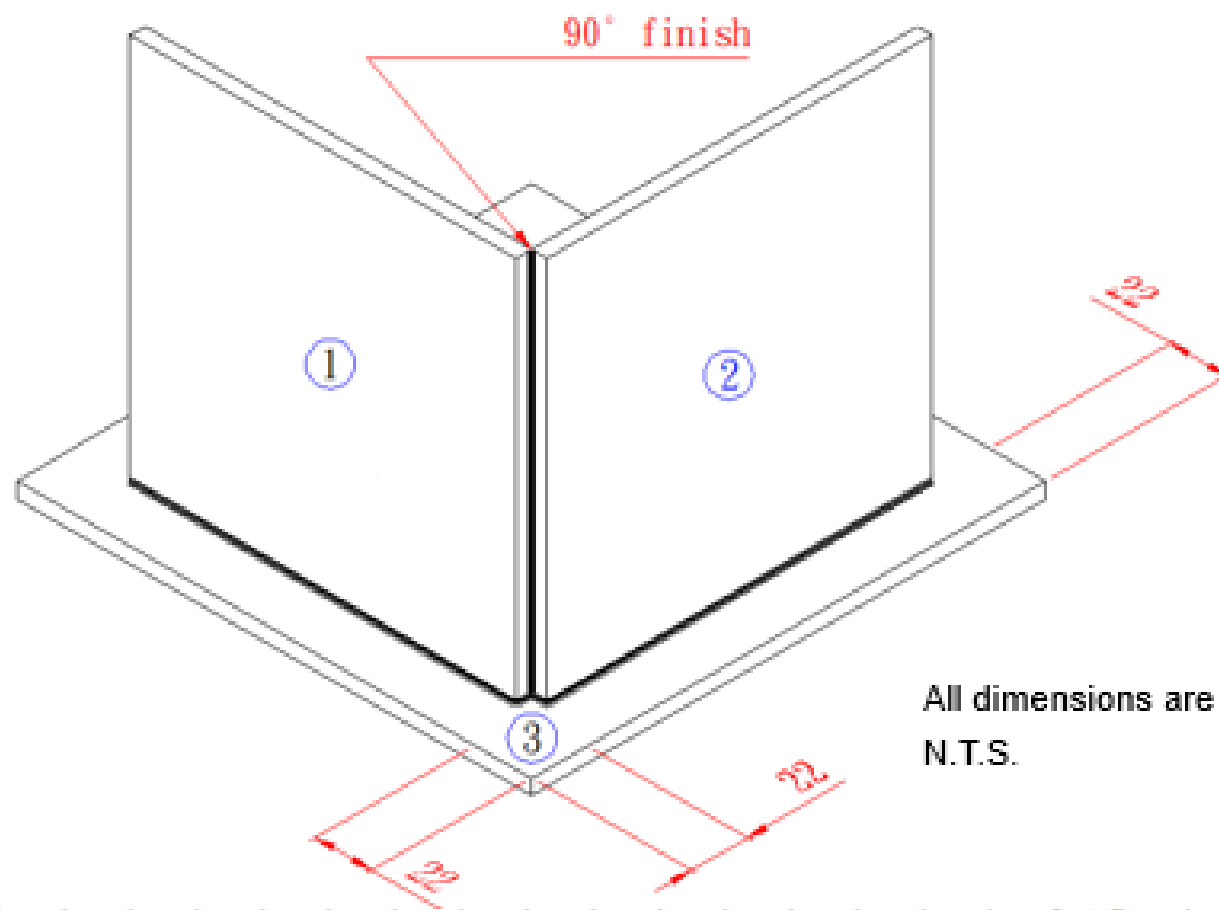
Practical Test Content (Continued)

Working Drawing No. 1

Specifications & Requirements

1. Weld in flat position after the work pieces have been connected by tack weld.
2. All welds are full weld.
3. Leg length 5mm to 8mm.
4. All welds shall be free from defects.
5. Upon completion, remove all slags and spatters.

Material	Dimensions/Specification
Mild Steel Plate	150 x 150 x 6
Mild Steel Plate	200 x 200 x 6
Electrode	E6013, \varnothing 3.2



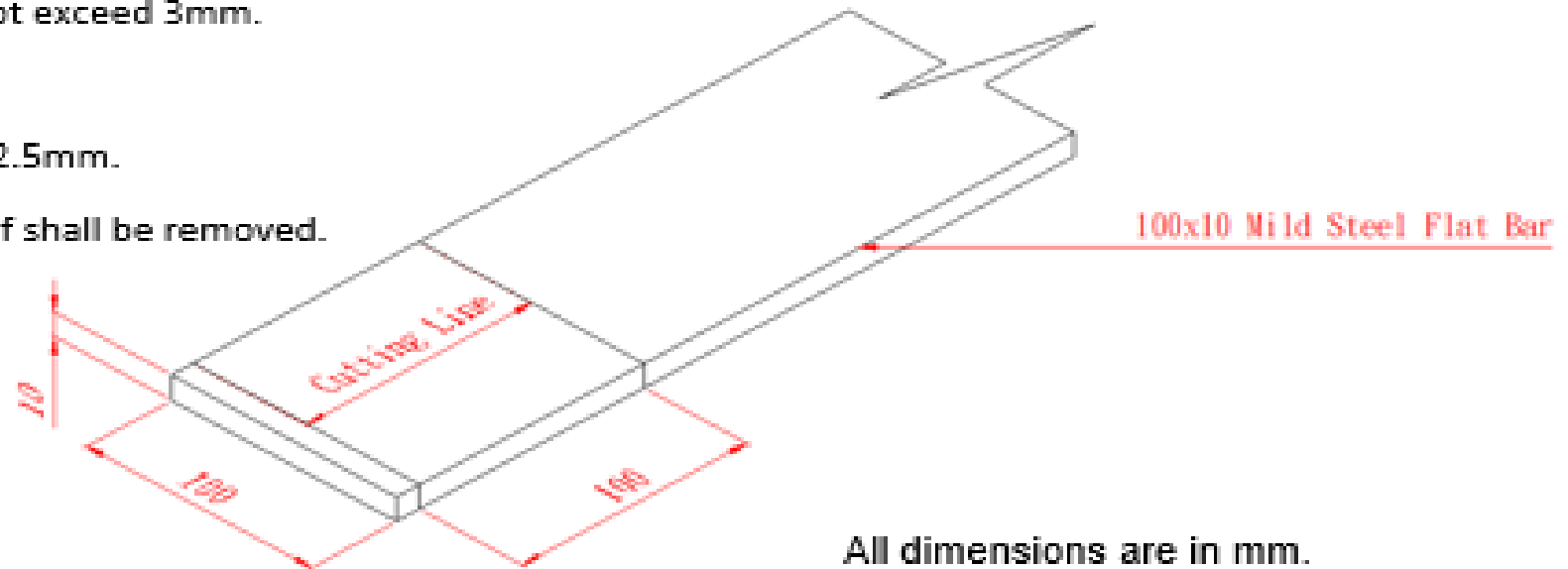
4.2 實務試內容（續）

Practical Test Content (Continued)

Working Drawing No. 2

Specifications & Requirements

1. Cut the work piece along the lines drawn on the plate.
2. Candidate is required to work on floor.
3. Tolerance of kerf's straightness shall not exceed 3mm.
4. Width of kerf shall not exceed 4mm.
5. Perpendicular of kerf shall not exceed 2.5mm.
6. The slag attached on the bottom of kerf shall be removed.



All dimensions are in mm.

N.T.S.

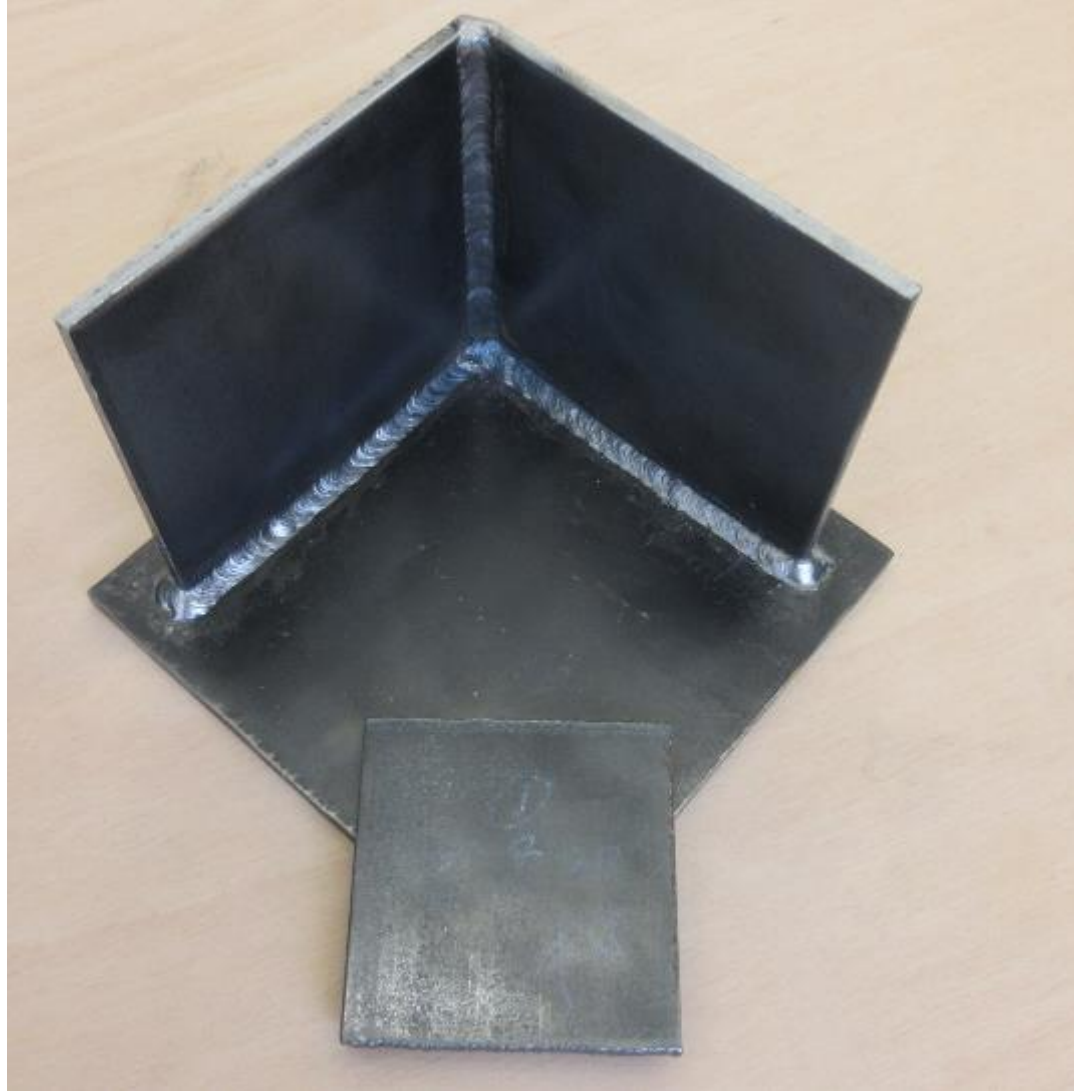


4.3 測試工場 Trade Testing Workshop



4.3 成品樣板 Mock-up

圖片只供參考
The photos are for reference only.



4.4 主要設備工具表

Major Equipment and Tools List

序號 Item	名稱 Name	圖片 Photo	序號 Item	名稱 Name	圖片 Photo
1	DC400 Electric welding machine		4	Chipping hammer	
2	Wire brush		5	Hammer	
3	Steel measuring tape		6	Chisel	



4.4 主要設備工具表（續）

Major Equipment and Tools List (Continued)

序號 Item	名稱 Name	圖片 Photo	序號 Item	名稱 Name	圖片 Photo
7	Oxyacetylene welding equipment				

4.4 主要安全用品列表

Major Safety Tools List

序號 Item	名稱 Name	圖片 Photo	序號 Item	名稱 Name	圖片 Photo
1	Welding headgear used with safety helmet		4	Dust mask	
2	Handheld welding mask (face shield)		5	Leather sleeves	
3	Safety goggles		6	Leather gloves	



4.4 主要安全用品列表 (續)

Major Safety Tools List (Continued)

序號 Item	名稱 Name	圖片 Photo	序號 Item	名稱 Name	圖片 Photo
7	Leather apron		8	Corded ear plugs	

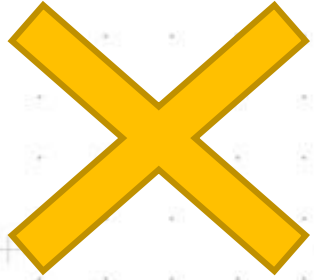
4.4 主要物料表

Major Materials List

序號 Item	名稱 Name	圖片 Photo	序號 Item	名稱 Name	圖片 Photo
1	Work pieces 1 set		2	Electrode E6013 #10 (Ø 3.2)	



4.5 常犯錯誤 Common Mistakes



1) Slag inclusion

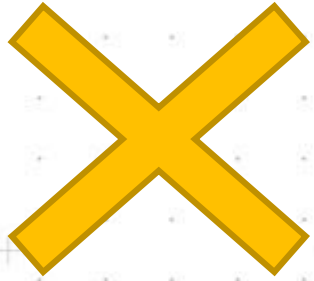


2) Lack of fusion
(Incomplete fusion)



4.5 常犯錯誤 (續)

Common Mistakes (Continued)



3) Overlap

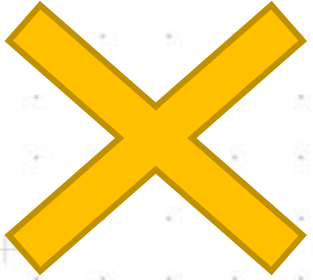


4) Undercut



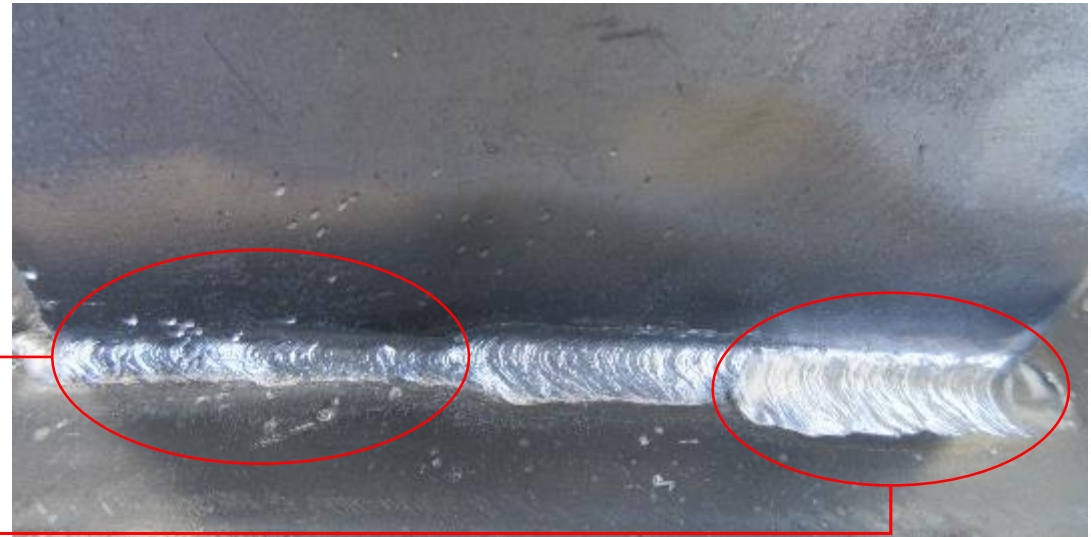
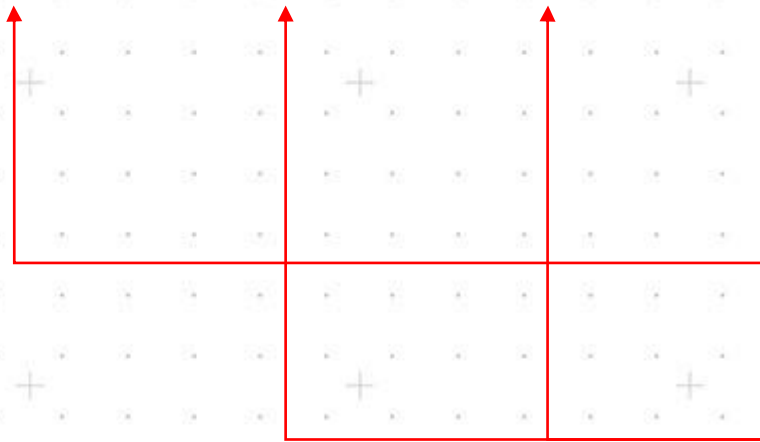
4.5 常犯錯誤 (續)

Common Mistakes (Continued)



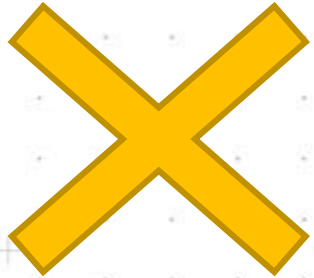
5) Leg length :

too short/too long/unequal



4.5 常犯錯誤 (續)

Common Mistakes (Continued)

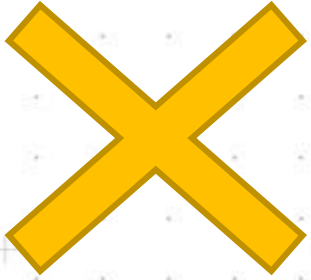


6) Spatter and Slag are not removed



4.5 常犯錯誤 (續)

Common Mistakes (Continued)

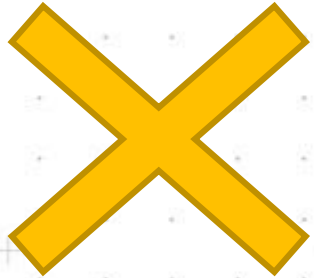


7) Failed to install the flash back arrester



4.5 常犯錯誤 (續)

Common Mistakes (Continued)



8) After cutting

(a) work piece not separated

(b) top surface melted over

(c) poor in smoothness

(d) poor in straightness



5. Candidate Resources

Quick & Easy

**Trade Test
Application**



TTOA
Mobile APP

Preparation Tips



Trade Test Tips

**Must-see
before Test**



Trade Test Information

- ✓ Code of Conduct and Dress Code for Candidates
- ✓ Location Map and Transportation Guide



Q&A Session

Please feel free to contact us for any enquiries.

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