



CONSTRUCTION
INDUSTRY COUNCIL
建造業議會

HONG KONG CONSTRUCTION INDUSTRY TRADE TESTING CENTRE
香港建造業工藝測試中心

The 1st Hong Kong Construction Skills Competition

Competition Handbook (Version 6)

Welding (Open Group)

〈 The document only serves as a reference for pre-competition preparation
and is updated from time to time without prior notification. 〉

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Competition Handbook

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1. Test Project

Content	Score
Complete the following items according to the drawings at the designated location:	
a. With reference to drawings 1 and 2, weld work pieces with butt welding (1G) and tube-to-tube butt welding (2G) techniques, as well as in vertical (bottom-up welding required), flat and overhead positions with appropriate electrodes and current. Work pieces have been fitted up, only to be strengthened and reinforced by tack welding. Competitors are not allowed to turn over the work pieces for welding. Upon completion, remove all slags and spatters and keep the welds as they are.	
Technical and quality requirements include:	
Fillet weld techniques	(35 marks)
Butt weld techniques	(30 marks)
Handling of work pieces and quality of final product	(35 marks)
Total	100

Time 6 hours (lunch time excluded)
allowed:

2. Notes to Competitors

2.1 General Instructions

- 2.1.1 Read the test project, specifications and regulations listed in the Handbook carefully and ask the adjudicators for any queries.
- 2.1.2 Carry out the test project according to working drawings and specifications provided.
- 2.1.3 Check and collect the tools and materials required before the competition starts. Obtain additional items as soon as possible in case of shortage.
- 2.1.4 Competitors are required to handle tools and materials and carry out associated works on their own. All tools must be returned after the competition. Please ask the adjudicators for any queries.
- 2.1.5 Stop all works when time is up.
- 2.1.6 Do not talk loudly, cause nuisance or affect other Competitors during the competition.
- 2.1.7 No photos or videos are allowed, including those taken with cameras and mobile phones.
- 2.1.8 The use of mobile phones is not allowed during the competition except for emergency situations.
- 2.1.9 The display of behaviours and objects with religious, political, sexual and violent implications or causing discomfort and controversies are not allowed during the competition. The Construction Industry Council (CIC) reserves the right to discretion

on the above behaviour without the need to provide any explanations.

2.1.10 In case of substantiated violations of item 2.1.9, Competitors will be disqualified from the competition.

2.1.11 The judging criteria are briefly listed as follows:

- a. Understanding of drawings and specifications
- b. Preparation before work
- c. Work procedures
- d. Accuracy and quality of work
- e. Work progress
- f. Appropriate use of handling of materials
- g. Proper use of tools and equipment
- h. Housing-keeping after work completion
- i. Safety precautions

Note: Detailed judging criteria will be announced later.

2.2 Technical Guidelines

- 2.2.1 Use Electrode E7016 for both tack weld and weld. The turning over of work pieces is allowed for tack welding.
- 2.2.2 Work pieces have been fitted up, only to be strengthened and reinforced by tack welding. The length of tack weld should be no longer than 15mm.
- 2.2.3 Upon fixation of work pieces by tack welding, carrying out welding according to the drawings at designated locations. Do not turn over the work pieces for welding.
- 2.2.4 Unless otherwise specified in drawings, the tolerance of leg length for all fillet welds should be +2mm/-0mm. Leg length for tee joint fillet welds should be 7mm (+2mm/-0mm), leg length for outside corner joint fillet welds should be 10mm (+2mm/-0mm).
- 2.2.5 Defects such as slag inclusion, porosity, undercut, overlaps, lack of fusion, cracks, arc strikes, etc. are not acceptable.
- 2.2.6 Alignment tolerance for welded work pieces is 3 mm for all directions.
- 2.2.7 Upon completion, remove all slags and spatters and keep the welds as they are. Marks will be deducted for cosmetic welding. Grinding should limit to cleaning welds with wire wheels.
- 2.2.8 Tensile strength of flat bars and tubes is of grade S275.
- 2.2.9 All welds should be tested by visual inspection.

2.3 Safety and Environmental Guidelines

- 2.3.1 Competitors should wear the safety helmet with chinstrap provided during the competition.
- 2.3.2 Bring and wear proper clothing and safety shoes. Other safety equipment will be provided at the venue.
- 2.3.3 Wear safety goggles, dust masks and ear protectors when carrying out grinding and cutting work with abrasive wheels.
- 2.3.4 Wear the personal protective equipment as provided. Do not wear cotton gloves when operating motor tools and machinery with spinning components.
- 2.3.5 Certain works involve work above ground. Competitors can use related safety equipment provided if necessary.
- 2.3.6 Check the tools and materials distributed by the organizer before the competition starts. For any irregularities, inform staff members on the site for follow-up.
- 2.3.7 No eating and drinking at the workstation area.
- 2.3.8 Safety constitutes one of the judging criteria. Competitors should take all safety precautions to ensure safety. Those displaying unsafe behaviour or affecting other Competitors would receive mark penalty or face disqualification from the competition.
- 2.3.9 In case of emergency (e.g. fire), the competition will be halted. Competitors should evacuate according to the instructions of fire wardens (personnel wearing red safety helmets) at the venue.

- 2.3.10 In case of physical discomfort or injury, inform staff members immediately for arranging first-aid assistance.
- 2.3.11 The organizer has prepared a sufficient supply of materials for all Competitors. Competitors should make good use of all materials to avoid wastage.
- 2.3.12 All tools and materials used in the competition will be recycled for other uses after the competition.

3. Reference List of Tools

Item no.	Item	Quantity
1	DC400 Electric welding machine	1
2	Wire brush	1
3	Straight rule	1
4	Steel measuring tape	1
5	Wire wheel	1
6	Brush	1
7	Pliers	1
8	Sandpaper	1
9	Hammer	1
10	Chisel	1
11	Chipping hammer	1
12	4" portable grinder	1

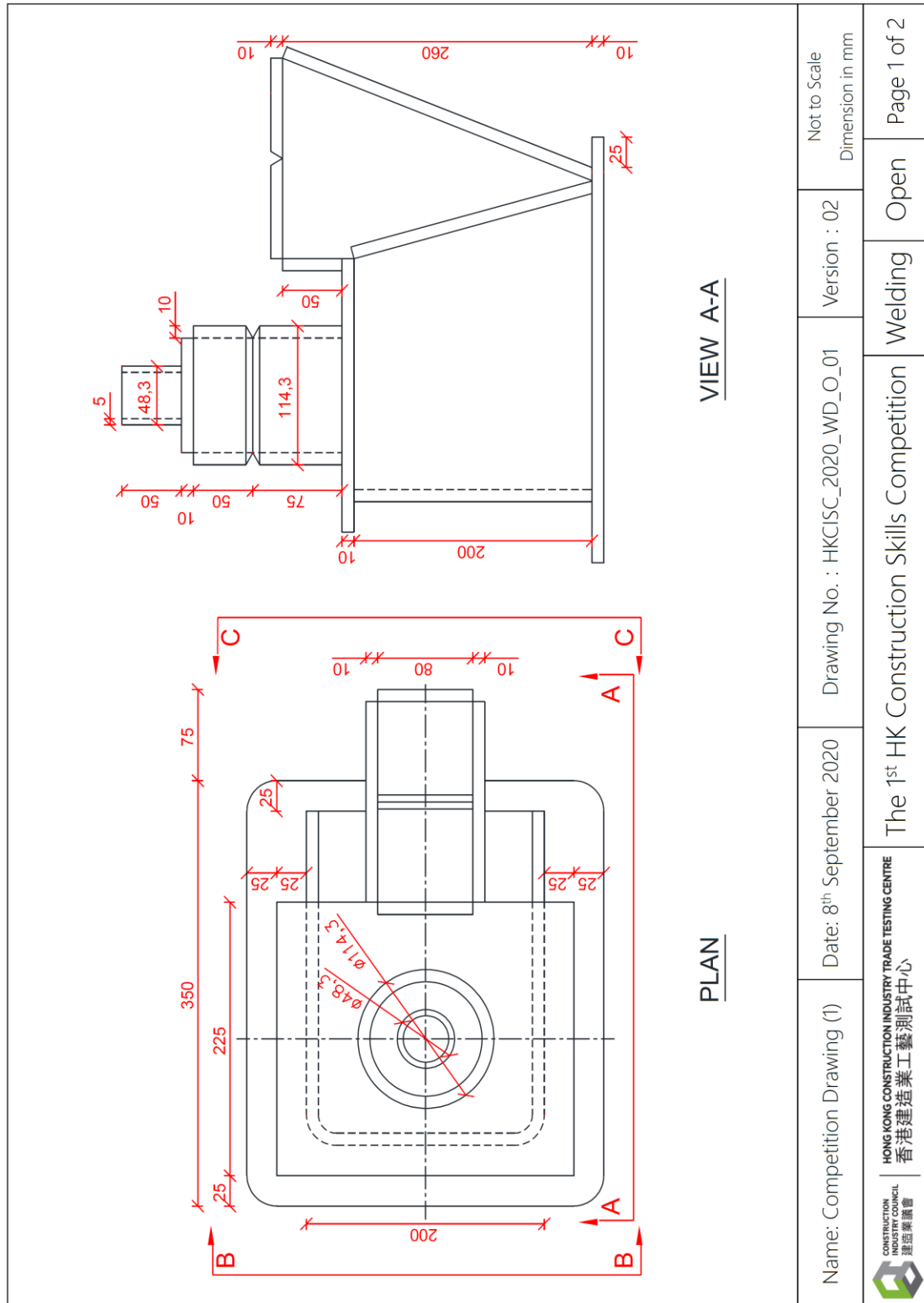
4. Reference List of Materials


Item no.	Item	Quantity
1	Electrode E7016 #8 (Ø 4.0)	Limited supply
2	Electrode E7016 #10 (Ø 3.2)	Limited supply
3	Electrode E7016 #12 (Ø 2.5)	Limited supply
4	Work pieces	1 set

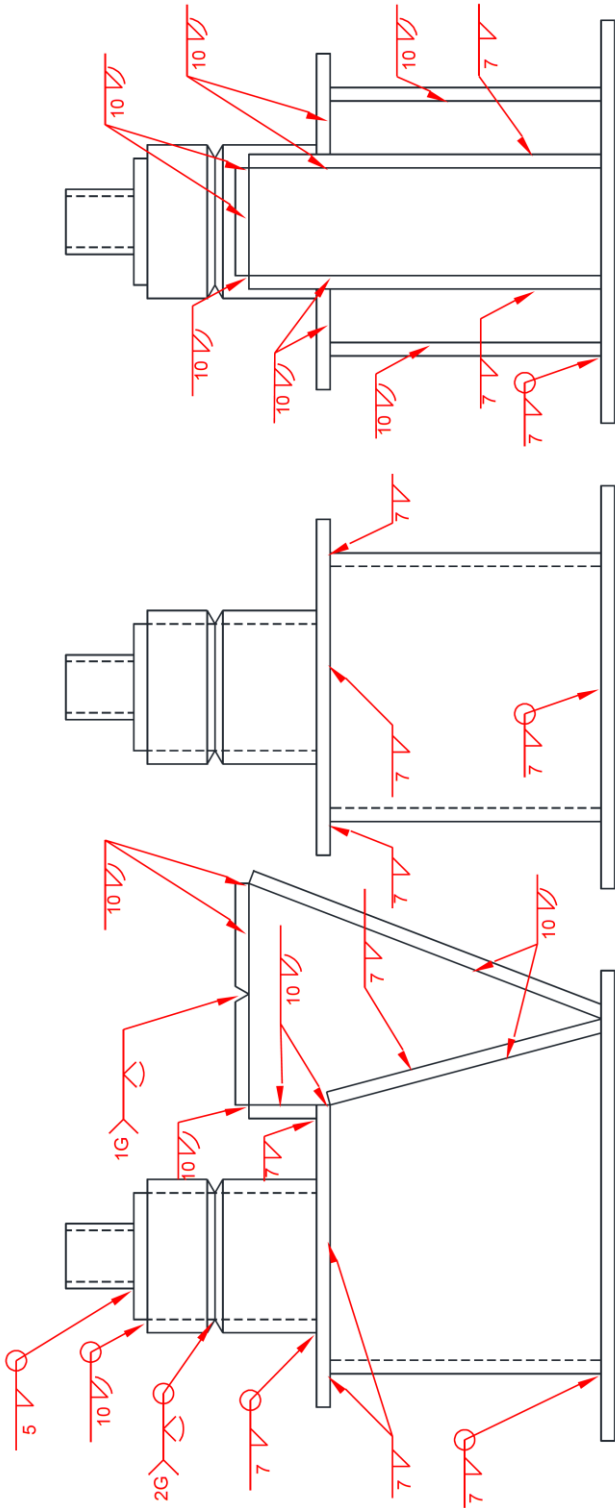
5. Reference List of Safety Equipment

Item no.	Item	Quantity
1	Safety helmet with chinstrap	1
2	Welding headgear used with safety helmet	1
3	Handheld welding mask (face shield)	1
4	Safety goggles	1
5	Corded ear plugs	1
6	Dust mask	1
7	Leather sleeves	1
8	Leather gloves	1
9	Leather apron	1

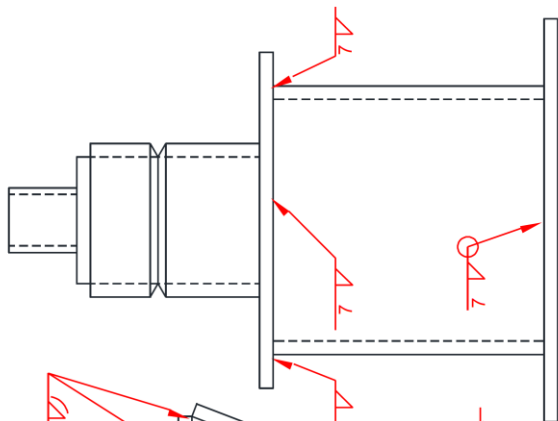
6. Reference Test Project Drawing



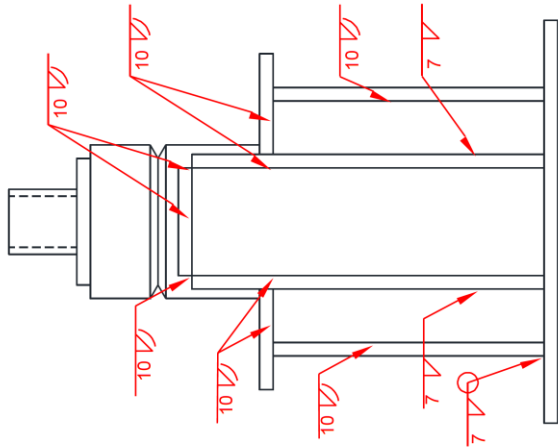
<div><div><div>HONG KONG CONSTRUCTION INDUSTRY COUNCIL 香港建造業議會</div></div><div><div>HONG KONG CONSTRUCTION INDUSTRY TRADE TESTING CENTRE 香港建造業工藝測試中心</div></div></div>		The 1 st HK Construction Skills Competition			Welding	Open	Page 1 of 2
Name: Competition Drawing (2)		Date: 8 th September 2020	Drawing No. : HKCISC_2020_WD_O_02	Version : 02	Not to Scale Dimension in mm		



VIEW A-A



VIEW B-B



VIEW C-C

7. Contact Information

For an enquiries related to the Competition Handbook, please refer to the official website

http://www.cic.hk/chi/main/aboutcic/news_and_updates/events_calendar/event-370.html

or contact the Hong Kong Construction Industry Trade Testing Centre via:



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