



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 2nd Hong Kong Construction Skills Competition

Competition Handbook of Open Group – Welding

(Version : HKCSC2-OWD-TP02-EN)



此文件內容只供第二屆香港建造業技能大賽參考之用。如需要此文件之中文版本，
請 WhatsApp / 微信 5720 0071 或致電 2100 9000 聯絡香港建造業工藝測試中心。

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Disclaimer

This content of this document is for reference of preparation of the 2nd Hong Kong Construction Skills Competition (the “Competition”) organised by the Construction Industry Council (CIC) only. It may be subject to change without prior notice.

Competitors should refer to the official documents of the Competition, especially with the related conditions and requirements inside the documents.

In case of any dispute, the decision and interpretation of the CIC should be final.

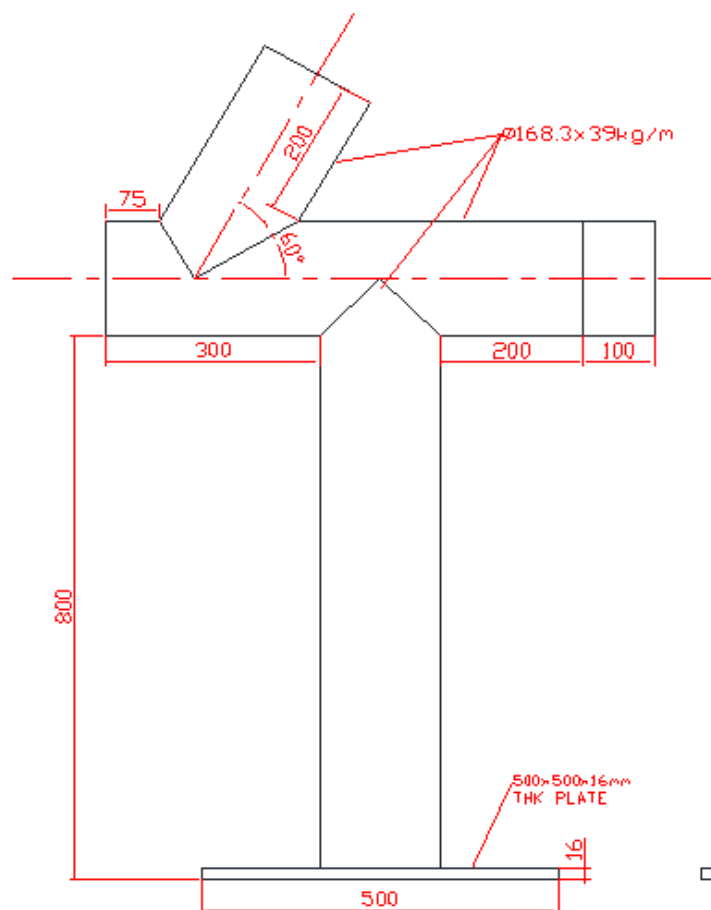
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A. Test Project

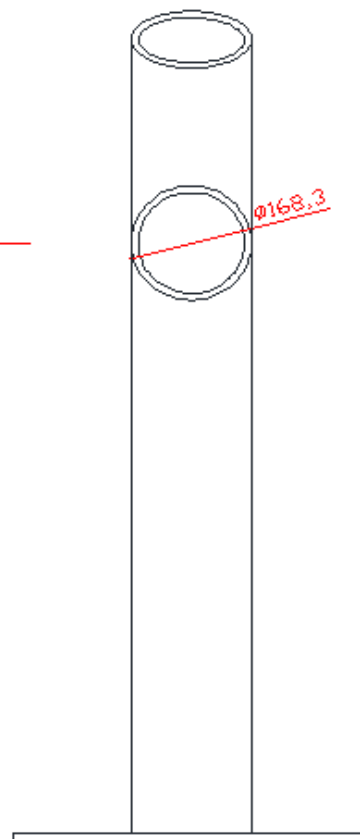
Content	Time allowed
1. <u>Risk assessment before work</u> Perform risk assessments to working site, equipment, tools, materials, and safety equipment before work, including identification of potential hazards and taking countermeasures to ensure that potential hazards are eliminated and/or risks are reduced before commencement of work.	5 minutes
2. <u>Preparation prior to work and protection to work site</u> Inspect the working site which is handed over by the owner or the latest / previous performer, and apply appropriate protection and perform proper preparation work according to the workplace environment and conditions before commencement of work, to reach the goal of mutual collaborations among industries. In addition, competitors must complete and obtain the “Hot Work Permit”.	10 minutes
3. <u>Work</u> Complete the designated test project according to the test project, work specifications and drawing(s): Test Project <ol style="list-style-type: none"> Select right electrode and adjust an appropriate current for the purpose of branch weld and butt weld to steel pipes according to the requirements in the drawings. The workpiece once combined, competitors should strengthen and stabilise the workpiece by tack welding on their own. Weld at the designated position according to the drawing after the completion of tack welding. Notes: Competitors are not allowed to flip, to turn over and to move the workpiece during welding work. All weld slags and weld spatters should be removed after the completion of weld. The weld bead should be preserved as original. 	5 hours and 30 minutes
4. <u>Housekeeping after work and final touch-up on work before handover</u> After completion of work, tidy up and organise the workplace, equipment, tools and materials, review the quality of workpiece in consideration of the potential influence to next / upcoming performer, in order to reach the goal of mutual collaborations among industries. Properly review and handover the workpiece and working site to receiver.	15 minutes
Total time allowed :	6 hours

B. Reference Project Drawing

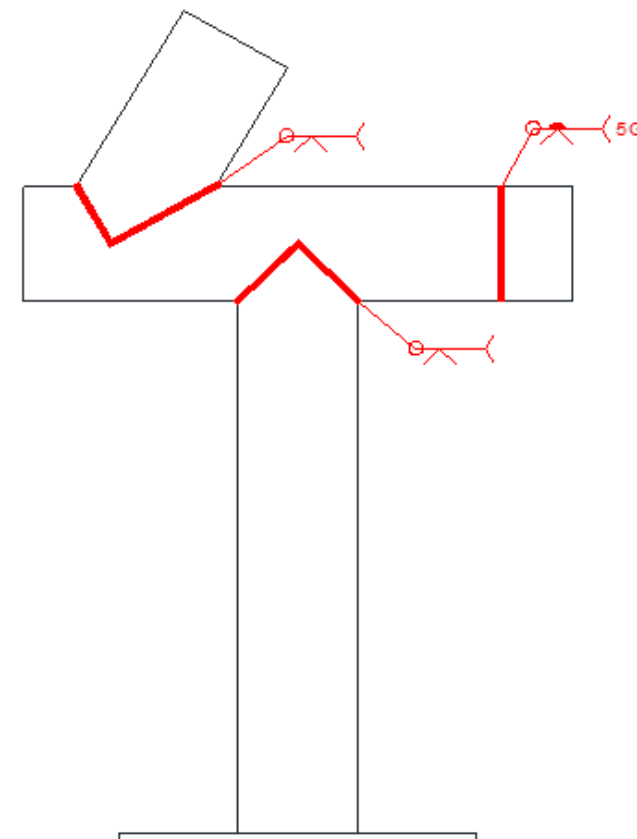
Competition Drawing



Front-View



Side-View



Weld Plan

Drawing not to scale.
Dimensions in Millimeter.

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C. Notes to Competitors

1. General Instructions

- 1.1 Competitors must follow the instructions about the conduct of the Competitions, either given by the judges, the CIC staffs or on the test project documents.
- 1.2 Before the Competition starts, competitors should read the test project, specifications and regulations listed in the Handbook carefully and ask the judges for any queries.
- 1.3 Before the Competition starts, competitors should check and collect the equipment, tools, materials and safety equipment required. Obtain additional items as soon as possible in case of shortage or defect. Ask the judges for any queries.
- 1.4 During the Competition, competitors are required to handle tools and materials and carry out associated works on their own, follow the general industry rules and safety instructions for all safety measurements.
- 1.5 During the Competition, do not communicate with any parties, talk loudly, cause nuisance or affect other competitors. Do not leave or return to the competition area, unless the permission is granted by the judges.
- 1.6 During the Competition, the use of mobile phones or any unauthorised objects (e.g. Notebook) are not allowed, except for emergency situations.
- 1.7 Competitors should stop all works when time is up and report to the judges for the completion of works.
- 1.8 All tools and test project documents must be returned after the competition. Competitors are not allowed to take away any items inside the workstation.
- 1.9 Any forms of fraudulent or dishonest is not allowed in the Competition
- 1.10 Causing discomfort and controversies are not allowed in the Competition
- 1.11 No Smoking in all areas of Hong Kong Construction Industry Trade Testing Centre (HKCITTC).
- 1.12 Any forms of recording is not allowed, including photos or videos taken with cameras and mobile phones.
- 1.13 Any forms of bribery to judges or CIC staff is not allowed, if so, the CIC will report to the Independent Commission Against Corruption (ICAC).
- 1.14 Any displays of religious, political, sexual or any cause disputes or uncomfortable behaviour and items are not allowed in the competition. In the event of any disputes, the decision of the CIC shall be final.

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C. Notes to Competitors (Cont.)

Irregularities

In case of substantiated violations the above-mentioned instructions, in another word contravention of the Competition Rules, be observed by any HKCITTC staffs or anyhow brought to HKCITTC's attention before/during/after the Competition or any activities relating to them, HKCITTC could take a decision as to charge the involved Competitors a penalty for such act or omission. Penalties could include mark penalty, disqualification in this Competition and related Competition(s) in future. In the event of any disputes, the decision of the HKCITTC shall be final.

The assessment criteria are briefly listed as follows:

The assessment is classified into 2 parts, namely “Technical Assessment” and “Risk Assessment and Safety Practice Assessment”.

Technical Assessment	Risk Assessment and Safety Practice Assessment
<p>Achieve 60 marks out of 100 marks to receive merit award.</p> <p>The scope of assessment covers:</p> <ol style="list-style-type: none"> 1. Understanding of drawing and specification of work 2. Preparation prior to work and protection to work site 3. Works procedure, accuracy and quality 4. Application and handling of materials 5. Proper use of tools and equipment 6. Housekeeping after work and final touch-up on work before handover <p>The judging panel will consider the handover time of completed test project to decide the ranking in case of same score received in technical assessment part.</p>	<p>Passing Requirement is 60 marks out of 100 marks</p> <p>Competitors must fulfil the passing requirements of Risk Assessment and Safety Practice Assessment to receive champion, 1st runner-up, 2nd runner-up and merit award.</p>

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C. Notes to Competitors (Cont.)

2. Technical Guidelines

- 2.1 Use Electrode E7016 for both tack weld and weld.
- 2.2 The workpiece once combined, Competitors should strengthen and stabilise the workpiece by tack welding on their own afterwards, and the turning over of work pieces is not allowed for tack welding.
- 2.3 Please weld at the designated position according to the drawing after the completion of tack welding. Competitors are not allowed to flip, to turn over and to move the workpiece during welding.
- 2.4 A connection amid both pipes from head to tail at 5G position through penetrating weld and no return;
- 2.5 The weld beam should be without defects of slag inclusion, porosity welding, undercut, overlapping, crack and arc strike after weld completed.
- 2.6 The inaccuracy does not exceed 5mm to vertical or horizontal after the combination of workpieces.
- 2.7 All weld slags and weld spatters should be removed after the completion of weld, otherwise, the weld bead should be preserved as original, also it will lose credits as rewelding or repair. The process of grinding to weld bead only in use of cleaning with wire brush.
- 2.8 All welds should be tested by visual inspection.

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C. Notes to Competitors (Cont.)

3. Safety and Environmental Instructions

- 3.1 Safety constitutes one of the assessment 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.
- 3.2 In case of emergency (e.g. fire), the Competition will be halted. Competitors should evacuate according to the instructions of fire warden (personnel wearing red safety helmets) at the venue.
- 3.3 Bring and wear proper clothing and safety shoes. Other safety equipment will be provided at the venue.
- 3.4 Competitors should wear the safety helmet with chinstrap provided by the organiser during the Competition.
- 3.5 Competitors should apply for the “Hot Work Permit” via judges ahead of any hot work, who will get approval and begin hot work if the inspection before work and related safety measures are confirmed and satisfied.
- 3.6 Competitors must wear or use personal protective equipment which is offered by the organiser according to the work needs, for instance, to wear headgear or face shield while welding, to wear goggles and ear plug while grinding metal, moreover, do not wear cotton gloves if such tools or machine its function involved rotational momentum.
- 3.7 Competitors should inspect the workplace, equipment, tools and materials, and safety equipment and complete a risk assessment ahead of work, in case of any abnormal situation are found, competitors must immediately report to on-site officer to process further.
- 3.8 Competitors should provide appropriate and temporary protection to the workplace, contexts and facilities ahead of work to beyond from damage and influence. Please clean up tools and equipment offered by the organiser and return it in the original place together with temporary protection removal, and report to on-site officer once the safety to workplace is confirmed.
- 3.9 Foods and drinks are not allowed in the site but drink water would be offered by the organiser.
- 3.10 If competitors do not feel well or get injured, which must report to on-site officer in order to arrange first aider to help, and
- 3.11 The organiser will prepare a sufficient number of materials, competitors must make great use of tools and materials to optimise resources, therefore, all used tools and materials in work will be recycled in a purpose after work.

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D. Reference List of Tools

Item no.	Item	Quantity
1	VRD AC / DC ND-300 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-inch grinder discs	1
13	4-inch portable grinder	1

E. Reference List of Materials

Item no.	Item	Quantity
1	Electrode E7016 #10 (Ø 3.2)	Limited Supply
2	Work pieces	1 set

F. 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
10	Light barrier	1
11	Local exhaust ventilation	1

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G. Contact Information

For any enquiry of this handbook, please refer to the competition website:

https://www.cic.hk/eng/main/aboutcic/news_and_updates/events/calendar/event-716.html



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