



CONSTRUCTION
INDUSTRY COUNCIL
建造業議會

Metal Worker Skilled Trade Test Mock Practical Test Paper

此文件關於金屬大工工藝測試考題。如有需要索取此文件的中文版本，請致電 2100 9000 與香港建造業工藝測試中心聯絡。

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Trade Test Paper

Post : Metal Workers

Grade : Skilled Worker

Test Contents : Complete the following tasks at designated location, according to the attached drawings and the requirements.

1. Fabricate a stainless steel rectangular frame **【Drawing No. 1】** (25%)
 - i) Use tools & equipment properly to cut off the material.
 - ii) Use appropriate electrodes, current and welding machine.
 - iii) Grind welded work piece to hairline surface.

2. Fabricate & install handrail with elbows **【Drawing No. 2】** (30%)
 - i) Use tools & equipment properly to cut off the material.
 - ii) Use appropriate electrodes, current and welding machine to install and weld the handrail at designated location.
 - iii) Grind welded surface flat to work piece after welding.

3. Marking out development “Lofting” **【Drawing No. 3】** (20%)
 - i) Use appropriate material, tools to mark out development.
 - ii) The marking should be put on the metal sheet for assessment.

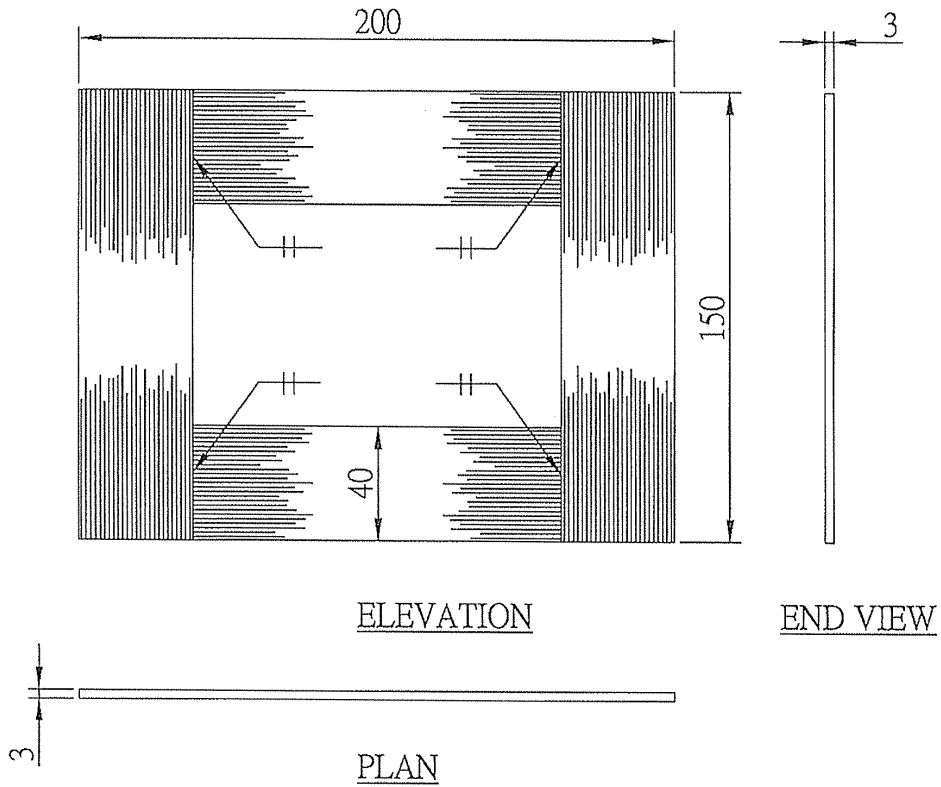
4. Fabricate a mild steel triangular frame **【Drawing No. 4】** (25%)
 - i) Use tools & equipment properly to cut off the material.
 - ii) Use appropriate electrodes, current and welding machine.
 - iii) Grind welding surface flat to work piece.

Duration : 6 hours (excluding one-hour lunch time)

Notes : (1) Candidate shall read the attached test requirements carefully;
(2) Candidate will be marked as fail if he does not carry out safety precautions during the test;
(3) The test paper consists of 6 pages. Total score is 100. Pass mark is 60.

Drawing No. 1

(Fabricate stainless steel rectangular frame)



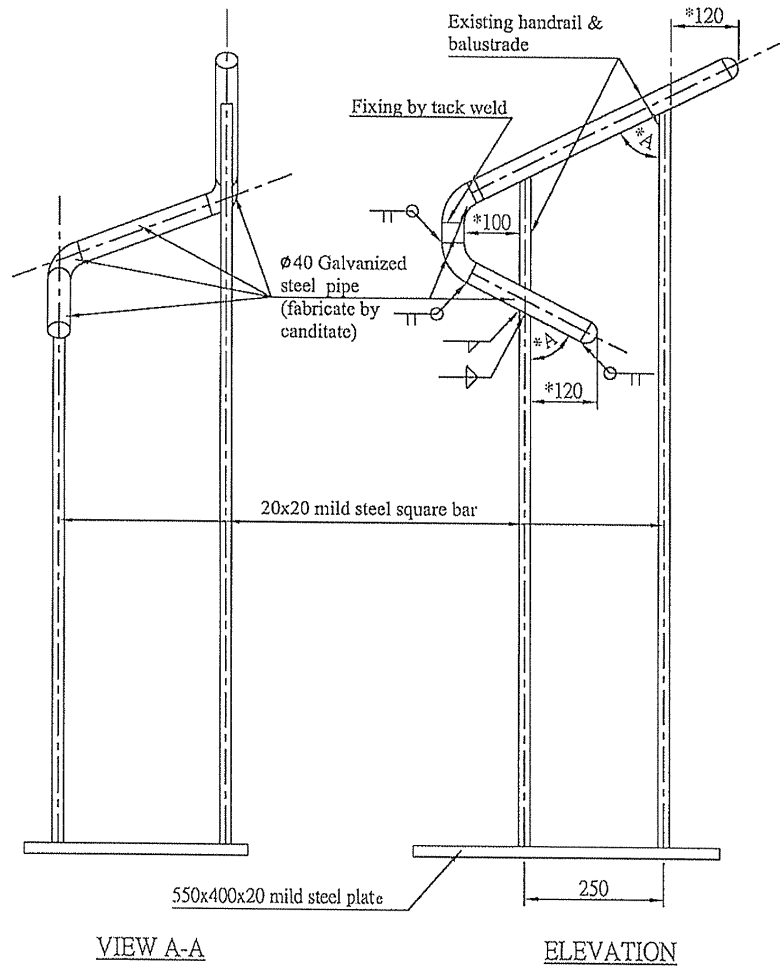
Quality Requirements :

1. The tolerance of frame dimension shall be $\pm 1.5\text{mm}$
2. All welds shall be free from crack after grinding
3. Frame shall be in right angles, $\pm 1.5\text{mm}$ in 200mm length
4. The tolerance of flexure shall be $<1\text{mm}$
5. Grind welding surface flat to workpiece, the tolerance of smoothness shall be $\pm 0.6\text{mm}$, pore with $1\text{mm } \phi$ more than 3 pcs and excessive undercut are not allowed
6. Appear hair line surface after grinding

Not to scale
All dimension are in mm

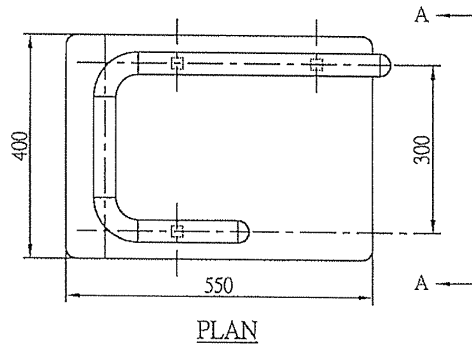
Drawing No. 2

(Fabricate & install handrail with elbow)



Quality Requirements :

1. The tolerance of * symbol's dimension shall be $\pm 3\text{mm}$
2. All welds shall be free from crack & porosity
3. Grind all welding surface flat to workpiece

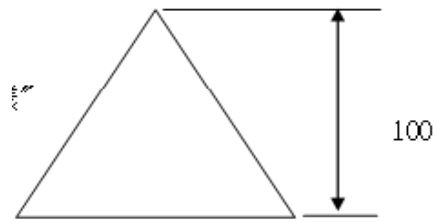


Not to scale
All dimension are in mm

Working Drawing 3 for Metalworker
Trade Test

Creating a developed view “setting-out”

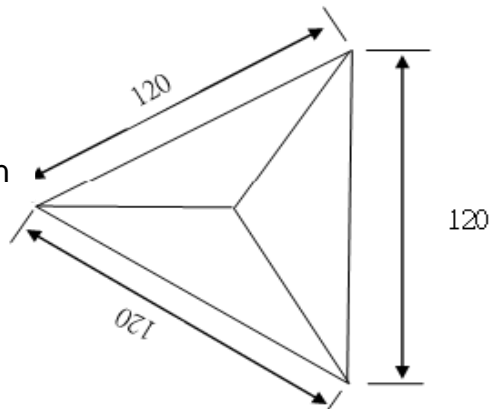
According to the view below, create the developed view “setting-out” of a regular triangular pyramid
Set out on a thin sheet iron to create the developed view



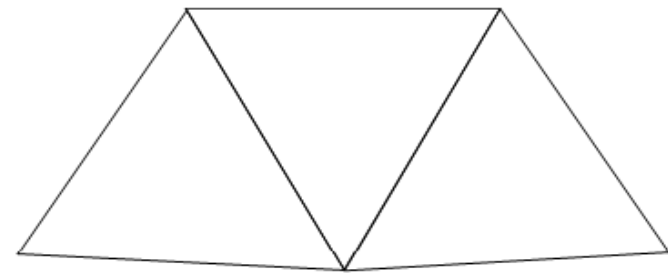
Elevation

Technical Requirements:

1. The allowable error for those measurements shown



Layout Plan

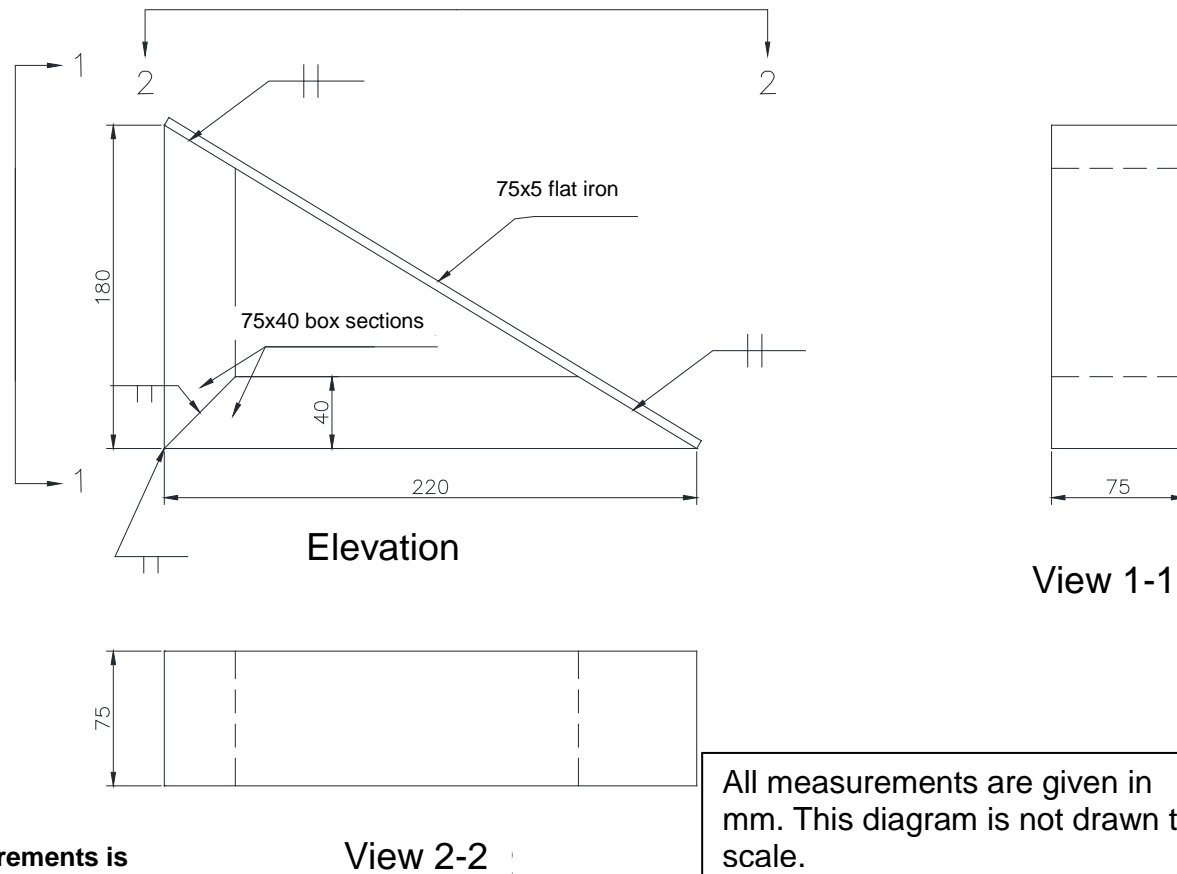


Developed View upon Completion
(for reference only)

All measurements are given in mm. This diagram is not drawn to scale.

Working Drawing 4 for Metalworker Trade Test

Fabricating a triangular iron frame



Technical Requirements:

1. The allowable error for length and width measurements is $\pm 1.5\text{mm}$.
2. Upon polishing, the welding positions must not present any cracks.
3. The allowable error for perpendicularity is $\pm 1.5\text{mm}$ within a length of 180mm.
4. Upon polishing, the allowable surface protrusion/depression at welding positions is $< 0.6\text{mm}$ and less than 3 apertures of 1mm are

Notes to Candidates :

1. Candidates should read the test papers carefully and ask the invigilator for any queries.
2. Candidates should study the drawings and specifications attached to test papers, if any, before the test begins.
3. Candidates should carry out the test according to test papers, working drawings and specifications provided.
4. Candidates shall bring their own safety shoes, other safety equipment will be provided by trade testing centre. Candidates must take all necessary safety precautions to ensure work safety.
5. All tools and materials required by the test will be provided by trade testing centre, candidates should check and ensure their adequacy and quality. Candidates shall use the tools and materials properly based on trade practice. All the tools must be returned to trade testing centre after the test. The candidates may ask the invigilator for any problems.
6. Candidates are required to handle and move the tools and materials for use in the test, and to carry out associated works.
7. Invigilator will take record photos periodically during the test.
8. Candidates are not allowed to take any photo or video with cameras or mobile phones.
9. Candidates are not allowed to use their mobile phones during the trade tests, except for emergency situation.
10. The marking scheme is based on the following criteria :

- a) Understanding of drawing and specification
- b) Preparation works before commencement of test
- c) Working procedures
- d) Accuracy and quality of works
- e) Progress of works
- f) Proper handling and use of materials
- g) Proper use of tools and equipment
- h) Safety precautions
- i) Considerate of other trades
- j) Housekeeping after completion of test

11. All candidates must stop when time is up.

12. Candidates are required to return the test paper to invigilator after the test.

13. Offering bribe to invigilator is an offence in law and trade testing centre will report to the ICAC for any such case.

In the event that the candidate fails to take any necessary safety precautions and / or works in any dangerous situations, he / she will be assessed failed