

# Trade of Metal Fabrication

Module 4:	Structural Steel Fabrication
Unit 7:	Portal Frames
	Phase 2



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## Document Release History

Date	Version	Comments
02/02/07	First draft	
13/12/13	SOLAS transfer	

## Module 4 – Structural Steel Fabrication

### Unit 7 – Portal Frames

Duration – 15 Hours

#### Learning Outcome:

By the end of this unit each apprentice will be able to:

- Read and interpret drawing
- Fabricate and weld a portal apex (with haunch)
- Identify the reasons for using portal frames
- Describe the turning effect of a force
- Set out a portal apex on the floor

#### Key Learning Points:

<input type="checkbox"/> <input checked="" type="checkbox"/> Sk	Floor setting by using chalkline to find angles. <i>(Instructor covers in class).</i>
<input type="checkbox"/> <input checked="" type="checkbox"/> Sk	Setting a perpendicular by 3/4/5 – 6/8/10. <i>(Instructor covers in class).</i>
<input checked="" type="checkbox"/>	Theory of Pythagoras - calculations. <i>(For more information see Module 4 Unit 2).</i>
<input checked="" type="checkbox"/> <input type="checkbox"/> Sc	Turning effect of force. <i>(For more information see Module 4 Unit 1).</i>
<input type="checkbox"/> <input checked="" type="checkbox"/> Rk	Identification and description of fasteners used in structural steelwork.
<input type="checkbox"/> <input checked="" type="checkbox"/> Rk	Gussets and stiffners - purpose and uses.
<input type="checkbox"/> <input checked="" type="checkbox"/> Rk <input type="checkbox"/> D	Template making for haunch.
<input checked="" type="checkbox"/> <input type="checkbox"/> Sc <input type="checkbox"/> RK	Portal frame uses in structural steelwork and its advantages and disadvantages.
<input type="checkbox"/> Sk	Drilling, assembly and welding.
<input checked="" type="checkbox"/> <input type="checkbox"/> Sk	Measurements and backstepping on tape measure.
<input checked="" type="checkbox"/> P	Ability, initiative, teamworking, standard of work, safety awareness.

**Training Resources:**

- Fabrication workshop and equipment, safety clothing and equipment, classroom and drawing equipment, chalkline, instructor lectures and demonstrations
- Handouts, transparencies
- Safety notes on mechanical handling
- Materials as stated on drawing

**Key Learning Points Code:**

**M** = Maths      **D** = Drawing      **RK** = Related Knowledge      **Sc** = Science

**P** = Personal Skills      **Sk** = Skill      **H** = Hazards

## **Self Assessment**

Questions on Background Notes – Module 4.Unit 7

**No Suggested Questions and Answers.**

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