Overview

This standard is about marking out to the required specification within the occupations of mechanical fitting, pipefitting and fabricating steel structures in the engineering construction industry.

You will need to be able to mark out materials to specification as part of a standard preparation prior to undertaking further fabrication, shaping or fitting activities whilst adhering to health and safety legislation, regulations and safe working practices.

In the context of this standard, your responsibility is to interpret and work within given specifications, selecting techniques and making variations to achieve the best possible result. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

Who this standard is for
This standard is for Mechanical Fitters, Pipefitters and Platers.
ECIIPSM06
Mark out to the required specification in engineering construction

Performance criteria

You must be able to:

P1 work safely at all times, complying with health and safety and other relevant legislation, regulations, guidelines and local rules or procedures
P2 ensure that the work environment, material, tools and equipment are suitably prepared for the work activities to be undertaken
P3 establish the task to be undertaken
P4 obtain and use the correct information for marking out
P5 prepare suitable datum and marking out surfaces
P6 mark out using appropriate methods and tools
P7 check that marking out complies with the specification
P8 reinstate the work area
P9 deal promptly and effectively with problems within your control and report those that cannot be solved
ECIIPSM06
Mark out to the required specification in engineering construction

Knowledge and understanding

You need to know and understand:

K1 relevant legislative, regulatory and local requirements or procedures and safe working practices
K2 preparation and reinstatement requirements in respect of the work area, material, and equipment, and the possible consequences of incorrect actions in these areas
K3 **engineering drawings and related specifications**
K4 material handling techniques and preparation methods
K5 the tools, techniques and methods used for marking out
K6 surface preparation requirements
K7 geometrical construction methods
K8 your responsibilities for ensuring care and security of tools and equipment used
K9 your responsibilities with regard to reporting lines and procedures in your working environment
## Additional Information

### Scope/range

**Work environment**

Typical work environments *could* include:

1. at height
2. confined spaces
3. controlled operational and offshore installations
4. designated work areas
5. engineering construction sites
6. existing plants and structures
7. fabrication workshops
8. nuclear power stations
9. onshore and offshore installations
10. potential explosive atmospheres
11. shafts
12. shipyards
13. tunnels
14. working on access structures (scaffold)
15. working inside plant and systems

### Appropriate methods

Appropriate methods for marking out *could* include:

1. non-permanent
2. permanent
3. precision marking
4. rough marking
5. string lines

### Reinstate the work area

This term *could* include:

1. returning the work area to a safe condition
2. correctly disposing of waste materials
3. storage of reusable materials, consumables and equipment in accordance with appropriate procedures
4. completion of all necessary documentation
ECIIPSM06 Mark out to the required specification in engineering construction

Engineering drawings and related specifications

Engineering drawings could include:
1. assembly
2. component
3. general arrangement
4. isometrics

Specifications could include:
5. method statements
6. manufacturers’ instructions
7. product worksheets

Links to other NOS

Fabricating Steel Structures – Plating
Installing Plant and Systems – Pipefitting
<table>
<thead>
<tr>
<th><strong>Mark out to the required specification in engineering construction</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developed by</strong> Engineering Construction Industry Training Board</td>
</tr>
<tr>
<td><strong>Version number</strong> 2</td>
</tr>
<tr>
<td><strong>Date approved</strong> February 2013</td>
</tr>
<tr>
<td><strong>Indicative review date</strong> February 2017</td>
</tr>
<tr>
<td><strong>Validity</strong> Current</td>
</tr>
<tr>
<td><strong>Status</strong> Original</td>
</tr>
<tr>
<td><strong>Originating organisation</strong> Engineering Construction Industry Training Board</td>
</tr>
<tr>
<td><strong>Original URN</strong> NIPSMECH6ECRS4.04</td>
</tr>
<tr>
<td><strong>Relevant occupations</strong> Mechanical Fitter; Plater; Pipefitter; Trayfitter; Pipe Fitter; Tray Fitter; Plater;</td>
</tr>
<tr>
<td><strong>Suite</strong> Installing Plant &amp; Systems – Mechanical; Fabricating Steel Structures (Plating);</td>
</tr>
<tr>
<td><strong>Key words</strong> Engineering drawings; conventions; geometrical construction methods; marking out; tolerances; preparation; Plating;</td>
</tr>
</tbody>
</table>