
Overview

This Unit is concerned with carrying out measured surveys. This Unit will test your mathematical knowledge and your competence with surveying instruments. It is about making the preparations, finding out what needs to be surveyed, obtaining the suitable equipment and the spares, and briefing affected parties beforehand about the work.

You must know what the survey consists of, what equipment you will need, and who will need the results. It is about doing the survey work accurately and recording and calculating observations and measurements. You will need to produce clear and accurate records of your work, and of the time you spent doing it.

It is about checking your survey records, and collating and presenting them to those who need them. You must be able to analyse your field surveys, and present a report to those who need it.

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Performance criteria

You must be able to:

Prepare for measured surveys

- P1 confirm the extent of the measured survey and the survey method before starting work
- P2 arrange for suitable equipment, and enough spares for on site maintenance, to be brought to the site and kept safely and securely
- P3 check and adjust equipment so that it is accurate before it is used for taking measurements
- P4 brief the people who will be involved in the survey about the survey arrangements and the safety arrangements
- P5 check and confirm that signs, arrangements for personal safety, equipment and site access conform to good practice, legislation and regulation

Carry out measured surveys

You must be able to:

- P6 conform to safe working practices when on the site
- P7 set accurate horizontal and vertical controls and record them
- P8 take accurate observations and measurements using valid methods
- P9 change work procedures and practices to allow for different circumstances and conditions
- P10 record survey data clearly and accurately and store it securely for later analysis and inspection
- P11 keep a clear and accurate record of the time spent on the survey and of any problems that arise
- P12 maintain the equipment in operating condition and store it securely
- P13 restore areas which have been opened up for access

Analyse and present measured surveys

You must be able to:

- P14 collect together enough survey information to allow an accurate analysis to be made
- P15 check and verify the survey information
- P16 analyse the survey information accurately
- P17 present the survey information, the commentary and any support information accurately, clearly and in a format which is suitable for those who need to use it

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P18 advise people who will be using the survey information on how to interpret it

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Knowledge and understanding

You need to know and understand:

Prepare for measured surveys

- K1 how to confirm the extent of the measured survey and the survey method before starting the work (application)
- K2 how to arrange for suitable equipment, and enough spares for on site maintenance, to be brought to the site and kept safely and securely (application)
- K3 how to check and adjust equipment (application)
- K4 how to brief the people who will be involved in the survey about survey arrangements and the safety arrangements (application)
- K5 how to check and confirm that signs, arrangements for personal safety, equipment and site access conform to good practice, legislation and regulations (application)

Carry out measured surveys

You need to know and understand:

- K6 how to conform to safe working practices when on the site (application)
- K7 how to set and record accurate horizontal and vertical controls (application)
- K8 how to take accurate observations and measurements (application)
- K9 how to change work procedures and practices to allow for different circumstances and conditions (application)
- K10 how to record and store survey data (application)
- K11 how to keep a clear and accurate record of the time spent on the survey and of any problems that arise (application)
- K12 how to maintain the equipment in operating condition and store securely (application)
- K13 how do you restore areas which have been opened up for access (application)

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Analyse and present measured surveys

You need to know and understand:

- K14 how to collect together enough survey information to allow an accurate analysis to be made (application)
- K15 how to check and verify the survey information (application)
- K16 how and why to analyse the survey information (analysis)
- K17 how to present the survey information, the commentary and any support information accurately, clearly and in a format which is suitable for those who need to use it (application)
- K18 how and why to advise people who will be using the survey information on how to interpret it (synthesis)

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Additional Information

Scope/range

Prepare for measured surveys

1. Method:

- 1.1. approximate measured
- 1.2. detailed measurement of all specified features

2. Equipment:

- 2.1. mechanical
- 2.2. optical
- 2.3. electronic

3. People

- 3.1. colleagues
- 3.2. external contractors
- 3.3. people and organisations who may be affected by the survey

4. Survey arrangements:

- 4.1. risk assessment
- 4.2. survey responsibilities
- 4.3. details of the survey method
- 4.4. the site
- 4.5. the equipment
- 4.6. calibration certificates

5. Safety:

- 5.1. personal safety
- 5.2. equipment and clothing
- 5.3. safe use of access equipment
- 5.4. health and safety practice and regulations
- 5.5. industry codes of practice
- 5.6. regulations applying to the survey site
- 5.7. signage
- 5.8. site access to working areas
- 5.9. traffic management
- 5.10. live services and equipment

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6. Safe working practices:

- 6.1. personal safety
- 6.2. equipment and clothing
- 6.3. safe use of access equipment
- 6.4. health and safety practice and regulations
- 6.5. industry codes of practice
- 6.6. regulations applying to the survey site
- 6.7. signage
- 6.8. site access to working areas
- 6.9. traffic management
- 6.10. live services & equipment

7. Circumstances and conditions:

- 7.1. climatic (variations, tolerances and environmental risks)
- 7.2. live conditions (e.g. buildings and sites in use, services, roads, railways, runways)
- 7.3. unforeseen circumstances
- 7.4. emergency circumstances
- 7.5. topography
- 7.6. water
- 7.7. obstacles
- 7.8. planned circumstances
- 7.9. security

8. Equipment:

- 8.1. mechanical
- 8.2. optical

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9. Survey information:

- 9.1. electronic
- 9.2. approximate measured
- 9.3. detailed measurement of all specified features
- 9.4. graphic

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10. Present:

- 10.1. orally
- 10.2. in writing
- 10.3. graphically
- 10.4. digitally

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