

“UKWF Approved Engineer”

This is a draft note for the potential “UKWF Approved Engineer” certificate delivered and accredited by the Trading Standards Institute. It is intended that this proposal should be seen as part of a raft of proposals, including the in-service inspection document, and the suggestion that the UKWF become involved in the Primary Authority process.

It is hoped that the “UKWF Approved Engineer” would raise both the quality of the engineers used by our members, but also raise the profile of our member enabling to use the certificate to be used as something to distinguish our businesses from other market operators.

A) Potential Syllabus

Aim:

To provide the candidate with the means to achieve the learning outcomes below:

Learning Outcomes:

At the end of this module, the student will be able to demonstrate knowledge of:

1. The legal metrology infrastructure including national, EU and International frameworks for its provision (including appropriate legislation).
2. Measurement principles relating to mass.
3. Care, maintenance, calibration and use of engineers equipment
4. Principle of operation of weighing and measuring equipment in trade use

UNITS AND STANDARDS

Working Knowledge of;

- The principles of S.I units, national and international standards
- The process of calibration and traceability of standards
- The construction, maintenance, handling and testing of standards used in the engineers work as outlined in the NMO specifications and relevant legislation.
- The concepts of accuracy and uncertainty in standards.

WEIGHING AND MEASURING EQUIPMENT

Working Knowledge of;

- Principles of operation, metrological requirements and the conformity assessment of the types of instrument supplied by the manufacturer or supplier
- Principles of verification and procedures outlined in EN45501 in relation to the instruments supplied by the manufacturer or supplier
- An understanding of the type and format of Type Approval Documents
- An understanding of the type and format of Declarations and Certificates of Conformity
- An understanding of the type and format of Compatibility of Modules statements (where relevant)

WEIGHTS AND MEASURES LAW

Working Knowledge of;

- An awareness of the potential criminal offences that may be committed under the legislation relating to the verification and use of weighing equipment.
- An understanding of the legal metrology frameworks in the UK and the EU
- The role and responsibilities of Trading Standards Officers
- The role and responsibilities of self-verifiers under national and EU Legislation.

B) How will this be achieved?

Framework of the examination

It is proposed that the examination would be composed of two parts.

Part A: Would be written report completed by the candidate during the verification of an instrument. It would need to be detailed and cover all aspects of the process.

It is proposed that it would include a number of headings that would steer the candidate in the direction of the knowledge that would be required in the particular section and a specific number of marks would be allocated to each section.

Part B: Would be an examination that would be in two sections. The first section would be a number of short definition questions that would be worth 25% of the marks. The second section would be written answers that would enable the candidate to display further knowledge. It is suggested that the candidate would need to achieve the pass mark on both sections.

C) Method

Part A would be completed at the convenience of the candidate. It would be submitted to the examiner for marking. It is proposed that the UKWF Technical Officer accredited by TSI would be the initial examiner. If the candidate did not achieve sufficient marks it would be returned so that appropriate additions could be made. This would give the candidates the opportunity to learn and develop from the process at their own rate.

Part B would be an examination that would be available to sit at first twice a year. This could either be done at the business premises of the candidate or a separate examination centre could be set up. If the examination were taken at the premises of the candidate it would need to be confirmed by a senior member of staff that examination conditions had been complied with.

If the examination were failed the candidate would need to retake the exam at the next opportunity.

The examination would be written and marked by the technical officer of the UKWF who would be accredited by TSI. (It is hoped that the nature of the examination could be tailored to meet the requirements of the type of business so, for example their would be a paper that would be tailored to heavy weighing, or automatic weighing instruments.)

D) Accreditation

It is hoped that one of the major elements of the examination process would be accreditation from an Awarding body. At the moment it is proposed that this would be the Trading Standards Institute (TSI) with support from the NMO. This would give the examination process a greater credibility to other stakeholders in the market place and bring the potential for a marketing advantage to those businesses that use accredited engineers.

This accreditation would involve all Parts of the assessment processes being moderated by a legal metrology expert in the Trading Standards Institute with the Awarding Body of the TSI will ratifying the results and producing certification. The results will also be published.

This would give us the added benefit of being able to demonstrate that our engineers are operating to a standard that has been approved by the enforcement communities.

E) Proposed framework for the Part A written report

It is suggested that this will be approximately three to four pages long and the candidate would be expected to complete the following headings. I would propose 20 marks per section (Per piece of equipment?)

1) Legal background

- a) Awareness of the relevant Directive: either 2009/23/EC or 2004/22/EC.
- b) Awareness of the relevant UK Regulations: e.g. Non-Automatic Weighing Instruments Regulations.
- c) Awareness of the role of the business in self-verification and the role of the notified body.
- d) Awareness of the marks that will be on the instrument and the marks that will be applied to the instrument and the significance of those marks.

2) Documentation

- a) Correct understanding of the Type Approval Certificate and the how the information in these document should be used.
- b) Understanding of the need to have available any Test Certificates or Compatibility of Modules Statements.
- c) Need to have relevant Declarations of Conformity available before the verification is undertaken.
- d) Understanding of the correct documentation that must be used when recording the results of the verification.

3) Equipment

- a) Understanding of the requirements of the weights necessary to undertake the tests and the requirements of test certificates.
- b) Awareness of the need to ensure care and regular calibration of weights.

4) Health and safety considerations

- a) Awareness of the risk assessment documents.
- b) Awareness of the necessary Health and Safety equipment.

5) How to complete verification

- a) A clear understanding of the procedures to carry out verification in accordance with the procedures operated by the business and the requirements of EN45501.

6) How to complete a calibration

- a) A clear understanding of the calibration procedures operated by the business.

F) Proposed example of an examination paper for Part B

Section A of the examination paper will be a number of short questions. Some examples of the types of questions are.

- a) What is a Declaration of Conformity and why is it important?
- b) What is the European Directive that applies to your work?
- c) What are the regulations that apply to you work and where can you find them?
- d) Which organisation gives you the approval to undertake self-verification?
- e) What does the number that you apply to the weighing instrument after you have verified it mean?
- f) What is a type approval document and why is it important?
- g) What information would you expect to see on a type approval document?
- h) What does the symbol III mean?

Section B of the examination paper would be more open and may take the following form:

- a) You have been asked to carry out a service visit on a weighbridge and find that you have to change a load cell. Explain what actions you would take after you have done this.
- b) You have been asked to carry put verification on a 15kg shop scale for export to Italy. Explain the actions you would take.