

## Portfolio

### Legal Metrology Service Delivery Module Technical Skills Portfolio

#### Part 1 - Introduction:

This portfolio is designed to allow you as a candidate to demonstrate specific skills related to an Inspector of Weights and Measures, which are in addition to the fundamental generic skills assessed by the Core Skills Portfolio. This portfolio should be completed alongside any examination requirements for this subject.

To complete a Service Delivery Module and be awarded the module certificate you must have completed the Core Skills in Consumer Affairs and Trading Standards (CSCATS) Award as well as all the requirements for this Service Delivery Module subject.

Evidence which you have used in the Core Skills Portfolio may also be used in the Service Delivery Modules Skills Portfolios, provided it meets the appropriate criteria, and you can use the same piece of evidence more than once in the portfolio.

Generally you will be expected to demonstrate the skill being assessed to the satisfaction of your Assessor and Verifier, but it is possible that some skills may be difficult to demonstrate doing a normal range of duties. If this is the case then, where appropriate, your skills may be assessed using verbal or written questions.

#### Part 2 - National Measurement Regulatory Office (NMRO) Examinations

Candidates and authorities need to be aware that all equipment listed in Appendix A can be examined upon by NMRO. Some of the listed equipment is marked as optional for completion in the portfolio, but NMRO may still ask the candidate questions about that equipment in the oral or practical elements within the examination. It is therefore important that candidates know the legal controls over all the equipment listed in the Appendix. For example, taximeters are listed as optional. Although there is no requirement for a candidate to actually test a taximeter, they should know what they look like, what controls apply to them and what the testing regime is.

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The **skills outcomes** which this portfolio is intended to demonstrate, once completed are:

1. The ability to identify and define product, equipment and components, their context and use.
  2. The ability to demonstrate a practical interpretation of the legislative framework which applies to the keeping, sale or supply of products such as packaged goods and goods from bulk etc.
  3. The ability to test equipment and assess goods, whilst demonstrating appropriate risk analysis and hazard mitigation, whilst complying with any other sector specific health, safety, hygiene or bio-security requirements.
  4. The ability to demonstrate the practical skills which provide solutions to practical problems
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In completing the portfolio the following is the minimum for which you will need to provide evidence. The evidence provided should be, as far as possible, part of the day-to-day work of the Service or Organisation. You should carry out as many activities as deemed necessary by your Service or Organisation and Assessors and Verifiers to ensure that you can demonstrate the required skills competencies in your normal area of work.

## Part 2 - Assessment Criteria

### **Task A Identification and assessment of local and working standards and testing equipment**

The suggested way of doing this will be for you to participate in the assessment and validation of a variety of standards used in the delivery of metrological services; and demonstrate an understanding of how such standards integrate into the infrastructure of legal metrology in the UK.

**The minimum number of matters to be looked at across the whole of the portfolio is stated in part 3 required activities and Appendix A.**

You must be able to provide evidence of the following:

- A1. That you were able to identify the standard and at what 'level' it sits in the hierarchy, the appropriate legislation and all of the relevant codes of practice, standards and procedures applicable.
- A2. That you exhibited sound practical application of the skills necessary to assess the standard in question in terms of legislation and standards.
- A3. That you took account of the influence factors that could affect the results of assessments.
- A4. That you used and stored the standards appropriately and assessed at the appropriate frequency.
- A5. That you performed testing to the required standard.
- A6. That you were able to take any required rectification work following the assessment.

## **Task B Identification and assessment of metrological equipment**

The suggested way of doing this will be for you to examine a wide variety of equipment in use for trade, identifying the legal and practical controls on the equipment, evaluating and testing the equipment, and taking appropriate action regarding the results.

**The minimum number of matters to be looked at across the whole of the portfolio is stated in part 3 required activities and Appendix A.**

You must be able to provide evidence of the following:

- B1. That you identified the equipment and its use correctly and applied all relevant legislation, standards and codes of practice.
- B2. That used the correct tools and equipment to carry out any assessment.
- B3. That you recorded the results of your examinations in an appropriate manner.
- B4. That you recognised and took the appropriate action arising from the results of your examination and testing and showed that you understood the impact of your decisions.
- B5. That you understood and took account of the factors, such as environmental issues, that influence the risk of equipment failure, and thus, re-inspection periods.

### **Task C Identification and testing of goods sold by reference to quantity**

The suggested way of doing this will be for the candidate to examine and test a wide variety of goods that have been marked with an indication of quantity or purport to be a particular quantity for compliance with weights and measures legislation.

**The minimum number of matters to be looked at across the whole of the portfolio is stated in Part 3 and Appendix A.**

You must be able to provide evidence of the following:

- C1. That you were able to identify whether the goods were packed to the average or minimum quantity system.
- C2. That you identified all relevant standards, guides and sources of advice relevant to the goods under test.
- C3. That you correctly identified the necessary equipment required to undertake tests, and demonstrated competent usage of it.
- C4. That you performed appropriate testing on the goods to determine compliance.
- C5. That you identified and took account of all of the factors which might affect the weight of the product and cause it to be non-compliant.
- C6. That you took the appropriate action with regard to non-compliant product.

## Part 3 - Required Activities

In completing the portfolio the following is the minimum for which you will need to provide evidence. The evidence provided should be, as far as possible, part of the day-to-day work of the Service or Organisation. You should carry out as many activities as deemed necessary by your Service or Organisation and Assessors and Verifiers to ensure that you can demonstrate the required skills competencies in your normal area of work.

- The standards assessed should cover a range of mass, length and volume and a cross section of the different accuracy levels and nominal values of standards used in legal metrology.
- You must be able to demonstrate an ability to use all metrology equipment and methods of test and interpret the results.
- You should examine and test a range of equipment that utilises different technologies, and different levels of accuracy and those which require specific approaches, in a variety of commercial environments and uses.
- You should examine and test a total of **25 different pieces of equipment** across the following categories:
  - Weighing equipment including electronic comparator.
  - Automatic weighing
  - Metering systems for a variety of commodities
  - Length and dimensional measurements
  - Capacity and volume
  - Mass

**This is the minimum number of pieces of equipment which needs to be tested. It is up to the Authority, Verifiers and Assessors to ensure you are sufficiently competent.**

**See table in Appendix A for guidance on the equipment to be examined and tested.**

- You should undertake a minimum of **15 tests** from a selection of goods packed under the average and minimum quantity systems, including those weighed on demand, and should also include non pre-packed goods sold by weight, volume and/or length.

- In examining and testing goods you will need to cover **one** of each of the following:
  - block product,
  - particle product,
  - aerosols,
  - fruit and vegetables,
  - frozen product,
  - Glazed frozen product (in accordance with WELMEC Guide)
  - desiccating product,
  - bread,
  - drained net weight (in accordance with WELMEC Guide)
  - a large volume product (e.g soil, gravel etc).
  - Gaseous product sold by volume (in accordance with OIML Document)
  - Density determination of a volume product (in accordance with OIML Document)
  - Reference test or screen test under PGR
  - Volume of product in MCB

The above goods and associated tests may be asked by NMRO in the practical examination so the candidate should ensure that they know the relevant testing methods.

### **Organising portfolios:**

Any piece of work evidence may be used more than once for different assessment criteria or learning outcomes if it provides acceptable evidence for them (and may also be used in specialist portfolios if it meets the specific criteria contained within).

At the end of each Task the assessment criteria asks for evidence of reflection by you on your performance. You should critically examine your own experience and performance in the professional context, judge what went well and what did not go well, and then identify how this can be used to improve your professional performance in the future. This process may be facilitated through discussion with your assessor and/or mentor, or by your own personal reflection, and then making a written record of this process and including it in the portfolio.

# Trading Standards Qualifications Framework

## Equipment checklist for metrology module competency

Candidates Name

Obligatory 

At least one from 

Optional 

Planned date






Own Authority

Other Authority

Date of test

Date signed off

### 1. Non Automatic weighing Equipment

Non self indicating counter machine	<b>One from this block</b>					
Non self indicating deadweight machines						
Mechanical self indicating						
Light/ heavy or trade comparator						
Self indicating nawi under 30kg						
Self indicating nawi (Medical Weighing)						
Self indicating nawi under 30kg with EPOS						
Self indicating nawi over 1,000kg						
Weigh Pads						
Self indicating nawi over 20,000kg						
Counting machine						
Multirange nawi	<b>One from this block</b>					
Multiinterval nawi						
Class I nawi	<b>One from this block</b>					
Class II nawi						
Equal armed Beam scale						
TSS Balance of precision						
Comparator						



**2. Automatic weighing Machines**

	Planned date	Own Authority	Other Authority	Date of test	Date signed off
Automatic checkweighers					
Catchweighers					
Automatic Gravimetric Filling machines Automatic filling machine	One from this block				
Discontinous totalisers Dynamic axle weighers Automatic Rail weighers On board weighers Belt weighers	One from this block				

**3. Metering systems for a variety of commodities**

Bulk fuel Meter system					
Beer Measuring Instrument					
LFMI with EPOS					
LFMI with Cruciform Meter LFMI with STA LFMI with electronic calibration	One from this block				
Water Meter					

**4. Dimensional and length measuring Instruments**

		Planned date	Own Authority	Other Authority	Date of test	Date signed off
Standard One metre rigid length measure						
Standard Tape (any trade or working standard)						
Material Measures of length						
2D or 3D dimensional test machine						
Measuring wheels						

**5. Volume**

Intoxicating liquor SMI						
MCB						
Graduated Cylinder						
Thimbles	One from this block					
Capacity Serving measures						
Cubic Ballast measures						
LPG Coriolis Meter						
Tyre pressure gauge						
Working Standard using pipette	One from this block					
Working Standard by gravimetric test						

Planned date	Own Authority	Other Authority	Date of test	Date signed off
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**6. Weights**

Trader's Weight					
Medium accuracy weights UKAS F2					
Test weights	One from this block				
Working standard weights					

**7. Taximeters**

There is no need to test / verify

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**8. Others User defined**

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Portfolio approved by the National Measurement Regulation Office