

# A guide to NMO Certification Services

...confidence in weighing and measuring



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## **1. Introduction to NMO Certification Services**

### *1.1 What does the NMO Certification Body do?*

The NMO Certification Body (CB) offers conformity assessment services to manufacturers to enable them to place their weighing and measuring instruments onto the market for use in legally controlled applications.

NMO is a brand within Technical Services, which is part of the Regulatory Delivery directorate within the Department for Business, Energy & Industrial Strategy (BEIS), and deemed to be a legal entity on the basis of its governmental status. NMO is a non profit-making organisation operating on a full cost recovery basis.

### *1.2 Context of NMO Certification Services*

In the UK, Europe and many countries around the world, weighing and measuring instruments used in legally controlled applications must be conformity assessed as meeting the national regulations of the country in which they are being placed on the market and put into service.

Within Europe, there are two European Directives that, if met, will satisfy the national regulation of any of the member states.

The two key European Directives are:

- 2014/32/EU – on measuring instruments (MID)
- 2014/31/EU – on non-automatic weighing instruments (NAWI)

To place instruments on the market and put into use outside of Europe, the instrument must still meet the requirements as described in the country's respective national regulations. However, many countries outside Europe have signed up to the OIML (International Organisation for Legal Metrology) Mutual Acceptance Arrangement (MAA). The OIML produces a range of Recommendations that contain requirements for specific weighing and measuring instruments, however only certain recommendations are covered by the MAA. Gaining certification to one of the recommendations covered by the MAA typically results in the instrument meeting the national regulations and requirements for any participating country.

### 1.3 *Why is Certification Important?*

Certification of weighing and measuring instruments is essential, to help protect consumers, businesses and the environment. Accurate fuel dispensers, supermarket scales, railway weighbridges, beer glasses, taximeters and a wide range of utility meters are crucial to ensuring the market place is fair and safe for consumers and manufacturers alike.

### 1.4 *Types of certification required and provided by NMO Certification Body*

The vast majority of weighing and measuring instruments are covered by the two directives mentioned in section 1.2 (MID and NAWI). These directives contain conformity assessment options that instruments can be assessed against.

Conformity Assessment can be largely broken down into two types;

- a) Product Certification. This is known as type examination of the instrument and involves rigorous testing and examination of the instrument to ensure it meets the requirements. Type examination is done in accordance with the applicable regulations.

Type examination certification can be issued under the following;

- 2014/32/EU – on measuring instruments (MID) (as implemented by respective UK national regulation)
- 2014/31EU – on non-automatic weighing instruments (NAWI) (as implemented by respective UK national regulation)
- UK Regulations – for instruments not covered by MID or NAWI.
- OIML Recommendations – for instruments to be placed into service outside of Europe. (Certification to OIML Recommendations may still be appropriate or beneficial for instruments to be placed onto the market within Europe)

- b) Quality Management System (QMS) Certification. This involves approving the quality management of the production and / or verification processes associated with either initially placing the instrument into service, or re-verifying the instrument after it has been repaired or modified. This involves auditing the organisations quality management system.

QMS based certifications can be issued under the following;

- 2014/32/EU – on measuring instruments (MID)
- 2014/31EU – on non-automatic weighing instruments (NAWI)
- Deregulation (Weights and Measures) Order 1999 (SI 1999 No 503)
- ISO 9001 - Quality Management Systems - Requirements

Note:

Quality Management System certification under MID, NAWI and Deregulation (Weights and Measures) Order, enables manufacturers, installers and repairers to place instruments onto the marketplace.

ISO 9001 is a quality management system that many organisations become certified to. However certification to this standard is not a legal requirement for placing weighing and measuring instruments onto the marketplace.

An ISO 9001 Management System can provide many benefits including increased efficiency, productivity and assurance. The 9001 system is also seen to complement the Quality Management System requirements found within the MID / NAWI and Deregulation (W&M) Order. Certification to ISO 9001 is also often a tendering requirement. Many businesses maintain their ISO 9001 Certification to enable them to win more business.

#### 1.5 *Under what authority does NMO provide certification?*

The NMO Certification Body has been designated as a Notified Body under the two European metrology Directives. Notified Bodies are designated by the respective authorities within the European member states and it is our status as a Notified Body that allows us to provide a range of conformity assessment procedures (See section 5.1) under European Directives for non-automatic weighing instruments (NAWI) and for measuring instruments (MID).

Please also refer to [Nando](#) (New Approach Notified and Designated Organisations) Information System.

The NMO Certification Body is responsible for the national type approval, on behalf of the Secretary of State, of certain instruments that are regulated under the Weights and Measures Act 1985 in the UK.

The NMO Certification Body is also an [Issuing Authority \(IA\)](#) for certification of instruments conforming to certain International Organisation of Legal Metrology (OIML) International Recommendations and is an Issuing Participant (IP) under the [OIML Mutual Acceptance Arrangement \(MAA\)](#) for OIML R49 (water meters), R60 (load cells) and R76 (NAWIs).

### 1.6 *Our Accreditations and why they are important*

NMO is accredited by the United Kingdom Accreditation Service (UKAS) to:

- BS EN ISO/IEC 17021-1:2015 Conformity assessment — Requirements for bodies providing audit and certification of management systems
- BS EN ISO/IEC 17065:2012 Conformity assessment — Requirements for bodies certifying products, processes and services
- BS EN ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

Accreditation provides independent confirmation of competence. Authorities, manufacturers, other Certification Bodies and members of the public can have confidence in NMO's competency to carry out work covered in our schedule of accreditation.

NMO supports the concept of Accredited Certification as it reduces risk and raises standards globally.

### 1.7 *Links to useful NMO Certification Services web pages*

[Product Certification \(Type Approval\) and Management System Certification](#)

[Calibration Service for mass length and volume artifacts](#)

[Testing services](#)

[Training Services](#)

## 2. Getting your instrument certified (Type Examination / Approval)

### 2.1 Make an enquiry or receive a cost estimate (contact list and contact information)

To make an enquiry or to get a cost estimate regarding a specific instrument type, please contact an instrument specific expert.

Name	Enquiry	Contact details
Grégory Glas (Lead Technical Manager)	General enquiries, conformity assessment	<a href="mailto:gregory.glas@NMO.gov.uk">gregory.glas@NMO.gov.uk</a> +44 (0) 20 8943 7292
Gavin Stones (Technical Manager)	Fuel dispensers, Water meters, Measures of length, Dimensional measuring instruments, Intoxicating Liquor measurement, Heat, Electrical, Gas meters, Cubic Measures	<a href="mailto:gavin.stones@NMO.gov.uk">gavin.stones@NMO.gov.uk</a> +44 (0) 20 8943 7294
Marek Bokota (Technical Manager)	Fuel dispensers, Water meters,	<a href="mailto:marek.bokota@nmo.gov.uk">marek.bokota@nmo.gov.uk</a> +44 (0) 20 8943 7266
Wei Ji (Trainee Type Approvals Engineer)	Non-automatic weighing instruments, Load cells and Taximeters	<a href="mailto:wei.ji@nmo.gov.uk">wei.ji@nmo.gov.uk</a> +44 (0) 20 8943 7263
Andrew Goddard	Automatic weighing instruments, Non-automatic weighing instruments, Load cells	<a href="mailto:Andrew.goddard@nmo.gov.uk">Andrew.goddard@nmo.gov.uk</a> +44 (0) 20 8943 7259
Gurvinder Dhanjal	Fuel dispensers, Water meters,	<a href="mailto:Gurvinder.dhanjal@nmo.gov.uk">Gurvinder.dhanjal@nmo.gov.uk</a> +44 (0) 20 8943 7275

### 2.2 The process of getting your instrument certified or revised- what to expect

- a) Make an enquiry and discuss the project with a type approval engineer.
- b) The NMO Type approval engineer will provide you with a cost estimate.
- c) Make an application on-line (see link in 2.3).



- d) Provide all relevant and supporting technical information to the type approval engineer for technical review. See below section 2.4 for requirements relating to technical documentation.
- e) You may be required to submit a sample of the instrument(s) to NMO for testing (where testing is required).
- f) NMO will test the instrument (if required) and review all technical information supplied to determine if the instrument meets the criteria of the respective regulation/directive/recommendation.
- g) Should the instrument satisfy the applicable requirements, NMO will issue the appropriate certificate to you. This will be placed on the NMO website as an online record.
- h) Should the instrument fail, the type approval engineer will contact you to advise you of the failure, and discuss with you the best route forwards. This will depend on the nature of the failure and associated problem.

### 2.3 *Making an application*

To make an application for assessment and certification of your weighing or measuring instrument please apply online (see link below). Someone will contact quickly to make the necessary arrangements.

[Make an application online](#)

### 2.4 *Technical Documentation to be submitted: Requirements*

The technical documentation required to be submitted will depend on the directive that applies. However, the below gives a good generic summary of the sort of documentation that must be submitted:

- a) The technical documentation shall render the design, manufacture and operation of the measuring instrument intelligible and shall permit an assessment of its conformity with the appropriate requirements of the relevant directive / regulation.
- b) The technical documentation shall be sufficiently detailed to ensure
  - the definition of the metrological characteristics,
  - the reproducibility of the metrological performances of produced instruments when properly adjusted using appropriate intended means, and
  - the integrity of the instrument

- c) The technical documentation shall include insofar as relevant for assessment and identification of the type and / or instrument:
- a general description of the instrument;
  - conceptual design and manufacturing drawings and plans of components, sub-assemblies, circuits, etc;
  - manufacturing procedures to ensure consistent production;
  - if applicable, a description of the electronic devices with drawings, diagrams, flow diagrams of the logic and general software information explaining their characteristics and operation;
  - descriptions and explanations necessary for the understanding of paragraphs (b), (c) and (d), including the operation of the instrument;
  - a list of the harmonised standards and / or normative documents that have been applied in full or in part (where relevant);
  - descriptions of the solutions adopted to meet the essential requirements where harmonised standards and/or normative documents have not been applied; (where relevant);
  - results of design calculations, examinations, etc;
  - any appropriate test results, where necessary as defined by the requirements;.
  - the EU-type examination certificates or EU design examination certificates in respect of instruments containing parts identical to those in the design.
- d) The manufacturer shall specify where seals and markings have been applied.
- e) The manufacturer shall indicate the conditions for compatibility with interfaces and sub-assemblies, where relevant.

## 2.5 *When can NMO begin testing your instrument?*

After you submit your application, the type approval engineer will contact you to find out when you can make the instrument available for testing. We require you to provide us with a planned date for delivery to enable us to reserve a place in the Testing Laboratory schedule.

**Important note:** If you cannot provide us with a date of delivery for the instrument we will not be able to confirm the start and completion dates for testing.

When you have provided us with the planned date of delivery, the type approval engineer will reserve a place for your instrument for testing with the test labs. Should you deliver the instrument on or before the planned date of

delivery your instrument will begin being tested in accordance with the reserved time slot.

Should you become aware that the instrument will not be delivered on, or before, the planned date of delivery please contact the type approval engineer and provide them with a revised date of delivery. In these circumstances the dates originally planned for testing will be cancelled, and the type approval engineer will provide you with a new date of commencement of testing based on the revised instrument delivery date.

If an instrument will not be delivered by the delivery date provided, the earlier you are able to inform NMO of the revised date the better, as NMO will be able to re-schedule the instrument in for testing based on the revised delivery date. Other test work, for other clients is being scheduled all the time, so the effects of revising a delivery date are worse, the closer to the agreed date the revision is made. We do ask that you work with the engineers to agree delivery dates for instruments, and notify us as soon as possible if a delivery date is going to be missed, so that we can minimize any delays for you by re-booking your testing at the earliest possible opportunity.

**Note 1:** Unexpected occurrences, such as lab equipment failure or staff absences, can affect the test labs ability to perform tests and therefore can have an impact on the timeframes for starting / completing testing. We seek to minimize the likelihood of such occurrences. However, should timeframes for initiation of testing your instrument be affected due to an unforeseen event, we will notify you immediately.

**Note 2:** NMO cannot be held responsible for problems with delivery and as a result instruments that arrive late may have their scheduled time slot reallocated. In these circumstances, the type approval engineer will contact you to advise you of the situation, and when testing may commence.

## 2.6 *How long will the testing process take?*

At the start of the project, the type approval engineer will be able to provide you with a provisionally booked testing start date and an estimated completion date, assuming no failures (assuming an instrument delivery date has been provided).

## 2.7 *What happens if my instrument fails during testing?*

If your instrument fails, the type approval engineer will contact you to advise you of the failure. They will discuss the project with you and determine whether it is appropriate to continue with testing (so that you can have a full suite of results) or whether it is appropriate to stop testing so that the instrument can be amended and re-submitted.

If it is determined that testing should stop due to a failure, NMO will put the project on hold until such time as the instrument is ready for testing again. At such time as the instrument is ready for testing again, please advise the type approval engineer and, if the instrument needs to be re-delivered, agree a delivery date to NMO. The instrument will then need to be re-scheduled in for testing with the Testing Laboratory schedule.

**Note:** Due to the volume of work it may be several weeks before your instrument can be re-tested if it has failed. NMO will endeavor to have your instrument re-tested as quickly as is possible.

## 2.8 *What are the specific criteria that the instrument has to meet?*

In Europe, the vast majority of weighing and measuring instruments are covered by the MID and NAWI directives.

To be certified under either of these directives, the instrument must meet the essential requirements (applicable to all instruments) and also any instrument specific requirements.

There are certain instruments that fall outside of the scope of the MID / NAWI directives, and so are covered by country specific National Regulations (e.g. dynamic axle weighers are covered in the UK by National Regulations).

If the instrument is due to be placed into service in a country outside of Europe, then the instrument must meet the country specific National Regulations that apply to it in that country. For certain instruments, an OIML certificate will be accepted as meeting the National Regulations in the countries participating in the OIML MAA. In this case, it is the requirements as per the relevant OIML 'Recommendation' that the instrument must meet.

2.9 *My instrument has been type examined / approved. Can it be placed on the market and put into use in legally controlled applications?*

No. For the instrument to be placed onto the market (if used in a legally controlled application), you must ensure it meets the required Conformity Assessment requirements. Type examination / approval is an approval of the design of the instrument. (As an example, under MID this is done under Annex B). Whilst the design may be satisfactory, it is necessary to verify these instruments before they are put into use.

To allow the manufacturer to conduct initial verification themselves, they will typically get their Quality Management System Certified. This is the most common approach.

However, the Directives provide conformity assessment modules that give other options to the manufacturer. They may wish to have a Notified Body conduct an initial verification for them as a one off activity. This may be favorable in the case of specialist instruments, manufactured in low numbers.

Further to this the manufacturer must follow the obligations in Chapter 2, Article 8 of the MID (2014/32/EU) and NAWI (2014/31/EU) Directives ensuring that measuring instruments have been designed and manufactured in accordance with the applicable requirements of said Directives.

2.10 What if we're not sure if we're ready? – (Pre-assessment)

If you are uncertain if your instrument is ready for assessment, or if you are unsure of what the requirements are, you should apply for a pre-assessment.

The purpose of the pre-assessment is to enable us to help you understand the requirements, in relation to the specific type of instrument that you wish to get certified.

The type approval engineers cannot provide you with solutions, or tell you what to do, as that would be consultancy which NMO cannot provide as a Certification Body. However, the type approval engineers will provide you with insight into the requirements and help you understand them in the context of your instrument. They will point people towards best practice advice and / or towards publically available guides that may be of assistance. They will help

un-complicate things and explain things where there is any confusion. [Apply here for a pre-assessment.](#)

## 2.11 Maintaining Certification

EU and UK national Certificates of approval are published on the NMO website and are freely available to view and download. NMO may suspend or withdraw certification if it finds that a measuring instrument no longer complies with National or EU requirements.

## 3. Getting your Quality Management System certified

### 3.1 Make an enquiry (contact list and contact information)

To make an enquiry about Management System Certification please contact a member of the team from the table below:

Name	Title	Area of Expertise	Contact details
Aysha Malik	Account Manager	Management System Certification for MID, NAWI, ISO 9001 and W&M Act Section 11A	<a href="mailto:aysha.malik@NMO.gov.uk">aysha.malik@NMO.gov.uk</a> +44 (0) 20 8943 7247
Marek Bokota	Lead Technical Manager	Management System Certification for MID, NAWI, ISO 9001 and W&M Act Section 11A	<a href="mailto:marek.bokota@NMO.gov.uk">marek.bokota@NMO.gov.uk</a> +44 (0) 20 8943 7266

### 3.2 Getting a cost estimate and making an application

*To get a cost estimate, please complete the application from using the link below. Someone will respond to you quickly with a cost estimate.*

[Make an online application here](#)

### 3.3 The process of gaining Quality Management System Certification - what to expect

- a) Make an enquiry and discuss the certification with one of the team. We will discuss with you what it is you are trying to achieve, and determine what certification is appropriate, so that you are fully aware of what you need.
- b) Make an application on-line and a member of the team will then prepare a cost estimate for you.

**Note:** We cannot provide a quotation as the costs involved with travel and accommodation will not be known until after the audit plan has been completed. The cost estimate will include all known charges, but will exclude travel and accommodation charges.

- c) If you are happy to accept the cost estimate, please sign it and return it.
- d) When you have accepted the cost estimate, we will place you onto our system and an auditor will be assigned. They will then contact you to arrange the audit.
- e) In the case of new clients, we will invoice you for 50% of the quoted cost after you have accepted the quotation. This must be paid prior to the audit being booked.
- f) Prior to the audit, the auditor will provide you with an audit plan, detailing what they plan to cover during the audit and in what order. They may contact you to ask you to make certain members of staff available at certain times.
- g) The auditor will visit your site and conduct an audit to ensure your organization is meeting the requirements. They will produce a report and provide you with a draft copy of the report at the end of the audit. Please note this is not the formal version of the audit report. All reports must be signed off by head office. Head office will issue each audit report to you after the report has been signed off.
- h) Where non-conformities have been raised, the auditor will agree with you a timeframe in which you must respond. You will be expected to conduct root cause analysis to determine why the non-conformance occurred and propose corrective action. Depending on the nature of the finding, the auditor may require evidence of corrective action (more than just a corrective action plan).
- i) When the audit is complete and any non-conformances have been closed out, NMO will certify the organization to the standard audited against. For NAWI / MID / Section 11a, new customers will typically receive their 2nd audit 6 months after the first audit. Following that, audits will take place annually. For 9001 customers, new customers will typically receive their audits annually, following on from the first audit.
- j) If you fail to meet the requirements for certification, NMO will send you a letter confirming refusal and explaining the reason(s) for the decision. This will not prevent you reapplying at any time when you are ready to do so.

- k) NMO will maintain certification based on demonstration that you continue to satisfy the requirements of the management system standard. This may be based on a positive conclusion by the audit team leader without further independent review unless any nonconformity or other situation that may lead to suspension or withdrawal of certification is identified. In which case NMO will initiate a review by appropriately competent personnel, different from those who carried out the audit, to determine whether certification can be maintained.
  - l) NMO will make decisions on renewing certification based on the results of the recertification audit, as well as the results of the review of the system over the period of certification and any complaints received from users of certification (including representations by the Secretary of State where relevant).
  - m) NMO will suspend certification where NMO have determined that your management system or product has persistently or seriously failed to meet the standards of conformity and / or effectiveness of the management system set out in the certificate including any exclusions or restrictions. Under suspension, your management system or product certification is invalid and under the terms and conditions of its certification agreement with you, you will not be able to claim any benefit deriving from the certificate. NMO will publish in a manner as it sees fit any suspension including the notification of any suspension to the Secretary of State's representative and in accordance with terms and conditions of its appointment any other public body.
  - n) NMO will restore the suspended certification if the issue that has resulted in the suspension has been resolved. Failure to resolve the issues that have resulted in the suspension in a time established by the certification body shall result in withdrawal or reduction of the scope of certification. The timescales for such action shall be determined and documented by a certification manager and shall be commensurate with the practical timescales required to resolve the issues.
  - o) NMO will reduce your scope of certification to exclude the parts not meeting the requirements, where you have persistently or seriously failed to meet the certification requirements. Any such reduction shall be in line with the requirements of the standard used for certification.
- You may also request suspension, withdrawal or expansion or reduction of the scope of certification at your request. To avoid additional costs notification must be submitted within the time frame specified in our ['terms and conditions'](#).



### 3.4 *What if we're not sure if we're ready? – (Pre-assessment)*

If you are uncertain if your Quality Management System is ready for assessment, or if you are unsure of what the requirements are, you should consider applying for a pre-assessment.

The purpose of the pre-assessment is to enable us to help you understand the requirements. The pre-assessment will be in the form of an audit, and the output of the pre-assessment audit will be a formal report that will highlight areas of deficiency within your system. As there is no certification decision made at the end of the audit, it is often seen as a way of gaining confidence in the system, before proceeding to the certification audit.

The auditor cannot provide you with solutions, or tell you what to do, as that would be consultancy which NMO cannot provide as a Certification Body. However, the auditor will provide you with insight into the requirements and help you understand them in the context of your organisation. To apply for a pre-assessment, please apply here:

[Apply for a pre-assessment](#)

### 3.5 *Certification Cycle*

The Certification is typically valid for 3 years from the initial date of certification.

To gain certification you will have an assessment audit (or a transfer audit if transferring your certification from another Certification Body). In subsequent years you will have surveillance audits. Every third year, you will have a re-certification audit, after which you will be issued with a new certificate.

### 3.6 *Can we postpone an audit?*

Certification is sensitive to business needs and so in some instances NMO will allow an organisation to postpone an audit. An example of when NMO would postpone an audit would be if the organisation is relocating their business.

### 3.7 *Your schedule of Certification (does not apply to ISO 9001 Certification)*

Your MID or NAWI certificate will be accompanied by a Certificate Schedule. This is a list of the Type Approval/Examination Certificates that are covered under the certification. You are only permitted to perform verification work on the instruments listed on the Certificate Schedule.

### 3.8 *Applying for a certificate update or extension to scope*

Please apply for a certificate update or extension to scope by completing the extension to scope application from found here: (under Management System Certification) [Apply for a certificate update or extension to scope](#)

## **4. Approved Manufacturers and Approved Verifiers**

### 4.1 *What are Approved Manufacturers?*

An Approved Manufacturer is an organisation that has been certified as meeting the Quality Management System requirements of either MID (Annex A to H1) or NAWI Annex II Section 2.

An Approved Manufacturer is legally able to initially verify an instrument and place the instrument onto the market place / into service for use in trade.

**Note:** A Type Approval or Type Examination Certificate is not sufficient to allow placement of the instrument on the market. An approved Manufacturer must be certified to either MID (Annex A to H1) or NAWI Annex II Section 2.

#### *Approved Manufacturer under MID*

An Approved Manufacturer under MID is able to initially place the instrument into service, however, is not permitted to re-verify the instrument. (For example, if the instrument required repair that required breaking seals, the approved manufacturer may not repair and re-verify the instrument, unless they are also an approved verifier.

#### *Approved manufacturer under NAWI*

An approved manufacturer under NAWI is able to initially place the instrument into service and is permitted to re-verify the instrument if this is included on their schedule (included with the certification).

#### 4.2 *What are Approved Verifiers?*

An Approved Verifier is legally allowed to verify instruments. This often happens following a repair, meaning it is a re-verification.

Definition of an approved verifier (Weights and Measures act 1985)

“[(6A) In this Act “approved verifier”, in relation to weighing or measuring equipment of any class or description, means a person who is for the time being approved under section 11A below in relation to the testing, passing and stamping of weighing or measuring equipment of that class or description.]”

Under MID, an approved Manufacturer cannot re-verify instruments that they were allowed to initially verify and place on the market. Therefore they must become an Approved Verifier. For work carried out in the UK, this means the organisation must become certified to Section 11a of the Weights and Measures Act 1985.

For work being conducted outside of the UK, it is the organisation’s responsibility to gain the needed certification from the national approval body. NMO provides Approved Verifier status to organisations conducting re-verification work in Great Britain).

Under NAWI, the Approved Manufacturer can conduct the initial verification and also subsequent re-verifications.

#### 4.3 *When else is Approved Verifier Status required?*

When an organisation is not the Approved Manufacturer, but wishes to be able to carry out re-verification work on an instrument in the UK, they may become an Approved Verifier under Section 11a of the Weights and Measures Act 1985.

To do this, they will require letters of support from the manufacturers of the instruments that they wish to re-verify. The letters must include a commitment to provide the organisation with any needed technical information and access to OEM parts.

#### 4.4 *What if we want to re-verify instruments outside of the UK?*

Under MID, all organisations will be required to gain approval from the respective national authority to conduct re-verification work.

Under NAWI, Approved Manufacturers are permitted to carry out initial verification work in any participating European Member state. They will also be able to conduct re-verification of instruments in the country in which the Notified Body is based (for instruments which appear on their schedule of certification). For instruments installed outside Europe, all organisations will be required to gain approval from the respective national authority to conduct re-verification work.

### **5. Conformity assessment procedures**

#### 5.1 Which conformity assessment procedures apply to my instrument?

Under MID, there are a range of conformity assessment procedures options that you can select from. Refer to the respective instrument specific criteria within the MID to ascertain which conformity assessment procedures can be selected, or contact one of the Certification Services team who will be happy to advise you. Under NAWI, there are fewer options.

Directive 2014/32/EU (MID)

Module A	Internal production control
Module A2	Internal production control plus supervised instrument checks at random intervals
Module B	EU- Type examination
Module C	Conformity to type based on internal production control
Module C2	Conformity to type based on internal production control plus supervised instrument checks at random intervals
Module D	Conformity to type based on quality assurance of the production process
Module D1	Quality assurance of the production process
Module E	Conformity to type based on instrument quality assurance
Module E1	Quality assurance of final instrument inspection and testing
Module F	Conformity to type based on product verification
Module F1	Conformity based on product verification
Module G	Conformity based on unit verification
Module H	Conformity based on full quality assurance
Module H1	Conformity based on full quality assurance plus design examination

Directive 2014/31/EU (NAWI)

Module B	EU-type examination
Module D	Conformity to type based on quality assurance of the production process
Module D1	Quality assurance of the production process
Module F	Conformity to type based on product verification
Module F1	Conformity based on product verification
Module G	Conformity based on unit verification

## 6. Scope of EU type examination and management certification for declarations of conformity provided by NMO

EU Directive essential requirements	EU type examination certification	Declaration of conformity management certification
<b>2014/31/EU (NAWI)</b> Annex I	<b>Weighing instruments scope of application (Module B)</b>	<b>Conformity assessment module</b>
	Retail scales	Module D: Conformity to type based on quality assurance of the production process  Module D1: Quality assurance of the production process  Module G: Conformity based on unit verification
	- single weighing range	
	- multiple weighing ranges	
	- multi-interval instruments	
	- price labelling instrument	
	Industrial scales	
	- weighbridges	
	- crane scales	
	- pallet weighers	
	- fork lift trucks	
	Indicators	
<b>2014/32/EU (MID)</b>	<b>Measuring instruments scope of application (Module B)</b>	<b>Conformity assessment module</b>
Annex I Annex III (MI-001)	Water meters	D and H1
	Cold water - residential, commercial, light industrial	
	Warm water - residential, commercial, light industrial	
Annex I Annex III (MI-002)	Gas meters and volume conversion devices	D and H1
Annex I Annex III (MI-004)	Thermal Energy Meters	D and H1
	Complete meter - residential, commercial, light and industrial	
	Sub-assemblies - residential, commercial, light industrial	
	- Flow sensor	
	- Temperature sensor	
	- Calculator	

Annex I Annex III (MI-005)	Measuring instruments for the continuous and dynamic measurement of quantities of liquids other than water	D, H1 and G
	Fuel dispensers (not for liquefied gases)	
	Systems on pipelines	
	Systems for road tankers	
	Systems for (un)loading ships and road and rail tankers	
	Systems for milk	
	Systems for refuelling aircraft	
	Systems for liquefied gases	
	Systems for cryogenic liquids	
Annex I Annex III (MI-006)	Automatic weighing instruments	
Ch I	All types of automatic weighing instruments	
	- mechanical systems	D, D1, E, G and H1
	- electromechanical instruments	D, E, G and H1
	- electronic systems or systems containing software	D, G and H1
Ch II	Automatic catchweighers (including checkweighers)	As appropriate according to sub type: - mechanical systems - electromechanical instruments - electronic systems or systems containing software
Ch III	Automatic gravimetric filling instruments	
Ch IV	Discontinuous totalisers	
Ch V	Continuous totalisers (belt weighers)	
Ch VI	Automatic rail-weighbridges	
Annex I Annex III (MI-007)	Taximeters	
Annex I Annex III (MI-008)	Material measures	
Ch I	Material measures of length	D, D1, G and H
Ch II	Capacity serving measures	D, D1, E, E1, G and H1



Annex I Annex III (MI-009)	Dimensional measuring instruments	
Ch I	All dimensional measuring instruments	
	- Mechanical or electromagnetic instruments	D, D1, E, E1, G and H1
	- Electronic instruments or instruments containing software	D, G and H1
Ch II	Length measuring instruments	As appropriate according to sub type: - Mechanical or electromagnetic instruments - Electronic instruments or instruments containing software
Ch IV	Multidimensional measuring instruments	

## 7. Scope of OIML Certification Provided by NMO

OIML	Instrument scope of application
<a href="#">R21</a>	Taximeters
<a href="#">R35</a>	Material measures of length
<a href="#">R49</a>	Water meters - for cold potable water and hot water
<a href="#">R50</a>	Continuous totalizing automatic weighing instruments (belt weighers)
<a href="#">R51</a>	Automatic catchweighing instruments
<a href="#">R60</a>	Metrological regulation for load cells
<a href="#">R61</a>	Automatic gravimetric filling instruments
<a href="#">R75</a>	Heat meters
<a href="#">R76</a>	Non-automatic weighing instruments
<a href="#">R85</a>	Automatic level gauges for measuring the level of liquid in stationary storage tanks
<a href="#">R105</a>	Direct mass flow measuring systems for quantities of liquids
<a href="#">R106</a>	Automatic rail-weighbridges
<a href="#">R107</a>	Discontinuous totalizing automatic weighing instruments (totalizing hopper weighers)
<a href="#">R117</a>	Dynamic measuring systems for liquids other than water
<a href="#">R118</a>	Testing procedures and test report format for pattern examination of fuel dispensers for motor vehicles
<a href="#">R129</a>	Multi-dimensional measuring instruments
<a href="#">R134</a>	Automatic instruments for weighing road vehicles in motion and measuring axle loads

## 8. Scope of UK national type approval certification

The following instruments are outside of the scope of the European Measuring Instruments Directive (MID)

### **Intoxicating liquor**

- Sprit measuring instruments
- Beer / Cider metering instruments

where the following are not satisfied:

Measuring System [- intended for the continuous and dynamic measurement of quantities (volumes or masses) of liquids other than water"] that comprises the meter [*"An instrument designed to measure continuously, memorise and display the quantity at metering conditions of liquid flowing through the measurement transducer in a closed, fully charged conduit"*] itself and all devices required to ensure correct measurement or intended to facilitate the measuring operations.

The UK Law requires that unless pre-packed in a surely closed container, except when sold as a constituent of a mixture of two or more liquids, the sale of Beer and Cider by retail, shall be sold in a quantity of  $\frac{1}{3}$  pint;  $\frac{1}{2}$  pint;  $\frac{2}{3}$  pint or a multiple of  $\frac{1}{2}$  pint, where sold for consumption on the premises of the seller.

For further information see [Intoxicating liquor measuring equipment](#)

### **Automatic instruments for weighing road vehicles in motion**

Automatic weighing instruments, having a load receptor and aprons, that determines the vehicle mass, axle loads, and if applicable the axle-group loads of a road vehicle while the vehicle is crossing over the load receptor of the weighing instrument.

Type Approval of these instruments is limited to the total vehicle mass, achieved by the summation of the axle loads, and if applicable the axle-group loads of a road vehicle.

Instruments are divided into six accuracy classes as shown below:

## 0.2, 0.5, 1, 2, 5, 10.

The relationship between the accuracy classes for single-axle load and, if required, axle-group load and the accuracy classes for vehicle mass are as specified in the Table below:

Accuracy class single-axle load and axle-group load	Accuracy class for vehicle mass					
	0.2	0.5	1	2	5	10
A	✓	✓				
B	✓	✓	✓			
C		✓	✓	✓		
D			✓	✓	✓	
E				✓	✓	✓
F						✓

For further information see [OIML R134](#).

### Cubic measures

Cubic measures require a UK national type approval certificate to enable them to be used for trade purposes in the UK (as defined in section 7 of the Weights & Measures Act 1985) for the measurement of ballast and agricultural materials. (See detailed guide 4 for more information).

### Vehicle-mounted liquid fuel contents gauging systems

These are covered by the Measuring Equipment (Liquid Fuel Delivered from Road Tankers) Regulations 1983 (9),(10),(11),(12). For more information refer to [OIML R80](#).

## 9. Frequently Asked Questions

Questions	Answers
How much does it cost for Type Examination / Type Approval?	This will depend upon the type of instrument. An approximate cost can be supplied following receipt of your enquiry. The formal cost quotation will be supplied upon receipt of the completed application form and all the supporting technical documentation
How much does it cost for a revision to Type Examination Certificate?	This will depend upon what work is required for the revision. Sometimes it is just a paper-work exercise and sometimes there is some testing required.
Can I apply for NAWI and OIML R76 at the same time?	Yes, the combined cost will be more than for a single application, but lower than 2 single applications. The OIML certification includes the cost (applied by OIML) to register the OIML certificate on the OIML website
Can I submit my own test results	NMO has an acceptance criteria for 3 <sup>rd</sup> party test results, which can be sent to you.
What information do I need to send with my application	See 2.4 c
Can I apply for authorisation to conduct verification of a weighing (or measuring) instrument that is "in use for trade" for which I am not the manufacturer.	<p>If you are looking to issue the associated Declaration of Conformity (DoC) and place the product onto the market under your own name (i.e. take full responsibility) you will need to complete the <a href="#">Quality Management Systems Certification On-line Application Form</a> and also provide a letter from the "original" manufacturer indicating support [supply of: parts; copies of the applicable certifications and revisions, technical information, and training (if required)]. The requirements are specified in the NAWI directive (<a href="#">2014/31/EU</a>) or MID directive (<a href="#">2014/32/EU</a>) for the "Initial" (first) verification. NMO can authorise subsequent verification in compliance to the UK implementing regulations (as amended) for NAWIs that have been placed onto the UK market place. The MID only covers first placing on the market, and therefore a separate application (to the Secretary of State) is required if subsequent verification for instruments certified under MID and placed on the UK market.</p> <p>If you are only looking to conduct subsequent verification you will need to make an application (to the Secretary of State) to be an approved verifier. The requirements are similar to the above, but do not include the issuing of the Declaration of Conformity (DoC)</p>

## 10. Find and access EC, EU, EEC and UK National Type Approval Certificates, issued by NMO,

Access copies of the following examination and approval certificates:

- [MID type examination certificates for weighing and measuring instruments](#)
- [NAWI type examination certificates](#)
- [UK national type approval certificates](#)
- [EEC type examination certificates](#)

Several old approach directives were revoked under the MID. EEC certificates, which have been issued under these old approach directives, continue to be valid until their date of expiry but cannot be renewed. These certificates continue to apply to instruments that have been verified and are in use.

## 11. Other important information

### 11.1 Complaints about NMO Certification Body

NMO operates a complaints procedure. If you have a complaint regarding any of the services provided by the NMO Certification Body, please write to:

Marek Bokota  
HSQ Manager  
NMO (a part of Regulatory Delivery)  
Stanton Avenue  
Teddington  
Middlesex  
TW11 0JZ  
United Kingdom

Email: [marek.bokota@NMO.gov.uk](mailto:marek.bokota@NMO.gov.uk)

We will acknowledge your complaint within 2 working days. We will investigate and provide a full response within 10 working days. If this isn't possible, we will explain why and give you a date when you can expect a full reply.

### 11.2 Complaints relating to the enforcement of weights and measures regulations

Complaints about enforcing weights and measures should be dealt with by your [local Trading Standards office](#).

### 11.3 NMO Personal information charter

Our [Personal information charter](#) explains how we treat your personal information.

### 11.4 NMO Terms and Conditions

NMO's terms and conditions can be found here: [Terms & Conditions](#)

# Technical Annexes

## Detailed Guide 1 Automatic weighing instruments

An automatic weighing instrument (AWI) is a weighing instrument that does not require the intervention of an operator during the weighing process.

The definition<sup>1</sup> of the difference between an automatic and a non-automatic weighing instrument is provided below:

The following interpretation of the definition of a non-automatic weighing instrument (NAWI) or an automatic weighing instrument (AWI) is intended to be used only when doubt exists in applying the definitions contained in Directives 90/384/EEC, 2009/23/EC, 2004/22/EC and the OIML recommendations.

- An instrument capable of performing consecutive weighing cycles without any intervention of an operator is always regarded to be an AWI. If an instrument needs the intervention of an operator, it is regarded to be a NAWI only if the operator is required to determine or verify the weighing result.
- Determining the weighing result includes any intelligent action of the operator that affects the result, such as deciding when an indication is stable or adjusting the weight of the weighed product.
- Verifying the weighing result means making a decision regarding the acceptance of each weighing result on observing the indication. The weighing process allows the operator to take an action which influences the weighing result in the case where the weighing result is not acceptable.

Note: the necessity to give an instruction to start the weighing process or to release a load is not relevant in deciding the category of instrument.

As of the 30 October 2006, automatic weighing instruments that are to be used for legal purposes require certification under the Measuring instruments directive (MID) 2004/22/EC\*.

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<sup>1</sup> WELMEC - European cooperation in legal metrology  
Directive 90/384/EEC: Common Application  
Non-automatic weighing instruments  
[WELMEC 2](#) Issue 6



\* Automatic vehicle-weighbridges are not covered by the MID and hence will continue to be approved under existing UK national regulations.

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-006 of the MID is applicable to AWIs and it provides manufacturers with a number of conformity assessment options. NMO is a notified body for type examination (Annex B), unit verification (Annex G) and design examination (Annex H1) under this directive for the full range of instruments under Annex MI-006.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site "[Scope of EC Type examination and Management systems declarations of conformity](#)"

The range of AWIs that are regulated in the UK is:

- Automatic continuous totalisers (beltweighers)
- Automatic catchweighing instruments (excluding checkweighers)
- Automatic gravimetric filling instruments
- Automatic rail-weighbridges
- Automatic discontinuous totalisers (hopper weighers)
- Automatic vehicle-weighbridges (dynamic axle weighers)

Note: Automatic vehicle-weighbridges (dynamic axle weighers) are subject to UK regulation and are not covered by the MID.

NMO is also the issuing authority in the UK for the [OIML](#) certificates of conformity listed below.

- OIML R50 continuous totalising automatic weighing instruments (belt weighers)
- OIML R51 automatic catchweighing instruments
- OIML R61 automatic gravimetric filling instruments
- OIML R106 automatic rail-weighbridges
- OIML R107 discontinuous totalising automatic weighing instruments (totalising hopper weighers)
- OIML R134 automatic instruments for weighing road vehicles in motion. (Total vehicle weighing)

OIML certificates and the associated test reports are generally accepted by countries outside of Europe as a basis for granting national type approval. NMO has signed a mutual acceptance ([MAA](#)) agreement with China covering gravimetric filling instruments, catchweighers and discontinuous totalisers. The OIML certificate and test report can be used by the manufacturer to gain approval in China for these instruments without further re-testing.

NMO can convert existing UK national certificates into MID certificates. In addition, NMO can also convert existing type approvals issued by another European approval body into MID approvals. Please note: Additional testing may be required to satisfy the current requirements.

### **Dynamic axle weighers (road vehicles)**

Automatic vehicle-weighbridges (dynamic axle weighers) are not included in the scope of instruments covered by the MID and hence will continue to be approved under existing UK national regulations.

These instruments are for use in determining the total weight of the vehicle, by the summation of the axle loads, whilst the vehicle is in motion. The individual axle loads cannot be approved under this certification.

NMO is also the issuing authority in the UK for [OIML](#) certificates of conformity for International Recommendation [R134](#) *Automatic instruments for weighing road vehicles in motion and measuring axle loads*. OIML certificates and the associated test reports are generally accepted by countries outside of Europe as a basis for granting national type approval.

### **Legislation**

- The [Weights and Measures Regulations](#) 1963 (S.I.1963 No.1710).

### **Legislation**

- The Measuring Instruments Regulations 2016 (S.I. 2016 No. 1153)

### **Detailed Guidance**

These documents provide guidance for organisations that are required to comply with weights and measures law for automatic weighing instruments. Following the guidance is not in itself obligatory but, if you do follow it, this should help your organisation to meet its legal obligations.

- [Automatic continuous totalisers](#) (beltweighers)
- [Automatic catchweighing instruments](#) (excluding checkweighers)
- [Automatic gravimetric filling instruments](#)
- [Automatic rail-weighbridges](#)
- [Automatic discontinuous totalisers](#) (hopper weighers)
- Automatic vehicle-weighbridges (dynamic axle weighers) – No guidance published

Guidance documents are also provided by [WELMEC](#) European Cooperation in Legal Metrology

## **Detailed Guide 2**

### **Non-automatic weighing instruments**

A non-automatic weighing instrument (NAWI) is a weighing instrument that requires the intervention of an operator during the weighing process, for example to deposit on or remove from the load receptor the load to be measured and also to obtain the result.

NAWIs that are used for an Article 1(2)(a) application (List A) must satisfy the essential requirements of European directive [2009/23/EC](#), as amended, and implemented into UK legislation under the non-automatic weighing instruments regulations 2000 ([S.I. 2000 No. 3236](#)).

The most common route for ensuring that the essential requirements of the directive are met is through the application of the European harmonised standard EN 45501. If the weighing instrument complies with EN 45501 then it will satisfy the essential requirements (Annex I).

NMO is the notified body in the UK for issuing European type approval certificates (TAC) under this directive. A TAC can be granted for all electronic and most mechanical non-automatic weighing instruments and is valid throughout the whole of Europe. NMO typically approves instruments within 4 - 6 weeks from receipt of all supporting documentation and the equipment for test.

To reduce the amount of examination and testing needed to approve a NAWI, NMO can test modules of a NAWI separately and issue individual test certificates (TC). These TCs can then be quoted in TACs, rather than examining and testing the entire NAWI. This method is known as the modular approach. TCs can be issued for modules such as indicators, load cells and point of sale devices, as well as for peripheral devices such as computers and printers.

For countries outside of Europe, the NAWI or module can be approved in accordance with the relevant OIML recommendation ([R60](#) for load cells and [R76](#) for NAWIs and other modules). NMO is now an issuing participant under the [OIML mutual acceptance arrangements](#) (MAAs) for OIML R60 and OIML R76.

An OIML certificate of conformity and test report will be issued which can be used to gain approval in countries who are signatories under the MAA.

## Legislation

The [Non-Automatic Weighing Instruments](#) Regulations 2000

(S.I. 2000 No. 3236) as amended by

The Non-Automatic Weighing Instruments [\(Amendment\) Regulations](#) 2008

(SI 2008/738)

## Detailed Guidance

For organisations that are required to comply with weights and measures law for non-automatic weighing instruments guidance information is available on the NMO web site.

[Non-automatic weighing instrument](#) guidance

Guidance documents are also provided on the [WELMEC](#) European Cooperation in Legal Metrology web site

## Supplementary: Electronic Point of Sale Systems (EPOS)

The most important information relevant to manufacturers wishing to obtain an EC Test Certificate for their EPOS System are the below WELMEC guides. Specifically, it is worth looking at to familiarise yourself with the essential requirements for the protection against unauthorised changes, manipulation, fraudulent use and functionality.

WELMEC Guide 2.2

[Guide for Testing Point of Sale \(POS\) Devices \(Non-Automatic Weighing Instruments\)](#)

WELMEC GUIDE 2.3

[Guide for Examining Software \(Weighing Instruments\)](#)

The EC Test Certificate issued will cover the software running on any CE-marked hardware meeting the minimum hardware requirements in terms of the following;

- Compatible Type-Approved NAWI with its live weight display
- EPoS terminal
- Operator/customer displays and printer
- Customer display
- Operating system
- RAM

- Processor
- Hard disk capacity
- Screen resolutions
- Number of ports/types

The EC Test Certificate is valid throughout the European Economic Area and does not have an expiry date.

The examination can take place on our premises or premises of your choice. A formal written cost estimate will be sent when we have confirmation you wish to proceed. After a successful examination has taken place and you can expect the certificate to be issued within 5 to 10 working days after a successful examination.

Note: Should minor modifications be needed, this can be dealt with by email; there is usually no need for another examination.

## Detailed Guide 3

### Liquids other than water

As of the 30 October 2006, all new designs of measuring systems for liquids other than water that are to be used for legal purposes require certification under the Measuring instruments directive (MID) 2004/22/EC. The range of instruments that can be certified is:

- Fuel dispensers
- Measuring systems
  - on pipelines
  - on road tankers
  - for (un)loading of ships and road and rail tankers
  - for milk
  - for refueling aircraft
  - for liquefied gases
  - for liquefied carbon dioxide
  - for cryogenic liquids

However, in the UK legal control is limited to fuel and oil dispensers (up to 100 litres) and measuring systems fitted to road tankers (greater than 100 litres) that are used for trade purposes.

Meters used for revenue accounting (e.g. Gantry meter in a refinery or distribution depot) are the responsibility of [HMRC](#) [Excise Notice 179: motor and heating fuels - general information and accounting for Excise Duty and VAT, section 4.10]

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-005 of the MID is applicable to these instruments and it provides manufacturers with a number of conformity assessment options.

The full range of [conformity assessment options](#) that are offered by NMO is available on the NMO web site.

NMO is a notified body for the following conformity assessment procedures under this directive.

- type examination (Annex B),

- unit verification (Annex G), and
- design examination (Annex H1)

NMO can convert existing UK National or EEC certificates into MID certificates. In addition, NMO can also convert existing type approvals issued by another European approval body into MID approvals.

NMO is also the issuing authority in the UK for [OIML R117/118](#) Certificates of Conformity and Test Reports. OIML Certificates and Test Reports may be accepted by countries outside of Europe as a basis for granting National Type Approval. NMO already has Mutual Recognition Agreements with China and Australia for fuel dispensers (excluding LPG). The OIML R117/118 Certificates and Test Reports can be used by the manufacturer to gain approval in these countries without further re-testing.

NMO can also test and certify peripheral equipment (e.g. Electronic Point of Sale terminals, cash or card payment terminals, computers and printers) for connection to these instruments.

NMO is also the issuing authority for UK national type approval certificates relating to Contents Gauging Systems and Dipstick measuring systems under national law. If you are unsure if your instrument will satisfy the requirements for certification, NMO offers a pre-assessment service which you can use prior to submitting an application for certification.

## Legislation

- The Measuring Instruments [\(Liquid Fuel and Lubricants\) Regulations 2006](#) (S.I. 2006 No. 1266), as amended by
- The Measuring Instruments [\(Amendment\) Regulations 2010](#) (S.I. 2010 No. 2881)
- The Measuring Instruments [\(Liquid Fuels delivered from Road Tankers\) Regulations 2006](#) (S.I. 2006 No. 1269), as amended by
- The Measuring Instruments [\(Amendment\) Regulations 2010](#) (SI 2010 No. 2881)and
- The Measuring Equipment [\(Liquid Fuel delivered from Road Tankers\) Regulations 1983](#) (S.I. 1983 No. 1390)



## Detailed Guidance

For organisations that are required to comply with weights and measures law for liquid fuel and lubricants relating to:

- fuel dispensers, [guidance](#) information is available on the NMO web site.
- road tanker measuring systems, [guidance](#) information is available on the NMO web site.
  - Part 1 of this document covers meter measuring systems covered by the Measuring Instruments Directive (MID) i.e. those put on the market on or after 1st October 2006.
  - Part 2 covers meter measuring systems, Contents Gauging Systems and Dipstick measuring systems under national control i.e. before the MID came into force and during the transitional period.

Guidance is also available for organisations working with retail fuel dispensers and road tanker mounted meter measuring systems fitted with [standard temperature accounting](#) displays.

## **Detailed Guide 4 Cubic measures**

Cubic measures require a UK national type approval certificate to enable them to be used for trade purposes in the UK (as defined in section 7 of the Weights & Measures Act 1985) for the measurement of ballast and agricultural materials.

Certificates of approval are issued in accordance with the requirements of national legislation.

The regulations are downloadable from the [Legislation.gov uk](http://legislation.gov.uk) web site

### **Legislation**

The [Cubic Measures \(Ballast And Agricultural Materials\) Regulations](#) 1978, (S.I.1978 No.1962)

## **Detailed Guide 5**

### **Intoxicating liquor measuring equipment & Capacity serving / Transfer measure equipment**

It is important to distinguish between instruments covered by the Measuring Instruments Directive (MID) and equipment covered by UK National Regulation only.

- Capacity serving measures (e.g. a pint glass) and Transfer measures (e.g. a thimble measure) are covered by the MID.
- Spirit measures for the sale of the prescribed spirits (i.e. gin, rum, vodka & whisky) require a UK national type approval certificate, if they are to be placed onto the UK market place.
- Beer measuring instruments (e.g. beer meters) are covered by UK National Regulation and these require a UK national type approval certificate if they are to be placed onto the UK market place.

NMO is the UK issuing authority for national type approval certificates.

Certificates are issued in accordance with the requirements of national legislation.

#### **Legislation**

##### *Capacity Serving Measures and Transfer Measures*

- 2004/22/EC – on measuring instruments (MID)
- The Measuring Instruments (Capacity Serving Measures) Regulations 2006

##### *Spirit measures & Beer measuring instruments*

- The Measuring Equipment [\(Intoxicating Liquor\) Regulations 1983](#) (S.I. 1983 No. 1656) as amended by
- Weights and Measures (Intoxicating Liquor) 1988 [list of orders](#) and [table of amendments](#)

These regulations are also downloadable from the [Legislation.gov uk](http://legislation.gov.uk) web site

## **Detailed Guidance**

There is a guidance document on the NMO web site that provides information for organisations that are required to comply with weights and measures law for Intoxicating liquor equipment. Following the guidance is not in itself obligatory but, if you do follow it, this should help your organisation to meet its legal obligations.

[Intoxicating liquor instruments guidance](#)

## Detailed Guide 6

### Material measures of length

As of the 30 October 2006, all new designs of material measures of length (tape measures) that are used for legal purposes require certification under the measuring instruments directive (MID) 2004/22/EC.

The MID provides manufacturers with access to the whole European market. Annex MI-008 of the MID is applicable to material measures of length and it provides manufacturers with a number of conformity assessment options, in addition to type examination. NMO is a notified body for certification of these instruments under this directive.

The full range of [conformity assessment options](#) that are offered by NMO is available on the NMO web site.

NMO can convert existing EEC certificates into MID certificates. In addition, NMO can also convert existing type approvals issued by another European approval body into MID approvals.

NMO is also the issuing authority in the UK for the [OIML](#) certificates of conformity listed below.

OIML [R35 - Material measures of length for general use](#)

OIML [R98 - High-precision line measures of length](#)

OIML certificates and the associated test reports are generally accepted by countries outside of Europe as a basis for granting national type approval.

#### Legislation

The Measuring Instruments [\(Material Measures of Length\) regulations](#) 2006 (S.I. 2006 No. 1267)

[\[Correction slip, 08/10/2014\]](#)

#### Detailed Guidance

For organisations that are required to comply with weights and measures law for material measures of length, [guidance](#) information is available on the NMO web site.

The following gives an example of the marking requirements of the measuring instruments directive (MID) 2004/22/EC, and the related sections (Conformity Assessment annexes) of the MID which specify these requirements.

## Detailed Guide 7

### Water meter certification

Water meters intended for the measurement of volumes of clean, cold or heated water in residential, commercial and light industrial use are within the scope of the measuring instruments directive (MID) [2004/22/EC](#). Annex MI-001.

As of the 30 October 2006, all new designs of water meters that are to be used for legal purposes require certification under the MID. This applies to both electronic and mechanical water meters which are intended for the measurement of volumes of clean, cold or heated water in residential, commercial or light industrial use. N.B. in the UK, only the supply of cold water to domestic premises is controlled.

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-001 of the MID is applicable to water meters and it provides manufacturers with a number of conformity assessment options. NMO is a notified body for type examination (Annex B) and design examination (Module H1) under this directive. For the full range of conformity assessment options that are offered by NMO.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site "[Scope of quality management certification](#)"

NMO can convert existing UK national or EEC certificates into MID certificates. In addition, NMO can also convert existing type approvals issued by another European approval body into MID approvals.

NMO is an issuing participant under the [OIML](#) mutual acceptance arrangement ([MAA](#)) for OIML [R-49](#). OIML R-49 certificates and test reports will be accepted by utilising participants and may also be accepted by other countries who have not yet signed up to the MAA.

#### Legislation

- The Measuring Instruments ([Cold-water Meters](#)) [Regulations 2006](#) (S.I 2006 No.1268) as amended by
- [The Measuring Instruments \(Amendment\) Regulations 2010](#) (S.I. 2010 No. 2881)

## Detailed Guidance

For organisations that are required to comply with weights and measures law for cold water meters [guidance](#) information is available on the NMO web site.

## Detailed Guide 8 Taximeters

As of the 30 October 2006, all new designs of taximeters that are to be used for legal purposes in Europe require certification under the Measuring Instruments Directive (MID) [2004/22/EC](#).

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-007 of the MID is applicable to taximeters and it provides manufacturers with a number of conformity assessment options. It should be noted that the MID only covers the meter in the vehicle and does not cover the signal generator (distance transducer) which is outside of the scope of the Directive.

NMO is a Notified Body for Type Examination (Annex B) under this Directive. Read the full range of [conformity assessment options](#) that are offered by NMO.

NMO is also an Issuing Authority for granting [OIML](#) certificates of conformity to the requirements of [OIML R21](#). The OIML Certificate and Test Report that is issued may be accepted by countries outside of Europe as the basis for issuing national type approvals.

In addition, NMO can also certify taximeters in accordance with EN 50148, and we have been designated by the LTPH (London Taxi and Private Hire, formerly Public Carriage Office) in London to perform the annual audit/routine testing and tariff change testing (as described in the document below).

Read the [specification](#) for a taximeter to be approved for the use in a London Taxi document issued by LTPH for further details.

### Legislation

- The Measuring Instruments [\(Taximeters\) Regulations 2006](#)  
(S.I. 2006 No. 2304)

### Detailed Guidance

There is no detailed guidance information relating to Taximeters available



## Detailed Guide 9

### Thermal energy meters

Heat meters used for legal purposes in Europe require certification under the Measuring Instruments Directive (MID) 2004/22/EC.

As of the 30 October 2006, all new designs of heat meters that are to be used for legal purposes in Europe require certification under the Measuring Instruments Directive (MID) 2004/22/EC.

Please note however, that in the UK heat meters are not prescribed by regulation and therefore do not require type examination certification. However, if the heat meter is to be used in accordance with the [Renewable Heat Incentive](#) (RHI) then MID certification can support acceptance of the heat meter under the RHI scheme.

[Ofgem](#) is responsible for implementing and administering the scheme on behalf of the [Department of Energy and Climate Change](#).

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-004 of the MID is applicable to heat meters and it provides manufacturers with a number of conformity assessment options. In addition to the certification of a complete heat meter, the MID also permits the 'sub-assemblies' of a heat meter (ie calculator, flow sensor and temperature sensor pair) to be individually certified. This permits the individually certified sub-assemblies to then be combined to form a complete instrument.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site "[Scope of EC Type examination and Management systems declarations of conformity](#)"

NMO is an issuing authority for [OIML](#) International Recommendation [R75 Heat meters](#) certificates of conformity. The OIML Certificate and Test Report that is issued may then be accepted by countries outside of Europe as the basis for issuing their national type approvals.

In addition, NMO can also test and issue pattern approval certificates for heat meters in accordance with [EN 1434](#).

## **Detailed Guide 10**

### **Gas meter and volume conversion devices certification**

The use and performance of gas meters is governed by Section 17 of the [Gas Act 1986](#) and supporting legislation in the form of Statutory Instruments (SI).

The provisions set out in the Gas Act 1986 have the effect that *'No meter shall be used for the purpose of ascertaining the quantity of gas supplied through pipes to any person unless it is stamped either by, or on the authority of, a meter examiner appointed by the Secretary of State (ie NMO).'*

In addition, a meter cannot be stamped unless it is of an approved pattern and construction.

This requirement applies to all meters for domestic, commercial and light industrial billing (i.e. meters up to a maximum flow rate of 1,600 cubic metres per hour at standard conditions of temperature and pressure) intended for the measurement of gas and used for the purpose of billing, whether by a licensed energy supplier or a landlord. Most domestic and smaller industrial/commercial metering applications are covered by this requirement; therefore only meter types that operate to defined accuracy and performance requirements will be approved and issued with a Type Examination certificate.

As of the 30 October 2006, under the measuring instruments directive (MID) 2004/22/EC, all new designs of gas meter and volume conversion devices that are within the scope of the directive, and to be used for legal purposes, must meet the (related) essential requirements of the directive (Annex I) plus the instrument specific requirements detailed in Annex MI-002. Certification is issued under Annex B –Type Examination, or Annex H1- Design Examination.

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-002 of the MID is applicable to gas meter and volume conversion devices and it provides manufacturers with a number of conformity assessment options. NMO is a notified body for type examination (Annex B) and design examination (Module H1) under this directive.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site "[Scope of quality management certification](#)"

NMO Certification Services may be able to convert existing UK national certificates into MID certificates. In addition, it may also be possible to convert existing type approvals issued by another European approval body into MID approvals. Full details will be required so that an assessment can be conducted.

If you are unsure if your instrument will satisfy the requirements for certification, NMO offers a pre-assessment service which you can use prior to submitting an application for certification.

## **Legislation**

- the [Measuring Instruments \(Gas Meters\) Regulations](#) (S.I. 2006/2647)

Gas meters, and volume conversion devices, that are put into use in accordance with these regulations are 'deemed' to be of an approved pattern or construction and installed in an approved manner. Such meters are also 'deemed' to be stamped where required.

## **Detailed Guidance**

Guidance [notes on the measuring instruments regulations](#) 2006 for gas meters are available on the NMO website.

### *Stamping*

Once an approval is granted, a manufacturer can submit meters and volume conversion devices, manufactured in accordance with the type approval, for stamping. It is a requirement of the Gas Act 1986 that all gas meters and volume conversion devices are stamped to show that, when tested following manufacture/refurbishment, they conform to the original pattern approval and operate within the prescribed levels of accuracy. Stamping is performed by meter examiners appointed by the National Measurement & Regulation Office (NMO) or by persons that have been authorised to 'self-stamp'.

### *Self stamping*

Self stamping is performed by authorised persons employed by manufacturers/repairers of gas meters and volume conversion devices that have been authorised to 'self-stamp' meters they have manufactured or repaired.

Formal 'consents' are issued to the manufacturer/repairer, and these are subject to regular audits performed by independent meter examiners appointed by NMO. There is no statutory list of approved gas meters.

In addition, gas meters do not have a defined life. However, there is an obligation in [Schedule 2B](#) of the Gas Act 1986 for all parties to keep meters in proper order for correctly registering the quantity of gas supplied. This obligation is generally fulfilled by the asset owner monitoring the accuracy of particular meter types on an ongoing basis and taking action when problems occur.

### *Sealing*

Prior to submission for stamping, meters will have a uniquely marked seal attached. Gas meter seals are designed to be tamperproof and are used to provide security for the measuring elements of a meter, identify the manufacturer/repairer of the meter, the year of manufacturer and the fact that the meter is stamped.

If this seal is removed or tampered with in any way this should be reported to the supplier.

### *Scope of MID*

The MID is applicable to instruments for domestic, commercial and light industrial use although these terms are not defined.

### *Gas meters*

When the UK implemented the MID for gas meters (SI 2006/2647) it was agreed to maintain the existing regulatory scope of the Gas Act 1986 (i.e. the MID applies to gas meters designed to be used with a supply up to a maximum flow rate of 1,600 cubic meters per hour at standard conditions of temperature and pressure).

## Detailed Guide 11

### Active Electrical Energy Meters certification

It is a requirement under Schedule 7 of the [Electricity Act 1989](#) that “Where a customer of an authorised supplier\* is to be charged for his supply wholly or partly by reference to the quantity of electricity supplied, the supply shall be given through, and the quantity of electricity shall be ascertained by, an appropriate meter\*\*.

\* a person who is authorised by a licence or exemption to supply electricity

\*\* a meter for use in connection with any particular supply if it is of a pattern or construction which, having regard to the terms on which the supply is to be charged for, is particularly suitable for such use

As of the 30 October 2006, under the Measuring Instruments (Active Electrical Energy Meters) Regulations (SI 2006/1679) the design would be assessed against the requirements of the measuring instruments directive (MID) 2004/22/EC. All new designs of active electrical energy meters that are within the scope of the directive must meet the (related) essential requirements of the directive (Annex I) plus the instrument specific requirements detailed in Annex MI-003, by an authorised notified body, regarding compliance with MID Annex MI-003. Only meter types that operate to defined accuracy and performance requirements will be approved and issued with Annex B –Type Examination, or Annex H1- Design Examination, certificate.

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-003 of the MID is applicable to active electrical energy meters and it provides manufacturers with a number of conformity assessment options. NMO Certification Services is a notified body for type examination (Annex B) and design examination (Module H1) under this directive.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site “[Scope of EC Type examination and Management systems declarations of conformity](#)”

NMO Certification Services may be able to convert existing UK national certificates into MID certificates. In addition, it may also be possible convert existing type approvals issued by another European approval body into MID approvals. Full details will be required so that an assessment can be conducted.

## Legislation

- the [Measuring Instruments \(Active Electrical Energy Meters\) Regulations](#) SI 2006/1679
- the [Meters \(Certification\) Regulations](#) SI 1998/1566

Electricity meters that are put into use in accordance with these regulations are 'deemed' to be of an approved pattern or construction and installed in an approved manner. Such meters are also 'deemed' to be "*certified*" where required.

## Detailed Guidance

[Guidance for business](#) on the measuring instruments directive (MID) regulations (SI 2006/2647)

*MID electricity meter certification*

Unlike meters approved under UK national legislation, "*certification*"<sup>1</sup> is not recognised as a separate process under the MID. MID electricity meters are either approved and certified (Annex B+D, Annex B+F or Annex H1) or they are not if outside of the scope of MID.

<sup>1</sup>Note: "*certification*" in this context is not the same as Annex B Type Examination certification, but is an equivalent of a verification process.

MID electricity meters that have only Annex B (i.e. type approval) are not approved for either primary (i.e. supplier-consumer) or secondary (i.e. landlord-tenant) billing applications. For these purposes the meters would need to be "*certified*" by an authorised manufacturer (Annex D) or a Notified Body (Annex F).

It is a requirement of the [Electricity Act 1989](#) that all domestic meters used for billing purposes by a licensed electricity supplier must be "*certified*" to show that, when tested following manufacture/refurbishment, they conform to the original pattern approval and operate within the prescribed levels of accuracy.

*Secondary metering*

Meters need not be "*certified*" where the supplier does not hold a supply license. This provides for situations where the supplier might be a landlord selling electricity on to tenants, or a caravan park owner billing individual berth occupiers. However, a written agreement must be in place between the two parties to dispense with the

requirement for certification and the meter owner is obliged to use an approved meter and keep the metrology of the meter accurate.

### *Self certification*

The Meters (Certification) regulations allow NMO to authorise manufacturers and repairers of electricity meters to 'self-certify' meters that have been manufactured or repaired. Formal authorisations are issued to the manufacturer/repairer; these are subject to regular audits performed by independent meter examiners appointed by NMO.

Manufacturers/repairers authorised to self-certify meters must comply with the strict conditions under which the authorisation is issued. If these are breached, NMO has the sanction of withdrawing the authorisation (see Section 5(5)(c) of the Electricity Act 1989 and Paragraphs 3(3) and 4(3) of The Meters (Certification) Regulations SI 1998/1566).

### *Sealing*

Prior to submission for "*certification*", meters will have markings in accordance with the MID Article 17 and Annex I para 9 and be sealed/secured as described in the Annex B type examination certificate. A seal may be used to provide security for the measuring elements of a meter from tampering, identify the manufacturer/repairer of the meter, the year of certification and the fact that the meter is "*certified*". The seal can take the form of a crimped security seal on traditional meters or an indelible inscription on the meter case for sealed-for-life static meters. If this seal is removed or tampered with in any way this should be reported to the supplier.

### *Scope of MID*

The MID is applicable to instruments for domestic, commercial and light industrial use although these terms are not defined.

### *Electricity meters outside the scope of MID*

When the UK implemented the MID for electricity meters (SI 2006/1679) it was agreed that the MID would not apply to meters where:

- the maximum quantity of electricity supplied exceeded 100 kilowatts per hour (kW/hr)

- the meter provides measurement on a half-hourly basis

Electricity meters outside the scope of MID will therefore continue to be approved by NMO under UK national legislation. Meters above 100kW/hr must also meet the additional requirements of the Balancing and Settlement Code, administered by [ELEXON](#).



## Detailed Guide 12

### Dimensional measuring instruments

As of the 30 October 2006, all new designs of dimensional measuring instruments that are to be used for legal purposes [where Legislation is in place] are required to be certified under the measuring instruments directive (MID) 2004/22/EC.

This applies to:

- Length measuring instruments (not tape measures),
- Area measuring instruments, and
- Multi-dimensional measuring instruments.

N.B. these instruments are not prescribed by regulations in the UK

The MID provides manufacturers with access to the whole European market, with only one approval certificate required. Annex MI-009 of the MID is applicable to these instruments and it provides manufacturers with a number of conformity assessment options.

Although these instruments are not prescribed by Regulation for use in the UK, there are requirements under the [Weights and Measures Act 1985](#) e.g. Section 17 (Offences relating to false or unjust equipment or fraud.)

*“If any person uses for trade, or has in his possession for use for trade, any weighing or measuring equipment which is false or unjust, he shall be guilty of an offence and the equipment shall be liable to be forfeited.”*

NMO is a notified body for type examination (Annex B), unit verification (Annex G) and design examination (Annex H1) under the MID.

The full range of conformity assessment options that are offered by NMO is available on the NMO web site “[Scope EC Type examination and Management systems declarations of conformity](#)”

NMO is also the issuing authority in the UK for [OIML](#) International Recommendation [R129](#) certificates of conformity and test reports. OIML certificates and test reports may be accepted by countries outside of Europe as a basis for granting national type approval.

*Related documents*

OIML:

- R 66 [Length measuring instruments](#)
- R 136 [Instruments for measuring the areas of leathers](#)
- R 129 [Multi-dimensional measuring instruments](#)