

1.4.1 TYPE APPROVAL OF WEIGHING INSTRUMENTS

Under the NAWI and Measuring Instruments Directives, EC-Type examination certificates can only be issued by Notified Bodies who have been designated in their Member State for this task. The National Measurement Office (NMO) is the designated Notified Body in the UK for issuing EC TACs for both non-automatic and automatic weighing instruments. Member States of the EC are obliged to accept type-approval certificates issued by Notified Bodies of other Member States.

To grant an approval, the examining body must assess the equipment against the essential requirements of the associated directive. In general, the examining body will refer to harmonised standards, OIML normative documents (MID only) and WELMEC guidelines. If the equipment satisfies the related harmonised standard(s) or normative document then it is presumed to conform to the applicable essential requirements of the directive. WELMEC guidelines give interpretations from a legal metrological point of view.

Alternatively, a manufacturer can request to have an instrument assessed against the essential requirements of the associated directive independently of the standards, normative documents and guidelines. However, the manufacturer will need to demonstrate how the instrument satisfies the essential requirements.

Non Automatic Weighing Instruments (NAWIs)

The harmonised standard for non-automatic weighing instruments is EN45501 which is based on OIML recommendation R76. This details the test procedures and criteria to be met.

The following WELMEC guidelines may be relevant:

- 2 Directive 90/384/EEC: Common Application
- 2.1 Guide for Testing Indicators
- 2.2 Guide for Testing Point of Sale Devices
- 2.3 Guide for Examining Software
- 2.4 Guide for Load Cells
- 2.5 Guide for Modular Approach and Testing of PCs and other Digital Peripheral Devices
- 4.1 Guide for Notified Bodies performing Conformity Assessments of Measuring Instruments
- 7 Guidelines for Examination and Testing of Interfaces and Peripheral Equipment
- 9 WELMEC Type Approval Agreement
- 10.3 Guide for the use of an alibi recording device (printer or memory) in Measuring Systems for Liquids other than Water

To reduce the amount of examination and testing needed to approve a NAWI, it is possible to test modules of a NAWI separately and issue them with individual Test Certificates (TC). These TCs can then be quoted in Type Approval Certificates (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 the EU, the NAWI or module can be approved in accordance with the relevant OIML Recommendation (R60 for load cells and R76 for complete NAWIs and other modules). An OIML Certificate of Conformity and Test Report will be issued which may then be used to assist in the gaining of approvals in other countries.

Automatic Weighing Instruments (AWI)

Until harmonised standards have been developed, notified bodies will refer to normative documents (derived from OIML recommendations) and WELMEC guides. The OIML recommendations for the various types of AWI are listed in section 1.4.

The WELMEC guides that may apply include the following:

- 2.6 Guide for the testing of automatic catchweighing instruments
- 7.2 Software Guide (Measuring Instruments Directive 2004/22/EC)
- 8.1 Terms and definitions in MID and their relation to terms defined in other international metrologically relevant documents
- 8.16.1 Guide for Measuring Instruments Directive 2004/22/EC Automatic Catchweighers Corresponding Tables OIML R 51-1 – MID-006
- 8.16.2 Guide for Measuring Instruments Directive 2004/22/EC Automatic Gravimetric Filling Instruments Corresponding Tables OIML R 61-1 2004 – MID-006 III
- 8.16.3 Guide for Measuring Instruments Directive 2004/22/EC Discontinuous Totalisers Corresponding Tables OIML R 107-1 1997– MID-006 IV
- 8.16.4 Guide for Measuring Instruments Directive 2004/22/EC Continuous Totalisers Corresponding Tables OIML R 50-1 1997– MID-006 V
- 8.16.5 Guide for Measuring Instruments Directive 2004/22/EC Automatic Rail Weighbridges Corresponding Tables OIML R 106-1 1997– MID-006 VI

Type Approval typically involves testing and examination of the AWI to ensure that the instrument satisfies the essential requirements. Testing covers the environmental (temperature and humidity) and electrical (immunity to disturbances) performance of the instrument, as well as a range of other weighing performance checks, e.g. span stability. The examination stage is used to check the functionality of the instrument. Unlike NAWIs, there is normally a requirement for on-site testing of a complete instrument at the type approval stage. Due to the physical size or mode of operation it is normally not feasible to test the complete instrument in the laboratory.

In addition, part of the approval process requires the determination of the accuracy class of the instrument when weighing actual material or vehicles (as appropriate). Therefore, laboratory testing is usually undertaken on a simulator, with the on-site testing of a complete instrument then performed. N.B. this tends not to apply to catchweighers (e.g. weigh-price labellers) as the complete instrument can normally be tested in the laboratory.

