OIML International Recommendation R 76-1

Non-automatic weighing instruments (NAWI)

Introduction to R76-1 (2006)

DISCLAIMER

- This presentation has been designed as an introduction to *OIML R 76-1 Non-automatic Weighing Instruments, Part 1: Metrological and Technical Requirements — Tests*, Edition 2006(E) published by the International Organisation of Legal Metrology (OIML).
- The presentation is a summary of many of the requirements and as such may not be complete.
- In all cases R76-1 takes precedence over this presentation.

Websites

- www.oiml.org
- www.measurement.gov.au
- www.consumeraffairs.govt.nz/for-business/compliance/accurate-measures/approved-weighing-and-measuring-equipment-1

www.oiml.org/publications/

Recommendations | Documents | Vocabularies | Basic Publications | Expert Reports | Guides | Seminar Reports

Recommendations (127)

Ref.	Title
R 7 - en	Clinical thermometers, mercury-in-glass with maximum device
R 14 - en	Polarimetric saccharimeters graduated in accordance with the ICUMSA International Sugar Scale
R 15 - en	Instruments for measuring the hectolitre mass of cereals
R 16-1 - en	Mechanical non-invasive sphygmomanometers
R 16-2 - en	Non-invasive automated sphygmomanometers
R 18 - en	Visual disappearing filament pyrometers
R 21 - en	Taximeters. Metrological and technical requirements, test procedures and test report format
R 22 - en	International alcoholometric tables
R 23 - en	Tire pressure gauges for motor vehicles
R 24 - en	Standard one metre bar for verification officers
R 26 - en	Medical syringes
R 34 - en	Accuracy classes of measuring instruments
R 35-1 - en	Material measures of length for general use. Part 1: Metrological and technical requirements
R 35-2 - en	Material measures of length for general use. Part 2: Test methods
R 35-3 - en	Material measures of length for general use. Part 3: Test report format
R 40 - en	Standard graduated pipettes for verification officers
R 41 - en	Standard burettes for verification officers
R 42 - en	Metal stamps for verification officers
R 43 - en	Standard graduated glass flasks for verification officers
R 44 - en	Alcoholometers and alcohol hydrometers and thermometers for use in alcoholometry
R 47 - en	Standard weights for testing of high capacity weighing machines

Non-automatic weighing instrument

Instrument that requires the intervention of an operator during the weighing process to decide that the weighing result is acceptable.

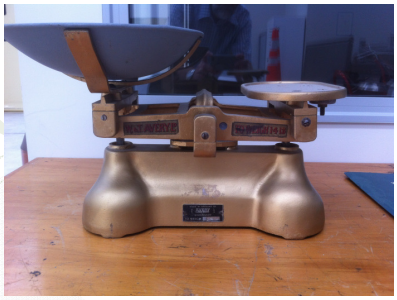
- adjust the load
- adjust the unit price

In case of doubt as to whether an instrument is a non-automatic weighing instrument or an automatic weighing instrument, the definitions for automatic weighing instruments given in OIML Recommendations R 50, R 51, R 61, R 106, R 107 and R 134 have higher priority.

Self Indicating Graduated NAWI

Semi-Self Indicating Graduated NAWI

Non self indicating Non graduated NAWI



Non self indicating NAWI

Digital self indicating NAWI

Layout

The document is made up of:

- Chapter T Terminology
- 6 Sections
  1. Scope
  2. Principles
  3. Metrological requirements
  4. Technical requirements for a self or semi-self indicating instrument
  5. Technical requirements for electronic instruments

Layout

6. Technical requirements for non self indicating instruments

- 7 Annexes
  - Annexes are mandatory
  - Cover test procedures and compatibility checking

Terminology

The terminology given in chapter T Terminology is a binding part of the Recommendation

Scope

1 Scope

- This Recommendation specifies the metrological and technical requirements for non-automatic weighing instruments that are subject to official metrological control.
- It is intended to provide standardized requirements and testing procedures to evaluate the metrological and technical characteristics in a uniform and traceable way.

Units of measurement

Units of measurement

The units of mass to be used on an instrument are:

- the kilogram, kg;
- the milligram, mg;
- the gram, g; and
- the tonne, t.

Units of measurement

Units of measurement

- For special applications, e.g. trade with precious stones, the metric carat (1 carat = 0.2 g) may be used as the unit of measurement. The symbol for the carat is ct.

Principles of the metrological requirements

The requirements apply to all instruments irrespective of their principles of measurement.

Instruments are classified according to:

- the verification scale interval, representing absolute accuracy; and
- the number of verification scale intervals, representing relative accuracy.

Principles of the metrological requirements

The maximum permissible errors are in the order of magnitude of the verification scale interval.

They apply to:

- gross loads
- net loads when a tare device is in operation
  - They do not apply to calculated net values when a pre-set tare device is in operation.

Principles of the metrological requirements

- A minimum capacity (Min) is specified to indicate that use of the instrument below this value is likely to give rise to considerable relative errors.

Application of requirements

The requirements of the R 76-1 apply to all devices performing the relevant functions, whether they are incorporated in an instrument or manufactured as separate units.

- Examples are:
  - load-measuring device;
  - displaying device;
  - printing device;
  - preset tare device; and
  - price-calculating device.

Application of requirements

National legislation

Devices that are not incorporated in the instrument may be exempted from the requirements for special applications.

BASIC COMPONENTS