

WEIGHTS AND MEASURES (ASSIZE) REGULATIONS, 1972

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*Statutory Instrument No. 13 of 1972*

WEIGHTS AND MEASURES ACT, 1970  
(42 of 1970)

**WEIGHTS AND MEASURES (ASSIZE) REGULATIONS, 1972**  
(Published on 18th February, 1972)

IN EXERCISE of the powers conferred by section 31 of the Weights and Measures Act, 1970 the Minister of Commerce, Industry and Water Affairs has made the following regulations –

- Citation*           **1.** These regulations may be cited as the Weights and Measures (Assize) Regulations, 1972

2. In these regulations, unless the context otherwise requires –
- “approved” means approved by the Minister;
- “assize” includes to re-assize;
- “automatic measuring instrument” means a measuring instrument for the automatic measuring and filling of liquids into containers;
- “automatic weighing machine” means a weighing instrument in which special self-acting machinery is used to effect all or some of the following –
- (a) an automatic feed;
  - (b) the rapid weighing of pre-determined quantities;
  - (c) the registration and summation of loads; or other similar purposes;
- “beam scale” means an equal-armed weighing instrument, the pans of which are below the beam;
- “bulk flowmeter” means a measuring instrument designed to measure liquid fuel or lubricating oil for individual deliveries of 500 litres or more, whether or not individual deliveries of less than 500 litres may also be made by means of the same instrument;
- “capacity” means –
- (a) in relation to a weighing instrument, the maximum load which it is constructed to weigh as marked on such instrument in accordance with the provisions of regulation 7;
  - (b) in relation to a measure or measuring instrument the maximum volume, quantity or length which it is constructed to contain or measure, as the case may be;
- “compartment” in relation to a vehicle tank, means a sub-divided portion of that tank;
- “counter-machine” means an equal-armed weighing instrument of a capacity not exceeding 50 kg the pans of which are above the beam;
- “crane machine” means –
- (a) a suspended unequal-armed compound lever weighing instrument fitted with a loadhook suspended from knife edges, and provided with poises moving over graduated scales to indicate weight; or
  - (b) a suspended self-indicating, hydraulic or spring-actuated weighing instrument; which has a capacity of not less than 1000kg;
- “deadweight machine” means an equal-armed weighing instrument of a capacity exceeding 50 kg the pans or platform of which are above the beam;

Inter-  
pretation

- “difference chart” in relation to a weighing instrument, means a chart on which, by means of a pointer or other indicator excess or deficiency from a pre-determined weight is indicated;
- “error” in relation to an instrument, means the extent to which such instrument indicates the excess or deficiency of standard weight or measure;
- “fabric-measuring instrument” means a measuring instrument designed and constructed to measure and to indicate the length of fabric or other material passed through it;
- “liquid measuring device” means a measuring instrument provided with a measuring chamber or chambers designed for filling barrels, bottles, drums or other containers with pre-determined quantities of liquid or for dispensing liquids in small quantities from bulk;
- “petrol pump” means a measuring instrument provided with either a meter or one or more measuring chambers, designed to measure liquid fuel or lubricating oil for individual deliveries of less than 500 litres, whether or not individual deliveries of more than 500 litres can also be made by means of the same instrument;
- “platform machine” means an instrument other than a weighbridge used for determining the mass of a load supported on a platform not exceeding 3m by 2m in size and 5000 kg load capacity and shall include any instrument prescribed by the Minister as a “platform machine”;
- “repaired” in relation to an instrument, means that the instrument has, since it was last assized, had an addition, replacement, repair or adjustment made to a part which is essential to the use of such instrument;
- “self-indicating weighing instrument” means a weighing instrument other than a springbalance on which the whole or a part of the weight of the goods weighed is indicated by means of a pointer moving over a chart, or by means of a chart moving in relation to a fixed pointer;
- “sensitiveness” in relation to a weighing instrument, means the actual weight which causes the beam or steelyard to turn;
- “spring balance” means a weighing instrument having a capacity of less than 1000 kg in which weight indications are dependent on the extension of springs and which is so constructed that the load is below the springs and is suspended directly from them;
- “steelyard” means –
- (a) a suspended unequal armed single-lever weighing instrument, the shorter arm of which carries a load-hook suspended from

knife edges, whilst the longer arm is provided with a poise moving over a graduated scale to indicate weight;

- (b) a steelyard provided on a platform machine, weighbridge or other similar weighing instrument, as the context requires;

“Table” means the appropriate table of allowances prescribed in the First Schedule hereto;

“turn” in relation to a beam or steelyard, means to move from its position of equilibrium to the full extent of its travel each way between stops or to the limit of its graduated scale;

“vehicle tank” means a measure mounted on a motor vehicle or trailer and used for the measurement of liquid fuel;

“vibrating weighing instrument” means a weighing instrument so constructed that the beam or steelyard returns to or oscillates about the position of equilibrium when disturbed therefrom;

“wall beam” means an unequal-armed multi-lever weighing instrument designed to be affixed to a wall, having a loadhook suspended from knife edges on the lower lever, and provided with poises moving over graduated scales to indicate weight;

“weighbridge” means an instrument for determining the mass of a load carried by a vehicle for transport on a highway or railway, such load and vehicle being supported on a platform or on rails fitted to a system of levers or load cells and indicating the mass by means of a steelyard, a spring or pendulum device or a digital counter, or printing mechanism which may be supplemented by a remote read-out or print-out mechanism in addition to any indicator at the actual weighbridge site and shall include any instrument prescribed by the Minister as a weighbridge.

## **PART I GENERAL**

**3.** The provisions of the Act shall not apply to the following classes of instruments, weights and measures – Exemptions from the Act

- (a) electricity meters;
- (b) gas meters;
- (c) taxi meters;
- (d) water meters; and
- (e) instruments used for grading or testing agricultural produce by weight.

- Stamp of assize**           **4.** The stamp of assize shall be a stamp incorporating the Coat of Arms of the Republic of Botswana and the assize officer's personal number.
- Seal of assize**           **5.** (1) The seal of assize shall be a lead seal bearing a stamp incorporating the Coat of Arms of the Republic of Botswana and the assize officer's personal number.
- (2) Where use is made of a seal or seals of assize in terms of these regulations, the removal of any such seal from an assized instrument shall be deemed to render that instrument un-assized.
- Rejection mark**           **6.** (1) The rejection mark shall be a mark of a six pointed star design.
- (2) An assizer shall reject an instrument, weight or measure –
- (a) if such instrument, weight or measure bears a stamp of assize, by obliterating such stamp with a rejection mark;
- (b) if such instrument, weight or measure does not bear a stamp of assize, by stamping the rejection mark in a suitable position thereon; or
- (c) if such instrument bears a seal or seal of assize by removing or defacing such seals.
- Marking of capacity or denomination**           **7.** (1) The capacity of a weighing instrument shall be clearly and conspicuously –
- (a) stamped on the beam or steelyard or on a metal plate permanently secured to some prominent part of the instrument;
- (b) cast in the framework of the instrument; or
- (c) in the case of a self indicating instrument, marked on the chart.
- (2) The capacity of a fabric-measuring instrument shall be clearly and conspicuously stamped thereon.
- (3) The denomination of a weight shall, except where the small size of it renders it impracticable, be clearly and conspicuously stamped on the upper surface of the weight.
- (4) The capacity of a measure shall, unless otherwise prescribed, be clearly and conspicuously stamped on the outside of the measure or on a metal plate permanently secured thereto.
- (5) When an instrument, weight or measure is marked with its capacity or denomination, as the case may be, the denomination of weight or measure shall be stated in full, or, in respect of a denomination specified in the first column of the Second Schedule hereto, in full or in the abbreviated form specified opposite thereto in the second column of the Second Schedule.

**8.** (1) The graduations on an instrument or measure shall – Graduations.

- (a) be indelible, clear, distinct and legible;
- (b) except in respect of a graduated glass measure, be uniformly spaced; and
- (c) in the case of denominated graduations, be distinguished by longer lines than the intermediate graduations.

(2) The graduations on a steelyard shall –

- (a) consist of notches or incised or embossed lines so defined that the position of the poise with respect thereto is clearly indicated; and
- (b) be cut, incised or embossed in one plane, at right angles to the steelyard and parallel to each other.

**9.** (1) No person shall use in trade an instrument which is erected or placed upon an unsuitable or insufficiently strong or stable base or foundation. Improper use of instruments, weights or measures

(2) No person shall use in trade a platform machine or weighbridge to ascertain the weight of any vehicle or other article unless such instrument –

- (a) has a platform or platforms or a rail or rails, as the case may be, of sufficient size to support completely such vehicle or other article; and
- (b) is of sufficient capacity to permit of the weighing of such vehicle or other article when so supported on the platform or platforms, or rail or rails, as the case may be.

(3) No person shall use a counter machine or a self-indicating weighing instrument provided with a sliding or tare weight otherwise than for factory use.

(4) No person shall use in trade a spring balance which is not of a type approved by the Minister under section 13 of the Act.

(5) Where a person uses in trade a dry measure of capacity for the measurement of any article he shall ensure that the article is neither heaped nor pressed in the measure, but is level with the brim.

(6) Where two or more measures of length are attached to a counter no person shall use in trade such measures unless they are contiguous or are not less than 1,5 metres apart.

(7) Where a person in a shop or other place sells by retail by weight any article which is weighed in the sight and presence of the purchaser and delivered to him immediately thereafter he shall use for such weighing

a weighing instrument which is so sited that the weighing and the weight indicated by the instrument are clearly visible to the purchaser at all times.

Conditions  
for refusal to  
assize

**10.** (1) An assizer shall refuse to assize an instrument, weight or measure which –

- (a) is not properly constructed or when, in his opinion, its material or mode of construction or any part thereof or its nature or condition appears likely to render it unsuitable for use in trade;
  - (b) has unusual or novel features, unless it is of a design or pattern in respect of which a certificate has been issued in terms of section 13 of the Act;
  - (c) is not sufficiently strong to withstand the wear and tear of ordinary use in trade;
  - (d) is not complete in itself;
  - (e) is not in a clean state; or
  - (f) bears a manufacturers' or other mark which might be mistaken for the stamp of assize.
- (2) An assizer shall refuse to assize an instrument which –
- (a) has interchangeable or reversible parts, unless the interchange or reversal does not affect the accuracy of the instrument;
  - (b) has removable parts, the removal of which would affect the accuracy of the instrument, unless the parts are such that the instrument cannot be used without them.
- (3) An assizer shall refuse to assize a weighing instrument which –
- (a) has a scoop, pan, plate or other part which is essential to its operation, broken;
  - (b) has a scoop, pan or plate of such size or shape as may lead to incorrect weighing either through its fouling the housing of the scale, or because proper contact between the knife edge and bearings is disturbed;
  - (c) has a goods-plate which is readily absorbent on account of faulty glazing or on account of the extent to which it is cracked or chipped;
  - (d) has a friction plate, stay, hook or loop which is not of hardened steel or an approved material; or
  - (e) has packing at the knife edges which, in the opinion of the assizer, is either excessive as to the number of pieces or is in other respects unsuitable for the purpose.
- (4) An assizer shall refuse to assize an accelerating weighing instrument, other than an accelerating deadweight machine.

(5) An assizer shall refuse to assize a weighing instrument which has not been previously assized, unless the name of the manufacturer of the instrument is marked thereon.

## PART II

### WEIGHING INSTRUMENTS

11. (1) Subject to the other provisions of this regulation, a weighing instrument shall be tested by the direct application of standard weights. Testing of weighing instruments

(2) An automatic weighing machine shall be tested -

(a) where practicable, by the direct application of standard weights;

(b) by comparing the load delivered against standard weights.

(3) Subject to the provisions of subregulation (5), a weighbridge shall be tested by the direct application

(a) of standard weights; or

(b) of test weights provided by the owner or scale manufacturer or maintenance contractor.

(4) Subject to subregulation (5), a weighing instrument kept in stock for sale which is tested on the premises of a dealer in or repairer of scales shall be tested by the direct application -

(a) of standard weights, or

(b) of test weights provided by the dealer or repairer, as the case may be.

(5) When a weighing instrument is tested and sufficient standard or test weights are not available, auxiliary material may be used to make weight.

12. (1) A weighing instrument shall be tested for error by ascertaining the weight required to overcome the error in that instrument. Limits of error and sensitiveness

(2) A vibrating weighing instrument shall be tested for sensitiveness by loading the instrument to its capacity, or as near thereto as is practicable, with the beam or steelyard in a horizontal position and ascertaining that the addition of the amount shown in the appropriate table for an instrument of that class and capacity causes the beam or steelyard to turn.

(3) An accelerating deadweight machine shall be tested for acceleration by loading the instrument to its capacity, or as near thereto as is practicable, with the beam at the extremity of its travel, and ascertaining that the subtraction of the amount shown in the third column of Table VI for an instrument of that capacity causes the beam to return to its initial position.

(4) The limit of error allowed and the sensitiveness required in a weighing instrument of a particular class shall be –

- (a) in the case of a new or repaired instrument, the appropriate limit of error and the sensitiveness prescribed in this Part;
- (b) in the case of a weighing instrument other than an automatic weighing instrument which is not new or repaired, twice the appropriate limit of error and sensitiveness prescribed in this Part.

(5) The limit of error allowed and the sensitiveness required in a weighing instrument of a capacity not specified in the appropriate table shall be the limit of error and the sensitiveness which bear the same proportion to the capacity of that instrument as the limits of error and sensitiveness for a similar instrument of the next lower capacity specified in the table bear to the capacity of such latter instrument.

(6) Where a weighing instrument is tested at graduations below the capacity of that instrument, the limit of error allowed shall be –

- (a) below one quarter of the capacity, one-quarter of the prescribed limit of error;
- (b) one quarter of the capacity or over but not exceeding three quarters of the capacity, one half of the prescribed limit of error; and
- (c) above three quarters of the capacity, the prescribed limit of error.

Poises

**13.** (1) Where lead is used for adjusting purposes on any poise it shall not come into contact with the beam or steelyard.

(2) A poise shall be provided with an adjusting hole of such size, shape and design as to permit readily of necessary adjustment.

(3) A poise shall be so constructed that no part thereof can be detached without the use of a mechanical appliance.

Counterpoise weights

**14.** (1) A counterpoise weight shall be marked in equivalents of 2 kg, 5 kg, 10 kg, 20 kg, 25 kg, 50 kg, 100 kg or an integral multiple of 100 kg.

(2) A counterpoise weight used, or intended for use, on platform machines used for weighing corrosive articles, including hides and skins, shall be made of brass, nickel-steel, stainless steel or other corrosion resisting metal.

(3) A counterpoise weight shall have only one undercut adjusting hole containing fixed lead sufficient to cover adequately the bottom of such hole, and with room to permit future adjustments.

(4) A counterpoise weight of an actual weight of 100 gram or less shall be made of brass.

(5) Where more than one platform machine provided with counterpoise weights is kept or used by any person on any premises or on a public

market, each such counterpoise weight shall be identified with the weighing instrument to which it belongs by –

- (a) a number conspicuously and indelibly marked and corresponding to a number similarly marked on the pillar and on the counterbalance of the instrument; or
- (b) a band of paint, of a colour in distinct contrast to the colour of the weight, on the edge of the weight, corresponding to a band of paint of the same colour on the pillar and on the counterbalance of the instrument;

Provided that this subregulation shall not apply to a counterpoise weight adjusted to a direct and exact ratio of 50 : 1 or 100 : 1.

**15.** (1) Knife edges shall –

Knife edges  
and bearings

- (a) be firmly secured in position;
- (b) be in true parallelism; and
- (c) bear throughout the entire length of the parts designed to be in contact with the bearings.

(2) Knife edges and bearings shall be of hardened steel, agate or an approved material and the load-carrying parts shall not show scratches when tested by means of the application of a superfine smooth file.

**16.** (1) A weighing instrument shall be in balance —

Balance

- (a) when unloaded; and
  - (b) where a loose receptacle or frame is used in conjunction with such instrument, when the receptacle or frame is attached thereto.
- (2) Balance shall be indicated –
- (a) in the case of a vibrating weighing instrument, by the beam or steelyard returning to the position of equilibrium when disturbed therefrom;
  - (b) in the case of a self-indicating weighing instrument or a weighing instrument provided with a graduated indicating plate or a difference chart, by the pointer coming to rest at the position of equilibrium or zero graduation with the bubble of any spirit level provided, in its true position;
  - (c) in the case of a counter machine constructed on the Beranger principle, by two pointers, each attached to a subsidiary beam, coming to rest directly opposite each other;
  - (d) in the case of an accelerating deadweight machine, by the beam, on being released from the stop under the weights-pan, falling gently to the stop under the goods-pan; and

Automatic  
weighing  
machines

- (e) in the case of a weighing instrument which indicates the weight by means of a printed statement, by the figure nought being printed on the statement.
  - (3) Balance shall not be affected when the load is removed from the instrument.
  - (4) Where a weighing instrument is provided with a balance box or a balance or gravity ball, such device shall be capable of adjustment only by the use of a mechanical appliance.
- 17.** (1) An automatic weighing instrument shall be –
- (a) certified by the Minister in terms of section 13 of the Act;
  - (b) securely fixed in the position in which it will operate;
  - (c) tested *in situ* with the material or produce it is intended to weigh;
  - (d) fitted with seals to protect all adjusting devices or have all such devices operable only with a special detachable key;
  - (e) marked with clear marks of identification on all parts that require to be dismantled for any purpose whatsoever, such marks to give a clear indication of the parts which are to match on reassembly;
  - (f) tested by taking, subject to the provisions of regulation 11 (2), not less than twenty sample deliveries either at random or in sequence, such test to be repeated as many times as the assize officer considers necessary. In testing “totalizing” machines, thirty loads shall be passed over the machine, ten of which shall be minimum loads, ten maximum loads and ten of the mean between the minimum and maximum loads; and
  - (g) marked with a stamp of assize upon a lead plug in a conspicuous place on the beam, main body or casing of the instrument.
- (2) Subject to regulation 12, the limits of error allowed on an automatic weighing instrument shall be –
- (a) for instruments in excess of 100 grams capacity –
    - (i) maximum error in excess of the amount purported to be delivered – one half per centum in any article of the twenty or more samples;
    - (ii) maximum error in deficiency of the amount purported to be delivered – one quarter per centum; and
    - (iii) such that the average error of a sample of twenty or more deliveries does not exceed one quarter per centum in excess only; and
  - (b) for instruments of 100 grams or less in capacity, the errors allowed shall be double those specified in paragraph (a).

- 18.** (1) Beam scales shall be classified as follows –
- (a) Class 1, comprising precision balances provided with means for relieving all the knife edges and bearings;
  - (b) Class 2, comprising cream test beams and beam scales, other than Class 1 beam scales, used for weighing chemicals, drugs, fine seeds or precious metals or stones; and
  - (c) Class 3, comprising beam scales other than Class 1 or Class 2 beam scales.
- (2) A new or repaired Class 2 or Class 3 beam scale shall be stamped “Class 2” or “Class 3” as the case may be.
- (3) Any device for adjusting the balance of a beam scale shall be permanently secured and so attached that it cannot readily be tampered with:
- Provided that a Class 1 or Class 2 beam scale may be fitted with –
- (a) threaded balancing screws at the extremities of the beam;
  - (b) flags; or
  - (c) an approved balancing device.
- (4) In a beam scale provided with a pointer moving across a graduated indicating plate or difference chart, the pointer shall travel beyond the extreme graduation on each side of the point of equilibrium or zero graduation. If the chart is graduated on the heavy side only the pointer shall travel beyond the extreme graduation on that side and for a corresponding distance on the ungraduated side.
- (5) A beam scale shall be tested –
- (a) with the pan loaded to half the capacity of the scale and any difference in the accuracy of the instrument resulting from moving the knife edges or bearings laterally, or backwards or forwards, within the limits of movement, shall not exceed half the limit of error prescribed in subregulation (6); and
  - (b) at capacity.
- (6) Subject to the provisions of regulation 12, the limit of error allowed and the sensitiveness required in a Class 1, Class 2 or Class 3 beam scale of a capacity specified in the first column of Table I, II or III, as the case may be, are those specified opposite thereto in the second and third columns respectively of Table I, II or III, as the case may be.
- (7) On a beam scale the stamp of assize shall be stamped upon a lead plug inserted in the beam immediately under or over the fulcrum knife edge or as near thereto as is practicable or, where the beam is totally

enclosed in a housing, upon a lead plug securely fitted in a cup riveted to that housing.

Counter  
machines

- 19.** (1) In a counter machine –
- (a) the supports for the pans shall be of rigid structure; and
  - (b) the centre fork shall be so secured that it cannot twist or get out of place.
- (2) A counter machine constructed on the Beranger principle shall, if it is –
- (a) a closed Beranger, have –
    - (i) its working parts totally enclosed in a housing; and
    - (ii) pans which, if interchangeable, do not affect the balance when interchanged;
  - (b) an open Beranger, have –
    - (i) a capacity not exceeding 15 kg.;
    - (ii) a number stamped on any loose pan and on the frame or beam, such number commencing with the final two digits of the year in which it was manufactured;
    - (iii) the weights pan of integral construction or securely fixed to its cross by means of two or more rivets;
    - (iv) the support for the goods pan of welded or riveted construction and without holes in its upper surface;
    - (v) a frame of cast iron or mild steel, which stands level upon a level plate without rocking;
    - (vi) in the case of a steel frame, not less than three spreaders between the two sides to stiffen them;
    - (vii) if it is provided with anchor links, such links irremovable without the use of a mechanical appliance, and hardened taper pins as guard pins for securing such links; and
    - (viii) pans of such shape that no tipping of the pan occurs when weights equal to half the capacity of the machine are placed in any position on either pan.
- (3) Material used for balancing purposes shall be contained in a balance box which is –
- (a) securely fixed to the undersurface of a fixed weights pan or the support for a weights pan; and

- (b) capable of containing lead to a weight not exceeding one per centum of the capacity of the machine.
- (4) On a counter machine the travel of the beam each way from the horizontal position shall be, where the capacity of the machine is –
  - (a) not over 2 kg not less than 6 mm;
  - (b) over 2 kg and not over 5 kg not less than 7 mm;
  - (c) over 5 kg and not over 10 kg not less than 8 mm;
  - (d) over 10 kg and not over 20 kg not less than 10 mm; and
  - (e) over 20 kg not less than 12 mm.
- (5) A counter machine shall be tested –
  - (a) with the pan loaded to half the capacity of the machine and any difference in the accuracy of the instrument resulting from moving the knife edges or bearings laterally, or backwards and forwards, within their limits of movement, shall not exceed half the limit of error prescribed in regulation (6);
  - (b) with a weight or weights equal to half the capacity of the machine placed on the goods pan anywhere within a distance from the centre equal to one-third the greatest length of the pan, or, if the pan has a vertical side, against the middle of that side, and a similar weight placed in any position on the weights pan, and the machine shall indicate the same weight within half the limit of error prescribed in regulation (6);
  - (c) at capacity with the weights placed centrally on each pan, unless the goods pan is in the form of a scoop in which case half the total weight shall be placed against the middle of the back of the scoop and the other half in any position on the scoop.
- (6) Subject to regulation 12, the limit of error allowed and the sensitive-ness required in a counter machine of a capacity specified in the first column of Table IV, are those specified opposite thereto in the second and third columns respectively of Table IV.
- (7) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the beam:
 

Provided that in the case of a closed Beranger it may be stamped upon the housing or upon a lead plug inserted therein.
- 20.** (1) In a crane machine the range of balance shall not exceed two per centum of the capacity of the machine.
- (2) A crane machine shall be tested at as many numbered graduations as the assizer considers necessary.

Crane  
machines

(3) Subject to the provisions of regulation 12 the limit of error allowed and the sensitiveness required in a crane machine of a capacity specified in the first column of Table V shall be double those specified opposite thereto in the second and third columns respectively of Table V.

(4) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous part of the steelyard or, where the machine has no steelyard, of the housing.

(5) An assizer shall refuse to assize a crane machine not constructed on the lever principle unless it is of a design or pattern in respect of which a certificate has been issued in terms of section 13 of the Act.

Deadweight  
machines

**21.** (1) In a deadweight machine --

(a) any goods-platform shall not exceed in length the length of the beam and in width double the width of the beam and shall not be fitted with folding wings which increase such dimensions by more than one-third in either direction; and

(b) any platform shall be made of metal or an approved material.

(2) Material used for balancing purposes shall be contained in a balance box securely fixed to the under surface of a platform.

(3) The travel of the beam from the horizontal position shall be not less than --

(a) in the case of an accelerating deadweight machine 20 mm; and

(b) in the case of a deadweight machine which is not an accelerating deadweight machine, 15 mm either way.

(4) A deadweight machine shall be tested --

(a) with weights equal to half the capacity of the machine placed successively at the middle of the front and of the back of each platform and centrally over the knife edges on each side, and the machine shall indicate the same weight within half the limit of error prescribed in subregulation (5); and

(b) at capacity, and the weights shall be distributed evenly on the platforms.

(5) Subject to the provisions of regulation 12, in a deadweight machine of a capacity specified in the first column of Table VI --

(a) which is an accelerating deadweight machine, the limit of error allowed and the weight required to bring the beam back from its position of maximum displacement are those specified opposite thereto in the second and third columns respectively of Table VI;

(b) which is not an accelerating deadweight machine, the limit of error allowed and the sensitiveness required are those specified opposite thereto in the second column of Table VI.

(6) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the beam.

22. (1) In a platform machine or weighbridge –

Platform  
machines and  
weighbridges

- (a) the upper surface or edge of the steelyard shall be in a straight plane from the zero graduation to the nose end;
- (b) there shall be no readily removable parts other than the counter-balance to support the counterpoise weights;
- (c) adequate stops shall be provided to prevent any poise from travelling behind the zero graduation: and
- (d) provided with a load-carrying rail or rails, such rail or rails shall be distant from any other rail or rails not less than 10 mm and where such load-carrying rails overlap or have a bridging piece a gap of 5 mm shall be maintained between such overlapping parts.

(2) A weighbridge shall have –

- (a) provision for adequate drainage and the pit kept free from any accumulation of water, mud or debris;
- (b) its approaches smooth, straight and level for a distance not less than the length of the platform at each end of such weighbridge;
- (c) the building housing the chart or steelyard so constructed that the operator has a clear and unobstructed view of the entire platform or platforms;
- (d) the platform so protected as to allow vehicles to pass on and off the platform at the ends only; and
- (e) foundations of adequate strength to support, without change of position, both the mechanism and a load equal to the capacity of the weighbridge.

(3) Where a platform machine or weighbridge is not provided with a tare-beam, the weight of any loose receptacle or frame used in conjunction with the instrument shall be accurately compensated for by means of a counterpoise weight distinctive in shape from any of the ordinary counterpoise weights belonging to the instrument. Such compensating weight shall have the words "TARE WEIGHT" legibly and conspicuously stamped on its edge.

(4) The range of balance –

- (a) in a platform machine, shall not exceed one-half per centum of the capacity of the machine and shall not be less than one-eighth per centum of such capacity each way from the centre of travel of the ball; and

- (b) in a weighbridge, shall be double the range permitted in a platform machine.
- (5) The travel of the steelyard each way from the horizontal position shall be not less than –
  - (a) in a platform machine, 10 mm; and
  - (b) in a weighbridge, 12 mm.
- (6) A platform machine or weighbridge shall be tested –
  - (a) with a load which is equal to, or is as near as is practicable to, one quarter of its capacity, and the machine shall indicate the same weight within half the limit of error prescribed in subregulation (7) whether the load is placed on the middle or near the ends or corners of the platform;
  - (b) at as many numbered graduations of the steelyard or chart as the assizer considers necessary and also each individual counterpoise weight, drop weight, tare bar, weigh bar, or any other device used to increase the capacity of the machine shall be tested;
  - (c) at capacity with the weights and materials evenly distributed on the platform;
  - (d) and the instrument shall be correct whether the test is forward or backward;
  - (e) in the case of a dormant platform machine, weighbridge or overhead weigher, *in situ*, and it shall be correct when the load is run on or off the platform or load-carrying rail, as the case may be; and
  - (f) it shall, if fitted with a locking handle or relieving gear, be correct when the machine is put slowly out of and into action.
- (7) Subject to the provisions of regulation 12 the limit of error allowed and the sensitiveness required are –
  - (a) in the case of a platform machine of a capacity specified in the first column of Table VII, those specified opposite thereto in the second column of Table VII; and
  - (b) in the case of a weighbridge of a capacity specified in the first column of Table V, those specified opposite thereto in the second column of Table V.
- (8) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible position on the instrument and the official date stamp shall be stamped upon the lead in the adjusting hole of any counterpoise or tare weight.
- (9) An assizer shall refuse to assize –

- (a) an instrument of the type known as Union scales; or
- (b) a platform machine having counterpoise weights which, when added to the full value of the steelyard reading, represent a weight greater or less than the capacity of the machine.

**23.** (1) In a self-indicating weighing instrument –

Self-indicating weighing instruments

- (a) in which weight indications are dependent on the extension of a spring or springs, such spring or springs shall be iso-elastic or a temperature compensating device shall be incorporated;
  - (b) other than a dormant platform machine, weighbridge, suspended self-indicating weighing instrument or a self-indicating weighing instrument specifically designed for use in an out-of-level position, a circular spirit level or cross spirit level shall be provided;
  - (c) error due to parallax shall not exceed the value of the smallest sub-division;
  - (d) the indicating wire or the extremity of the indicating pointer shall not exceed in width or thickness the width of any graduation, and the extremity of the pointer shall meet but not obscure the graduations;
  - (e) which is new or repaired and is provided with a cylindrical or revolving chart, any indicating wire shall be a single wire; and
  - (f) in which the chart is partly enclosed, the aperture through which the indications are read shall be sufficiently large to permit the next lower numbered graduation to be read.
- (2) The graduations on the chart shall –
- (a) in the case of a platform machine or weighbridge –
    - (i) not exceed 0,8 mm or 1,5 mm in width in a platform machine or weighbridge respectively; and
    - (ii) be not less than 3 mm apart, measured from centre to centre, whether or not they are on opposite sides of a dividing line; and
  - (b) in the case of a self-indicating weighing instrument other than a platform machine or weighbridge –
    - (i) not exceed 0,4 mm in width;
    - (ii) be not less than 1,5 mm apart, measured from centre to centre, whether or not they are on opposite sides of a dividing line;

Provided that a lens or other approved device may be fitted to the instrument for the purpose of magnifying the graduations so as to bring them into conformity with this subregulation.

(3) The weight value of the smallest sub-division of the chart shall, where the capacity of the chart is –

- (a) not over 1 kg not exceed 5 g;
- (b) over 1 kg and not over 10 kg not exceed 10 g;
- (c) over 10 kg and not over 15 kg not exceed 20 g;
- (d) over 15 kg and not over 25 kg not exceed 50 g;
- (e) over 25 kg and not over 50 kg not exceed 100 g;
- (f) over 50 kg and not over 100 kg not exceed 200 g;
- (g) over 100 kg and not over 250 kg not exceed 500 g;
- (h) over 250 kg and not over 500 kg not exceed 1 kg;
- (i) over 500 kg and not over 1,000 kg not exceed 2 kg;
- (j) over 1,000 kg and not over 2,000 kg not exceed 5 kg;
- (k) over 2,000 kg and not over 5,000 kg not exceed 10 kg;
- (l) over 5,000 kg and not over 15,000 kg not exceed 20 kg; and
- (m) over 15,000 kg not exceed 50 kg;

(4) A self-indicating weighing instrument shall be tested –

- (a) to ensure that the graduations indicating value in money are in alignment with those indicating weight, and a sufficient number of computations shall be checked to establish their accuracy;
- (b) at as many graduations as the assizer considers necessary, and the instrument shall be correct whether the test is forward or backward;
- (c) to ensure that the instrument, if fitted with two charts indicating weight, shows the same indication on both;
- (d) if it is specifically designed for use in an out-of-level position, with the instrument in a level position and again with the instrument in an out-of-level position;
- (e) if it is fitted with a ticket printer, to ensure that the printer cannot operate unless the weight indicator is stationary; and
- (f) by applying the tests prescribed in regulations 19, 20 and 22, in so far as they are applicable to the self-indicating weighing instrument being tested.

(5) Subject to the provisions of regulation 12, the limit of error allowed on a self-indicating weighing instrument is the weight corresponding to one-half of the smallest sub-division on the chart.

(6) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the instrument.

- 24.** (1) In a spring balance –
- (a) the chart shall –
    - (i) be clearly and indelibly marked “TRADE SPRING BALANCE”;
    - (ii) bear a statement of the weight value of the smallest sub-division; and
    - (iii) be made of white enamel, polished brass, or an approved material so protected that the graduations and other markings are clearly visible;
  - (b) the graduations on the chart shall not –
    - (i) exceed 0,8 mm in width; or
    - (ii) be less than 3 mm apart, measured from centre to centre, whether or not they are on opposite sides of a dividing line;
  - (c) where a temperature compensating device or iso-elastic spring or springs is incorporated, it shall be capable of compensating temperature variations of 10°Celsius in balance and at load;
  - (d) any ball-bearing unit shall be protected against dust and dirt;
  - (e) the extremity of the indicating pointer shall not –
    - (i) exceed in width or thickness the width of any graduation; and
    - (ii) be more than 2 mm from the chart;
  - (f) a suitable balancing device capable of adjustment only by the use of a mechanical appliance shall be provided; and
  - (g) back-balanced for use with a bag, sack, pan or other means of loading, such fact shall be clearly stated on the chart.
- (2) The weight value of the smallest sub-division of the chart shall, where the capacity of the chart is –
- (a) under 1 kg not exceed 5 grams;
  - (b) 1 kg or over and under 5 kg not exceed 10 grams;
  - (c) 5 kg or over and under 10 kg not exceed 20 grams;
  - (d) 10 kg or over and under 20 kg not exceed 50 grams;
  - (e) 20 kg or over and under 50 kg not exceed 100 grams; and
  - (f) 50 kg or over not exceed  $\frac{1}{2}\%$  of such capacity.
- (3) The range of balance shall not exceed one per centum of the capacity of the spring balance.
- (4)(a) A spring balance shall be tested at as many graduations as the assizer considers necessary, and it shall be correct whether the test is forward or backward.

- (b) The assizer may test the balance for efficiency or ability to recover by leaving on the pan or hook a load equal to the capacity of the balance for a period not exceeding twenty-four hours, and after the expiration of a further four hours testing for accuracy.
- (5) Subject to the provisions of regulation 12, the limit of error allowed on a spring balance is the weight corresponding to one-half of the smallest sub-division.
- (6) The stamp of assize shall be stamped upon a lead plug inserted in the chart, or in a prominent position on the instrument.
- (7) An assizer shall refuse to assize a spring balance which —
  - (a) has a capacity of less than 5 kg; or
  - (b) is not of the circular suspended type.
- 25.** (1) In a steelyard or wall beam —
  - (a) the steelyard shall be made of wrought-iron, steel or an approved metal and shall be perfectly straight;
  - (b) a stop to prevent excessive oscillation of the steelyard shall be provided;
  - (c) any load hook shall be securely attached to the instrument;
  - (d) end fittings to prevent the poise-carrier riding off the steelyard shall be securely attached; and
  - (e) any poise shall move freely without risk of injury to the notches and there shall be a stop to prevent it travelling behind the zero graduation.
- (2) In a wall beam —
  - (a) the frame and bracket shall be of adequate strength to support, without deflection, both the wall beam and a load equal to the capacity of the wall beam;
  - (b) on a swivel bracket, the steelyard shall be level in all positions; and
  - (c) the range of balance shall not exceed one-half per centum of the capacity of the wall beam.
- (3) The travel of the steelyard of a wall beam each way from the horizontal position shall be not less than 10 mm.
- (4) A wall beam or steelyard shall be tested at as many graduations as the assizer considers necessary, and the instrument shall be correct whether the test is forward or backward.
- (5) Subject to regulation 12, the limit of error allowed and the sensitiveness required are —
  - (a) in the case of a steelyard of a capacity specified in the first column of

Table VII double those specified opposite thereto in the second column of Table VII; and

(b) in the case of a wall beam of a capacity specified in the first column of Table VII, those specified opposite thereto in the second column of Table VII.

(6) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the instrument and a date stamp shall be stamped upon the lead in the adjusting hole of the poise.

(7) An assizer shall refuse to assize —

(a) a counter steelyard;

(b) a steelyard of a capacity of less than 50 kg; and

(c) a steelyard with three hooks.

### **PART III**

#### **WEIGHTS**

**26.** (1) A weight shall —

Weights

(a) be free from flaws and, except for the marking of the denomination and the maker's name, be smooth on all its surfaces; and

(b) if it is a new iron weight, be galvanised, oxidized, painted or protected by an approved process.

(2) If a weight is marked with the maker's name, or any property mark, code or symbol, the size of the letters thereof shall not exceed one-half of the size of the letters marking the denomination.

(3) A weight shall be hexagonal, cylindrical or block shape:

Provided that weights of 500 mg or less may be in the form of wire shaped into one, two or five sections to indicate numerical value or flat sheet with one edge or corner turned up.

(4) The adjusting hole shall be —

(a) undercut, on the under surface of the weight and shall not extend to the upper surface of the weight; provided that in the case of a cylindrical weight the assizer may accept arrangements for adjusting and stamping by means of a hole in the knob of the weight; and

(b) plugged with lead which —

(i) in the case of an iron weight, is at least 3 mm thick; and

(ii) in the case of a new weight, does not extend to within 3 mm of the under surface of the weight.

(5) A weight shall be tested on an assizer's balance or beam scale against a standard weight.

- (6) The limit of error allowed —
  - (a) on a metric weight of a denomination specified in the first column of Table VIII —
    - (i) which is made of iron, is that specified opposite thereto in the second column of Table VIII;
    - (ii) which is not made of iron, is that specified opposite thereto in the third column of Table VIII;
  - (b) on a metric carat weight of a denomination specified in the first column of Table IX, is that specified opposite thereto in the second column of Table IX.
- (7) The stamp of assize shall be stamped —
  - (a) if the weight is provided with an adjusting hole, upon the lead in that hole;
  - (b) if the weight is not provided with an adjusting hole, upon the under surface of the weight:

Provided that where the size of the weight is such as to render this impracticable, a certificate shall be issued in lieu thereof

Weights not  
assizable

- 27.** An assizer shall refuse to assize —
- (a) a weight made of solder, tin or any other soft metal;
  - (b) a weight made of aluminium or other metal of low density of over 1 gram denomination;
  - (c) a cased weight or weight made of two or more unalloyed metals;
  - (d) a weight marked with a trade mark other than a maker's name;
  - (e) an iron weight under 100 grams;
  - (f) an iron weight with a removable or split ring;
  - (g) a new ring weight;
  - (h) a weight provided with more than one adjusting hole; or
  - (i) a weight of a denomination not specified in Part I of the Third Schedule hereto.

#### **PART IV MEASURES**

Dry measures  
of capacity

- 28.** (1) A dry measure of capacity —
- (a) shall be made of aluminium, brass, bronze, copper, nickel, sheet iron, steel, tin plate, or an approved material;
  - (b) may be protected by electro-plating, galvanisation, or an approved process; and

- (c) of 50 litres or under, shall be cylindrical in form with the internal diameter not differing by more than five per centum from the depth.
- (2) The capacity of a dry measure of capacity shall be defined by the brim of the measure.
- (3) A dry measure of capacity shall be tested either with water or in the following manner with fine seed —
  - (a) the standard shall be filled with seed passed through a hopper, a distance of 150 mm being left between the bottom of the hopper and the top of the standard; and
  - (b) the seed in the standard shall then be passed through the hopper into the measure being tested, a distance of 150 mm being left between the bottom of the hopper and the top of the measure.
- (4) The limit of error allowed in a dry measure of capacity of a capacity specified in the first column of Table XI, is that specified opposite thereto in the second column of Table XI.
- (5) The stamp of assize shall be stamped near the brim of the measure directly above the position where the capacity is marked.
- (6) An assizer shall refuse to assize a dry measure of capacity not specified in paragraph 3 of Part II of the Third Schedule hereto.

**29.** (1) A liquid measure of capacity —

- (a) shall be made of glass or of aluminium, brass, bronze, copper, nickel, pewter, sheet iron, silver, steel, tin plate, white metal or an approved material;
- (b) may be protected by anodising, electro-plating, enamelling, galvanisation, tinning, or an approved process;
- (c) which is made of brass, bronze or copper, shall have the inside surface well tinned;
- (d) which is electro-plated, shall be uniformly coated and shall show no signs of peeling;
- (e) shall not have a strengthening rib or ring which might be mistaken for a graduation;
- (f) shall not have a false bottom;
- (g) made of metal, shall not have a bottom rim of a depth greater than is necessary to protect the bottom of the measure;
- (h) shall not be provided with a lip or retaining edge which increases the capacity of the measure by more than ten per centum;
- (i) shall drain completely when tilted to an angle of one hundred and twenty degrees from the vertical;

Liquid  
measures of  
capacity

- (j) if provided with a tap, shall drain completely without a prolonged dribble when the tap is open and the measure is in a level position;
  - (k) shall have its capacity stamped on the upper part of the body of the measure or on a metal plate permanently secured to such part; and
  - (l) made of glass which has its capacity defined by a line, shall have its capacity stamped near that line.
- (2) The capacity of a liquid measure of capacity shall be clearly defined —
- (a) if the measure is provided with a lip or retaining edge, by the bottom of the lip or retaining edge;
  - (b) if the measure is in the form of a milk can, by the bottom of the neck of the measure;
  - (c) if the measure is a glass measure other than a graduated glass measure, by —
    - (i) the brim of the measure; or
    - (ii) an indelible line not less than 50 mm in length and distant not less than 15 mm and not more than 40 mm from the brim; or
  - (d) if the measure is a measure not referred to in paragraph (a), (b) or (c), by the brim of the measure.
- (3) A metal dipping measure of capacity shall —
- (a) be of circular or elliptical section with vertical sides;
  - (b) be provided with a long handle;
  - (c) have sides the height of which do not differ by more than ten per centum from one and one-half times the mean dimension of its section; and
  - (d) not exceed one litre in capacity.
- (4) A graduated glass measure shall —
- (a) be of conical or cylindrical form;
  - (b) have a level base at right angles to the axis of the measure; and
  - (c) have graduations which are —
    - (i) parallel to the base of the measure;
    - (ii) not less than 1,5 mm apart; and
    - (iii) in the case of back graduations, coincidental with the front graduations when the measure is standing in a level position.

(5) A liquid measure of capacity shall be tested against a standard measure. When testing a glass measure the capacity of which is defined by a line, the level of the water shall be taken at the bottom of the meniscus.

- (6) The limit of error allowed on a liquid measure of capacity is —
- (a) in the case of a graduated glass measure with an internal diameter at the graduation tested or approximately that specified in the first column of Table XII, that specified opposite thereto in the second column of Table XII:

Provided that in the case of a burette, glass flask or pipette, the limit of error allowed shall be half the limit specified in Table XII, as the case may be;

- (b) in the case of a milk can of a capacity in the first column of Table XI, that specified opposite thereto in the third column of Table XI;
- (c) in the case of a measure other than a graduated glass measure or a milk can, of a capacity specified in the first column of Table XI, that specified opposite thereto in the second column of Table XI; and
- (d) in the case of a conical measure of a capacity specified in the first column of Table VI, that specified opposite thereto in the second column of Table VI.

(7) The stamp of assize shall be stamped —

- (a) if the measure is a metal measure provided with a lip or retaining edge, at the bottom of the inside of the lip or retaining edge; and
- (b) if the measure is not a metal measure provided with a lip or retaining edge, near the position where the capacity is marked.

(8) An assizer shall refuse to assize a liquid measure of capacity of a capacity not specified —

- (a) in the case of a graduated measure, in paragraph 1; or
- (b) in the case of a measure other than a graduated glass measure, in paragraph 2,

of Part II of the Third Schedule.

**30.** (1) A measure of length shall —

- (a) be made of brass, hardwood, ivory, steel, woven tape or an approved material;
- (b) if it is a rigid measure, be straight and free from flaws;
- (c) if it is a wooden measure, have both ends capped with metal and the tips riveted or fixed by an approved method; and

Measures of  
length

- (d) if it is provided with hinges or sliding or caliper arms, have no more play than is required for easy movement.
- (2) A measure of length shall not be sub-divided otherwise than into metres, decimetres, centimetres and millimetres.
- (3) A measure of length shall be tested —
  - (a) against a standard measure;
  - (b) in the case of a tape measure, whilst supported as far as practicable throughout its entire length on a plane and even base and subjected —
    - (i) in the case of a tape measure made wholly of metal, to 5 kg; and
    - (ii) in the case of a tape measure not made wholly of metal, to 1 kg, tension or pull.
- (4) The limit of error allowed on a measure of length is specified in Table X of the First Schedule.
- (5) The stamp of assize shall be stamped —
  - (a) if the measure is a tape measure, upon a metal label or disc securely fixed thereto; or
  - (a) if the measure is not a tape measure, near the zero graduation.
- (6) An assizer shall refuse to assize a measure of length of a denomination not specified in paragraph 5 of Part II of the Third Schedule.

Vehicle tanks

- 31.** (1) A vehicle tank or compartment shall —
  - (a) be of cylindrical or elliptical section;
  - (b) be fitted with a fixed-quantity indicator or provided with a dip-stick by means of which the liquid can be measured;
  - (c) if of elliptical section, have the length of the major axis of the section not more than one and a half times the length of the minor axis of the section;
  - (d) have a delivery outlet, pipe and valves which are completely separate from any other delivery outlet, pipe and valves on the same motor vehicle or trailer;
  - (e) have the delivery piping connected thereto of such design and construction that when the motor vehicle or trailer on which it is mounted is standing in a level position the tank or compartment can be completely drained;
  - (f) be effectively ventilated to prevent the formation of air-pockets; and

- (g) if it is new, have the filler opening of such size and construction as to permit of internal inspection.
- (2) In a vehicle tank or compartment fitted with a fixed-quantity indicator —
- (a) the marking of the capacity on the tank or compartment shall be preceded by the word "CAPACITY" and followed by the words "TO INDICATOR";
  - (b) the tank or compartment shall be stamped with a number which corresponds to a number similarly stamped on the delivery outlet so as to identify it with that outlet; and
  - (c) the indicator shall —
    - (i) be made of metal;
    - (ii) be fixed rigidly so as to indicate on the longitudinal axis and under the dome centrally situated on the top of such tank or compartment;
    - (iii) clearly and distinctly indicate, by means of a disc of at least 50 mm in diameter, the height to which the tank or compartment must be filled in order to contain its marked capacity; and
    - (iv) be adjustable, and so constructed that it can be sealed so as to prevent any change in its position without the seal being broken.
- (3) In a vehicle tank or compartment provided with a dip-stick —
- (a) the tank or compartment shall have a guide tube for the dip-stick, fixed centrally so that the dip-stick indicates on the longitudinal axis; and
  - (b) such dip-stick shall be —
    - (i) made of metal;
    - (ii) graduated to indicate the actual contents of the measure in centimetres and an appropriate table of capacity shall be carried on the vehicle and identified with the vehicle tank concerned;
    - (iii) indelibly stamped with a number which corresponds to a number similarly stamped on the tank or compartment so as to identify it with that tank or compartment; and
    - (iv) suspended from the upper rim of the guide tube by a metal cross bar, collar or hilt.

(4) The volume of a vehicle tank or compartment shall exceed the marked capacity of such tank or compartment by not less than one and one-half per centum of such capacity.

(5) A vehicle tank or compartment shall be tested —

- (a) with the tank or compartment in a level position;
- (b) against standard measures or with a bulk flow-meter assized immediately prior to the testing of the vehicle tank or compartment; and
- (c) if it is provided with an emergency valve for closing the delivery outlet, with such emergency valve open.

(6) The limit of error allowed on a vehicle tank, compartment or dip-stick is one-half per centum of its capacity at the indication tested.

(7) The stamp of assize shall be stamped —

- (a) if the tank or compartment is fitted with a fixed-quantity indicator, upon a lead seal attached to the indicator; or
- (b) if the tank or compartment is provided with a dip-stick, upon the metal at the top and bottom of the dip-stick.

(8) An assizer shall refuse to assize a vehicle tank or compartment provided with a dip-stick unless an accurate full scale chart of the capacity identified with the tank or compartment and with the dip-stick has been supplied to him.

(9) An assizer shall refuse to assize a vehicle tank or compartment which is deformed, dented or otherwise damaged.

(10) An assizer shall refuse to assize a dip-stick which touches the bottom of the tank or guide tube.

## PART V

### MEASURING INSTRUMENTS

Bulk  
flowmeters

**32.** (1) In a bulk flowmeter —

- (a) an air separator shall be provided which —
  - (i) prevents air passing through the meter to such an extent as to affect the accuracy of delivery; and
  - (ii) ensures non-registration when the supply of liquid fuel or oil fails;
- (b) there shall be no leakage;
- (c) the figures on any indicator shall be indelible, clear and legible;
- (d) the maker's name shall be stamped on the instrument;
- (e) the maximum and minimum rates of flow in litres or cubic metres per minute shall be shown;

- (f) in respect of which a certificate has been issued in terms of section 13 of the Act, the reference number of such certificate shall be shown; and
  - (g) where a pre-set mechanism is incorporated, the meter shall automatically stop delivery registration when the pre-set quantity has been delivered.
- (2) A bulk flow meter shall be tested —
- (a) after any dry hose has been flushed and the instrument reset to zero;
  - (b) to ensure that whenever the instrument is reset to zero, the indicating pointer is in alignment with the zero indication;
  - (c) by passing the liquid through the meter into a standard measure in as many deliveries and of such quantities as the assizer considers necessary or by comparison of the indication of the meter under test with the indication of an approved master meter or proving loop; and
  - (d) with varying heads of liquid or with varying bore by manipulation of the delivery valve as far as is practicable.
- (3) The limit of error allowed on a bulk-flowmeter is one-half per centum of the quantity tested, in excess only.
- (4) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the meter. A seal of assize shall be affixed where necessary to prevent access to the working parts or adjusting device without the seal being broken.

**33.** (1) In a fabric-measuring instrument —

- (a) the measuring rollers shall, when in position for measuring, be in true parallelism;
- (b) a braking device shall be fitted which ensures non-registration when the supply of fabric fails;
- (c) the rollers shall be free when the instrument is reset;
- (d) the chart or charts shall, when the instrument is reset, return to zero either automatically or by the operation of a special handle or device provided for that purpose; and
- (e) the indications shall be by means of graduations not less than—
  - (i) 20 mm apart in the case of graduations of a length value of 100 mm; or
  - (ii) 3 mm apart in the case of graduations of a length value of 25 mm; or by counters.

Fabric-measuring instruments

- (2) A fabric measuring instrument shall be tested —
- (a) by passing the standard or the fabric normally measured by that instrument through the instrument at right angles to the axis of the measuring rollers;
  - (b) and if it is necessary to remove the standard or fabric during the test, this shall only be done when an integral number of metres of the standard or fabric has passed through the instrument and the standard or fabric shall be re-inserted at the zero or initial graduation of the standard or fabric;
  - (c) and the instrument shall be correct whether the test is forward or backward; and
  - (d) to ensure that —
    - (i) the instrument, if fitted with two charts, shows the same indication of length on both;
    - (ii) any totalizing meter functions properly and correctly; the parts work freely throughout the range of the instrument; and
    - (iv) there is no back-lash in the mechanism.

(3) The limit of error allowed on a fabric measuring instrument is, for each metre or portion thereof indicated, 2 mm in deficiency and 4 mm in excess.

(4) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the instrument. A seal of assize shall be affixed where necessary to prevent access to the working parts or adjusting device without the seal being broken.

Liquid  
measuring  
devices

- 34.** (1) In a liquid measuring device —
- (a) adequate provision to prevent the formation of air-locks shall be made;
  - (b) there shall be no leakage; and
  - (c) any valve shall work freely.
- (2) A liquid measuring device shall be tested —
- (a) after the device, and any delivery hose or measure used in the test has been flushed; and
  - (b) in the case of each separate measuring chamber —
    - (i) by passing the liquid from the chamber into a standard measure, or, where this is not practicable, into the barrel, bottle, drum or other container and then into a standard measure; or

- (ii) where it is not practicable to test the liquid with a standard measure, by ascertaining the net weight of the liquid delivered and converting such weight into volume, basing the computation on the specific gravity of the liquid.

(3) The limit of error allowed on a liquid measuring device is one-half per centum of the quantity purported to be delivered, in excess only:

Provided that the limit of error allowed on a 25 ml dispensing or measuring tap is 1 ml, in excess only.

(4) The stamp of assize shall be stamped —

- (a) upon a lead plug inserted in a conspicuous and easily accessible part of the device; and
- (b) if the device is provided with a metal displacer or displacers to alter the capacity of a measuring chamber, upon such displacer or displacers.

(4) A seal of assize shall be affixed where necessary to prevent access to the working parts or adjusting device without the seal being broken.

**35.** (1) In this regulation —

Petrol pumps

“price indicator” means an indicator showing the value in money of the liquid fuel or oil delivered;

“volume indicator” means an indicator showing the volume of liquid fuel or oil delivered.

(2) A petrol pump shall —

- (a) be constructed to deliver liquid fuel or oil at one outlet only;
- (b) be provided with a clear and legible volume indicator;
- (c) not have a counting or totalizing device which may be confused with the volume indicator;
- (d) not leak at any point;
- (e) not, unless written permission from an assizer has been obtained, be fitted with a delivery hose exceeding five metres in length;

Provided that delivery hoses used in refuelling aircraft shall not be restricted as to their length.

When measuring the length of a delivery hose —

- (i) the length of the nozzle shall be included;
- (ii) the length of any swing or radial arm shall be excluded;
- (iii) which is retractable, the hose shall be measured from the point where it emerges from the housing and when fully extended;

- (f) if it is of fixed type —
  - (i) be securely mounted on a solidly constructed, level base;
  - (ii) be so sited as to permit the purchaser to have a clear and unobstructed view of the volume indicator and any price indicator or measuring chamber provided; and
  - (iii) be so sited that the adjusting mechanism and the plug for the stamp of assize are readily accessible; and
- (g) if it is used to measure oil, have a delivery hose which is permanently filled to the nozzle.
- (3) A petrol pump provided with a meter shall —
  - (a) be incapable of operation until the volume indicator and any price indicator are reset to zero;
  - (b) if it is used to measure liquid fuel, be —
    - (i) provided with a sight glass which clearly shows whether the delivery hose is completely filled before, during and after delivery; and
    - (ii) conspicuously marked “THIS GLASS MUST BE FULL BEFORE AND AFTER DELIVERY”;
  - (c) not be fitted with a swing arm unless such arm —
    - (i) has a radius of swing not exceeding two metres; and
    - (ii) is provided with a sight-glass of an approved pattern at the highest point of the swing arm or extension pipe immediately before the connection to the flexible hose;
  - (e) be provided with an air separator or cut-off valve which ensures non-registration when the supply of liquid fuel or oil fails; and
  - (f) be provided with a delivery hose which is permanently filled to the nozzle.
- (4) A petrol pump provided with one or more measuring chambers shall —
  - (a) have any measuring chamber clearly visible and made of clear glass;
  - (b) have the delivery hose so positioned as to allow complete discharge of the liquid measured from the delivery outlet of the pump;
  - (c) if it has more than one measuring chamber, be provided with a valve to prevent the liquid flowing from one chamber into another; and
  - (d) have each measuring chamber denominated.

(5) In a petrol pump provided with a price indicator, the indicator shall incorporate a device which clearly indicates the price per litre and regulates the registration on such indicator.

(6) A petrol pump shall be tested —

- (a) if it is provided with one or more measuring chambers, after passing at least five litres of liquid fuel through the delivery hose to prevent undue absorption during the test;
- (b) by passing the liquid into a standard measure in as many deliveries and of such quantities as the assizer considers necessary;
- (c) if it is provided with a meter, by a slow test which does not exceed a time limit of thirty seconds per 5 litres on any quantity delivered;
- (d) to ensure that —
  - (i) back-drainage does not exceed 25 ml per hour;
  - (ii) it is correct, whether the pump is operated rapidly or slowly;
  - (iii) the indications on the volume indicator are in agreement with those on the price indicator and with the price per litre indicated by the device referred to in subregulation (5), and a sufficient number of computations shall be checked to establish their accuracy;
  - (iv) if it is fitted with a nozzle control valve, no liquid fuel or oil is delivered when such valve is open and the pump is at rest;
  - (v) if it is fitted with two volume indicators, after delivery it shows the same indication of volume on both such indicators; and
  - (iv) if it is fitted with two price indicators, after a delivery it shows the same indication of value in money on both such indicators.

(7) The limit of error allowed —

- (a) in the case of a new or repaired pump shall be 0,5% of the quantity purported to be delivered, in excess only; provided that in a petrol pump used to measure lubricating oil, where a quantity of 500 ml or less is indicated the limit or error allowed is 2% of the quantity purported to be delivered in excess only; and
- (b) in the case of a pump in actual trade use shall be 1% of the quantity purported to be delivered, in excess only and 0,25% of the quantity purported to be delivered, in deficiency only.

Automatic  
measuring  
instruments

(8) The stamp of assize shall be stamped upon a lead plug inserted in a conspicuous and easily accessible part of the pump. A seal of assize be affixed where necessary to prevent access to the working parts or adjusting device without the seal being broken.

**36.** (1) An automatic measuring instrument shall be —

- (a) certified by the Minister in terms of section 13 of the Act;
- (b) securely fixed in the position in which it will operate;
- (c) tested *in situ* with the liquid it is intended to measure;
- (d) fitted with seals to protect all adjusting devices or have all such devices operable only with a special detachable key;
- (e) marked with clear marks of identification on all parts that require to be dismantled for any purpose whatsoever, such marks to give a clear indication of the mating parts which are to be matched on re-assembly;
- (f) tested at various heads and rates of delivery where these are not uniform;
- (g) tested by taking, subject to regulation 11 (2) not less than twenty samples either at random or in sequence, such test to be repeated as many times as the assizer considers necessary. In testing "totalizing" machines, thirty loads shall be passed over the machine, ten of which shall be minimum loads, ten maximum loads and ten of the mean between the minimum and maximum loads; and
- (h) marked with the stamp of assize upon a lead on a conspicuous part of the instrument on the main body of the machine.

(2) The limit of error allowed on an automatic measuring instrument shall be —

- (a) maximum error in excess of the amount purported to be delivered into the container — one per centum;
- (b) maximum error in deficiency of the amount purported to be delivered into the container — 0,5 per centum;
- (c) such that the average error of a sample of twenty or more deliveries does not exceed 0,5 per centum in excess only.

FIRST SCHEDULE (Regulation 2)  
 Table showing limits of error and sensitiveness

TABLE I  
**Beam Scales – Class 1**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
10g	1mg
20g	2mg
50g	3mg
100g	4mg
200g	5mg
500g	6mg
1kg	12mg
2kg	25mg
5kg	50mg
10kg	70mg
20kg	100mg

Application of the sensitivity allowance to a beam scale in equilibrium shall cause a change of rest point of not less than 5 divisions of the scale.

**Table II**  
**Beam Scales – Class 2**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
50g	15mg
200g	25mg
500g	30mg
1kg	60mg
2kg	120mg
5kg	250mg
10kg	500mg
20kg	500mg
50kg	1g

Application of the sensitivity allowance of Class 2 beam scale in equilibrium shall cause a change of rest point of not less than 5 divisions of the scale.

**Table III**  
**Beam Scales – Class 3**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
500g	200mg
1kg	300mg
2kg	400mg
5kg	600mg
10kg	800mg
20kg	1000mg
50kg	1500mg

Above 50 kg capacity add to the above 400mg for each 20kg of additional capacity.

Application of the sensitivity allowance to a Class 3 beam scale shall cause a change of rest point of not less than 10mm shown by the end of the indicator.

**TABLE IV**  
**Counter Machines**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
1kg	2g
2kg	4g
5kg	5g
7kg	5g
10kg	10g
15kg	10g
20kg	15g
50kg	20g

Application of the sensitivity allowance to a counter scale shall show a change of position of the scales of not less than 10mm or the full fall or travel specified in regulation 19 (4).

**Table V**  
**\*Crane Machines and Weighbridges**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
1000kg	400g
2000kg	300g
5000kg	1500g
10000kg	2kg
20000kg	4kg
50000kg	6kg
100000kg	8kg
200000kg	15kg

\*The error and sensitivity allowances for lever type crane machines are double the amounts shown above.

**Table VI**  
**Deadweight Machines**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>	<i>Recovery</i>
50kg	20g	50g
100kg	40g	100g
200kg	80g	200g
500kg	120g	300g

Dead weight scales include single lever coal scales and scales formerly known as "bob up" scale. Recovery is the weight required to bring the beam back, from its position of maximum displacement, to the horizontal.

**Table VII**  
**Platform machines, steelyards and wall beams**

<i>Capacity of Instrument</i>	<i>Error and sensitiveness allowed</i>
50kg	20g
100kg	40g
200kg	50g
500kg	100g
1000kg	200g
2000kg	400g
5000kg	800g

Steelyards commonly used as butchers steelyards are allowed double the amount shown above.

**Table VIII**  
**Weights**

(i) **for coarse weighing.**

<i>Denomination of Weight</i>	<i>Error allowed in excess only</i>	
	<i>iron</i>	<i>other</i>
20kg	3g	2g
10kg	2g	1500mg
5kg	1g	800mg
2kg	600mg	400mg
1kg	400mg	200mg
500g	200mg	100mg
200g	100mg	50mg
100g	40mg	20mg
50g		20mg
20g		10mg
		<i>Error allowed in excess or deficiency</i>
10g		10mg
5g		10mg
2g		5mg
1g		2mg
500mg		2mg
200mg		2mg
100mg		2mg

<i>Denomination of Weight</i>	<i>Error allowed in excess only</i>
50mg	2mg
20mg	1mg
10mg	0,5mg
5mg	0,2mg
2mg	0,2mg
1mg	0,1mg

**(ii) for fine weighing (pharmaceutical dispensing, chemicals, precious metals and comparable goods)**

<i>Denomination of Weight</i>	<i>Error allowed in excess only</i>
20kg	500mg
10kg	250mg
5kg	125mg
2kg	50mg
1kg	20mg
500g	10mg
200g	10mg
100g	5mg
50g	2mg
20g	1mg
	<i>Error allowed in excess or deficiency</i>
10g	0,5mg
5g	0,5mg
2g	0,5mg
1g	0,5mg
500mg	0,5mg
200mg	0,5mg
100mg	0,5mg
50mg	0,2mg
20mg	0,2mg
10mg	0,2mg
5mg	0,2mg
2mg	0,2mg
1mg	0,1mg

**Table IX**  
**Metric carat weights**

<i>Denomination of Weight</i>		<i>Error allowed in excess only</i>
500CM	(100g)	10mg
200CM		5mg
100CM		2mg
<i>Error allowed in excess or deficiency</i>		
50CM	(10g)	2mg
20CM		1mg
10CM		1mg
5CM	(1g)	1mg
2CM		1mg
1CM		1mg
0,5CM	(0,1g)	0,5mg
0,2CM		0,5mg
0,1CM		0,2mg
0,05CM		0,1mg
0,02CM		0,05mg
0,01CM		0,03mg
0,005CM		0,03mg

**Table X**  
**Measures of Length**

<i>Denomination</i>	<i>Allowances</i>			
	<i>End Measures</i>		<i>Line Measures</i>	
	<i>Long or in Excess</i>	<i>Short or in Deficiency</i>	<i>Long or in Excess</i>	<i>Short or in Deficiency</i>
100m	--	--	20mm	20mm
50m	--	--	15mm	15mm
30m	--	--	10mm	10mm
20m	--	--	7,5mm	7,5mm
10m	--	--	5,0mm	5,0mm
5m	--	--	2,5mm	2,5mm
3m	3mm	1,5mm	1,5mm	1,5mm
2m	2mm	1,0mm	1,0mm	1,0mm

<i>Denomination</i>	<i>Allowances</i>			
	<i>End Measures</i>		<i>Line Measures</i>	
	<i>Long or in Excess</i>	<i>Short or in Deficiency</i>	<i>Long or in Excess</i>	<i>Short or in Deficiency</i>
1m	1mm	0,5mm	0,5mm	0,5mm
500mm	0,8mm	0,4mm	0,4mm	0,4mm
300mm	0,6mm	0,3mm	0,3mm	0,15mm
100mm	0,5mm	0,25mm	0,2mm	0,1mm
10mm	0,2mm	0,1mm	0,1mm	0,05mm

The above errors are to apply to metal measures.  
Other measures to have double the above allowances.

**Table XI**  
**Measures of Capacity**

<i>Capacity of Measure or Value of Graduation</i>	<i>Allowances in Excess only</i>	
	<i>Conical Metal</i>	<i>Other</i>
100 litres and over	0,1 per cent	0,2 per cent
50 litres	65,0ml	125,0ml
20 litres	50,0ml	100,0ml
10 litres	40,0ml	75,0ml
5 litres	25,0ml	50,0ml
2 litres	12,5ml	25,0ml
1 litre	7,5ml	15,0ml
500ml	5,0ml	10,0ml
200ml	2,5ml	5,0ml
100ml	1,5ml	3,0ml
50ml	1,25ml	2,5ml
25ml	1,65ml	1,25ml
20ml	0,5ml	1,0ml
10ml	0,25ml	0,5ml

**Table XII**  
**Graduated Glass Measures for Druggists**

<i>Approximate Internal Diameter of Measure at the Graduation Tested</i>	<i>Allowances in Excess or Deficiency</i>	
	<i>Cylindrical and Conical</i>	<i>Flasks and Burettes</i>
	<i>ml</i>	<i>ml</i>
100mm	1,00	0,500
90mm	1,00	0,500
80mm	0,80	0,400
70mm	0,80	0,400
60mm	0,60	0,300
50mm	0,60	0,300
40mm	0,40	0,200
30mm	0,30	0,150
20mm	0,15	0,075
10mm	0,05	0,025

SECOND SCHEDULE (Regulation 7 (5))

**Abbreviations of denominations**

<i>Denomination</i>	<i>Abbreviation</i>
<i>WEIGHTS</i>	
Kilogram	kg
Gram	g
Decigram	dg
Centigram	cg
Milligram	mg
Metric Carat	CM
<i>MEASURES</i>	
Litre	l
Decilitre	dl
Centilitre	cl
Millilitre	ml
Metre	m
Decimetre	dm
Centimetre	cm
Millimetre	mm
Cubic Centimetre	cc
Cubic Metre	cu.m

THIRD SCHEDULE (Regulations 27, 28 (6), 29 (8), 30 (6)).

**Denominations of Weights and Measures which are assizable**

**PART I**

*WEIGHTS*

1.	20 kilograms	5 grams
	10 kilograms	2 grams
	5 kilograms	1 gram
	2 kilograms	0.5 grams
	1 kilogram	0.2 grams
	500 grams	0.1 grams
	200 grams	0.05 grams
	100 grams	0.02 grams
	50 grams	0.01 grams
	20 grams	0.005 grams
	10 grams	0.002 grams
		0.001 (1mg)
2.	500 metric carats	0.5 metric carats
	200 metric carats	0.25 metric carats
	100 metric carats	0.2 metric carats
	50 metric carats	0.1 metric carats
	20 metric carats	0.05 metric carats
	10 metric carats	0.02 metric carats
	5 metric carats	0.02 metric carats
	2 metric carats	0.01 metric carats
	1 metric carat	0.005 metric carats

**PART II**

*MEASURES*

1.	<i>Graduated Glass Measures</i>	
	2 litres	25 millilitres
	1 litre	20 millilitres
	500 millilitres	10 millilitres
	250 millilitres	5 millilitres
	200 millilitres	2 millilitres
	100 millilitres	1 millilitre
	50 millilitres	

2. *Liquid Measures of Capacity other than graduated glass measures*

20 litres	100 millilitres
10 litres	50 millilitres
5 litres	20 millilitres
2 litres	10 millilitres
1 litre	5 millilitres
0,5 litre or 500 ml	2 millilitres
0,2 litre or 200ml	1 millilitre

3. *Measures of Cubic Capacity or Volume*

- 1 Cubic metre or multiples of 1 cubic metre
- 500 cubic decimetres or multiples of
- 200 cubic decimetres or multiples of
- 100 cubic decimetres or multiples of
- 50 cubic decimetres or multiples of
- 20 cubic decimetres or multiples of
- 10 cubic decimetres or multiples of

4. *Measures of Area*

- 1 square metre or multiples of 1 square metre
- 1 square decimetre or multiples of 1 square decimetre
- 1 square centimetre or multiples of 1 square centimetre

5. *Measures of Length*

- 1 metre and an integral number of metres not exceeding 100 metres
- 1 decimetre and an integral number of decimetres not exceeding one metre
- 1 centimetre and an integral number of centimetres not exceeding one metre
- 1 millimetre and an integral number of millimetres not exceeding one metre

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Dated the 3rd day of February, 1972

S.T. KETLOGETSWE,  
*Permanent Secretary,*  
*Ministry of Commerce, Industry and Water Affairs.*

L2/7/190