CHAPTER 340

THE WEIGHTS AND MEASURES ACT

[SUBSIDIARY LEGISLATION]

REGULATIONS

THE WEIGHTS AND MEASURES REGULATIONS

(Section 54)

G.Ns. Nos.

339 of 1960

363 of 1960

394 of 1963

329 of 1966

112 of 1979

147 of 1981

188 of 1993

614 of 1995

128 of 1996

536 of 1998

537 of 1998

PRELIMINARY PROVISIONS (regs 1-2)

1. Short title

These Regulations may be cited as the Weights and Measures Regulations.

2. Interpretation G.N. No. 537 of 1998

In these Regulations, unless the context otherwise requires–

"Act" means the Weights and Measures Act;

"calibration" means the set of operations to determine the capacity of a tank, up to one or several filling levels, whether marked or not;

"calibration table (calibration chart)" means the expression, in the form of a table, of the mathematical function V(h) which represents the relation between the height "h" (independent variable) and volume "V" (dependent variable);

"capacity" in reference to a weighing instrument means the maximum load it is constructed to weigh, as marked or indicated on the instrument in accordance with the Act or these Regulations;

"error" in reference to an instrument includes deficiency in sensitiveness;

"expansion volume" means the difference between total contents and nominal capacity;

"instrument" means any weighing or measuring instrument;

"just" in reference to a weight, measure or instrument means that it has not a greater error than the limit of error specified in the Tables annexed hereto;

"nominal capacity" means the volume of liquid which a tank contains under rated operations, at reference temperature;

"rail or road tank" means a container, which may or may not be subdivided into two or more compartments, mounted on a wagon or motor truck, and used for the sale or delivery, by measures of capacity, of paraffin, fuel, oil, petrol, or petrol substitutes. When a rail or road tank is subdivided the term "compartment" means any one of the subdivided portions of the rank;

"reference height (H)" means the distance, measured along the vertical measurement axis, between the reference point and the foot of the vertical measurement axis, on the inner surface of the tank, or on the dip plate;

"reference point (P)" means the distance, measured along the vertical measurement axis, between the reference point and the foot of the vertical measurement axis, on the inner surface of the tank, or on the dip plate;

"rejected" in reference to a weight, measure or instrument means any weight, measure or instrument examined by an inspector and found not to comply with the requirements of the Act or any regulations made thereunder;

"repaired" in reference to a weight, measure or instrument means any weight, measure or instrument which since it was last stamped has had some adjustment, other than balancing in the case of a weighing instrument, made to any of its vital parts;

"sensitivity of a tank in the vicinity of a filling level h" means the change in the level, Ah, divided by the corresponding relative change in volume, Ah/ for the contained volume corresponding to the level;

"stamping station" means any place appointed by an inspector pursuant to section 28(1) of the Act;

"total contents" means the maximum volume of liquid which a tank may contain up to overflowing, underrated operating conditions, at reference temperature;

"ullage height (C)" means the distance between the free surface of the liquid and the reference point, measured along the vertical measurement axis;

"vertical measurement axis" means the vertical line on which the levels of liquid are gauged.

CARE AND CUSTODY OF STANDARDS (regs 3-4)

3. Verification of secondary standards

(1) The accuracy of the secondary standards shall be verified at least once in every two years by comparison with the National standards. An inspector shall verify the accuracy of such comparison in the presence of the wardens of the National standards who shall then authenticate the secondary standards by the issue to the inspector of a certificate in Form A set out in the First Schedule hereto.

Verification of working standards

(2) The accuracy of the working standards shall be verified at least once in every twelve months by an inspector by comparison with the secondary standards. The inspector shall authenticate them by the issue of a certificate in Form B set out in the First Schedule hereto.

4. Examination of National standards

The Principal Secretary shall, at least once in each quarter, instruct an inspector to make a careful examination of all the National standards and instruments with a view to seeing that they are complete, clean and in a good condition, and the inspector shall on each occasion enter a note thereof in a "Record of Standards" book, in Form C set out in the First Schedule hereto and that such examination and record shall be made in the presence of the wardens of the standards.

VERIFICATION (regs 5-16)

5. Design of stamp of verification G.N. No. 339 of 1963

The inspector shall stamp all just weights, measures and instruments with the stamp of verification of the following uniform design with the addition of a number or mark distinguishing the inspector by whom it is used–

6. Date marks

The following letters shall indicate the months opposite them and, whenever possible, the appropriate letters shall be stamped in addition to the stamp of verification to indicate the month in which the verification mark is placed on the weight, measure or instrument by an inspector–

A January	D April	G July	J October
B February	E May	H August	K November
C March	F June	I September	L December

Whenever possible, the year of stamping shall also be indicated by stamping the last two figures of the year, thus the year 1960 shall be shown as "60".

7. Obliterating stamps

(1) The stamp of verification on a weight, measure or instrument shall be obliterated only by means of a stamp of the following six-pointed star design–

and any weight, measure or instrument bearing such obliteration shall, for all the purposes of the Act and any regulations made thereunder, be deemed to be unstamped.

(2) Where any instrument is required to be stamped or sealed on more than one place, the obliteration of any one stamp of the breaking of any one seal or sealing device shall render the instrument unstamped.

8. Examination on dealers' premises

Weights, measures and instruments may be examined on the premises of a repairer or dealer therein:

Provided that the travelling expenses of the inspector and the cost of transport of standards and equipment be paid by the repairer or dealer in addition to the prescribed verification fee.

9. Duties of persons submitting

The inspector may require any person submitting any weight, measure or instrument for examination–

(a) to take it apart to such an extent as to enable him to examine the working parts; and

(b) to provide sufficient labour for the proper and expeditious handling of the standards or any material which is to be used in the testing of any such weight, measure or instrument.

10. Weights, etc., to be clean when presented

All weight, measures or instruments shall be tested in a clean condition and, if necessary, the inspector may call upon the owner or user to clean them, and failing compliance he may make a charge for such cleaning of a sum equal to the charge for stamping any weight or measure of a similar denomination.

11. Testing procedure

Before stamping any weight, measure or instrument the inspector shall ascertain that it complies with the requirements of the Act and these Regulations.

12. Authority to re-seal after repair, etc.

An inspect may authorise any fit and proper person employed bona fide in the erection, repair and adjustment of instruments defined as liquid measuring pumps in regulation 146 hereof to break any seal or sealing device on any such instrument which he intends to erect, repair or adjust and to seal or re-seal the same subject to the following conditions–

(a) an inspector may withdraw any such authorisation at any time;

(b) the person authorised shall be provided with stamped testing measures of a pattern approved by the inspector and shall test each instrument for accuracy before sealing or re-sealing;

(c) the person authorised shall seal or re-seal an instrument only by means of stamping pliers so constructed as to impress upon every seal or sealing device such mark and number as the inspector may allot to him for the purpose of identification;

(d) the person authorised shall forward at once to the inspector a notice in writing in Form D set out in the First Schedule hereto reporting every such sealing or re-sealing;

(e) within twenty four hours of such sealing or re-sealing the owner or user of the instrument shall send to an inspector a request in writing to verify the instrument.

13. Use of liquid fuel, etc.

An inspector may at any time withdraw any liquid fuel or lubricating oil from a measuring instrument for the purpose of testing such instrument. Any liquid fuel or lubricating oil so withdrawn shall be returned forthwith to the tank or container and the inspector shall, if requested by the person in charge of the instrument, furnish to such a Weights and Measures person a written statement of the quantity so withdrawn.

14. Weights, etc., not admitted

An inspector shall not admit for verification any weight, measure, weighing instrument, measuring instrument or price computing instrument which–

(a) is not complete in itself; or

(b) bears any mark which might be mistaken for a stamp of verification; or

(c) is not sufficiently strong to withstand the ordinary wear and tear of use in trade; or

(d) has removable parts, the removal of which would affect its accuracy unless the parts are such that the weight, measure or instrument cannot be used without them; or

(e) has reversible or interchangeable parts, the reversal or interchange of which would affect its accuracy unless such parts are clearly and indelibly marked to indicate their position; or

(f) is not properly constructed, or when, in his opinion, it appears to be of a pattern which might facilitate the perpetration of fraud.

15. Abbreviations

The denomination of a weight or measure, or the capacity of an instrument, if not marked in full, shall be indicated only by one of the abbreviations specified in the Second Schedule hereto.

16. Form prescribed for purposes of section 32 of R.L. Cap. 426 G.N. No. 285 of 1967

In exercise of the powers vested in him by the proviso to section 32 of the Act, the Chief Inspector shall use Form E in the First Schedule.

WEIGHTS (regs 17-23)

17. Material

Examination. – All weights shall be made of some metal other than lead, except where lead is inserted for the purpose of adjustment. Weights made of soft metals and soft alloys, e.g. tin or solder, shall not be permitted. Avoirdupois weights shall not be made of aluminium or other metals or alloys of low density. Cased weights and weights composed of two or more different unalloyed metals shall not be permitted.

18. Denomination

If the maker's name appears on the weight it shall be in letters not exceeding half the size of the letters indicating the denomination.

Weights other than apothecaries weights shall not be marked with more than one denomination.

19. Flaws

All weights shall be free from flaws and cavities and shall be quite smooth on all surfaces.

20. Mode of adjusting

Avoirdupois weights of one ounce and over shall be provided with one adjusting hole only, which shall be on the under surface of the weight and shall not extend to the upper surface. The hole shall be undercut and plugged with lead which shall cover the bottom of the hole and be of sufficient thickness to ensure that it will remain securely in position. The approximate minimum distance of lead from the surface when new shall be one-fifth of the centre thickness of the weight.

21. Shape

Avoirdupois weights of iron shall be either flat-circular, bar, bell or ring weights, but 50 lb., 20 lb., 10 lb., and 5 lb. weights shall be of octagonal form.

Iron weights of flat shape shall only be made from 4 lb. to 4 oz. inclusive. No iron weight under 4 oz. shall be stamped.

Avoirdupois weights, other than iron weights, shall be flat-circular, bar or bell shaped, but 50 lb., 20 lb., 10 lb., and 5 lb. weights shall be of octagonal form. Flat weights shall only be stamped from 4 lb. to 1/2 dram inclusive.

22. Permissible errors

The errors permissible on the verification of weights shall be as specified in Tables I and II contained in the Third Schedule to these Regulations.

23. Mode of stamping

Stamping. – Weights provided with an adjusting hole shall be stamped on the lead in the adjusting hole. Weights not provided with an adjusting hole shall be stamped on the under surface.

MEASURES OF LENGTH (regs 24-27)

24. Material and construction

Examination. – Measures of length shall be made of steel, brass, ivory, hard wood, woven tape or other material that may be approved by an inspector. They shall be examined with the object of discovering any want of straightness and strength; and they shall be denominated and graduated clearly and indelibly. Wooden measures of two feet or more in length shall have both ends capped with metal and the caps shall be riveted. In measures such as those used for measuring bales, timber, etc., any sliding or caliper arms shall have no more play than is necessary for easy movement.

A subdivided measure of length shall have its numbered divisions and also their subdivisions of longer lines than the minor graduations.

25. Tension for linked and tape measures

Verification. – Linked riband and tape measures shall be tested when subjected to a tension or pull as follows–

Ordinary riband or tape measures 2 lb.

Metal riband or tape measures 10 lb.

Linked measures 15 lb.

The measure under test shall be supported throughout its whole length on a plane and even surface.

26. Permissible errors

The errors permissible on the verification of measures of length shall be as specified in Table IV contained in the Third Schedule to these Regulations.

27. Position of stamping

Stamping. – Measures of length shall be stamped near the beginning of the scale on each graduated side. In the case of linked measures the stamp may be placed on a metal label or disc permanently attached to the measure, or on the brass handle.

MEASURES OF CAPACITY (regs 28-42)

28. Material and construction

Examination. – Measures of capacity shall be made of glass, earthenware, tin, tin alloys, pewter, brass, bronze, copper, tinplate, white metal, aluminium, nickel, nickelled or nickel-plated steel or sheet iron, enamelled metal or other material approved by an inspector.

Measures of brass, bronze or copper shall be well tinned all over the inside.

The coating of nickel on nickelled measures shall be uniform and show no sign of peeling.

Where there are strengthening ribs or bands they shall not take such a form as to show, by indentation or otherwise, divisions inside the measure, which might be mistaken for graduations.

29. Lips or retaining edges

In measures fitted with a lip or retaining edge the capacity defining line shall be sharp and regular. The lip or retaining edge of a measure shall not increase the capacity by more than ten percent of the marked capacity of the measure.

False bottom prohibited

A measure which is not completely emptied when tilted to an angle of 120 degrees from the vertical shall not be stamped.

30. Publican's measure

A publican's metal, glass or earthenware measure shall be provided with a spout or projecting mouth and may also have a bottom rim. In measures of a pint and under, such rim shall not project more than half an inch below the bottom of the measure.

31. Dipping measures

A metal dipping measure of a capacity not exceeding half a gallon, used for the sale of milk, shall be of circular or elliptical section with vertical sides. The height shall not differ by more than ten percent from one-and-a-half times the mean diameter of the section.

32. Taps

A measure fitted with a tap shall not be permitted unless the measure can be completely emptied through the tap without tilting.

33. Glass measures

A glass measure shall not be permitted unless the capacity is defined either–

(a) by the brim of the measure; or

(b) by a line at least two inches in length, distant not less than half an inch nor more than one-and-a-half inches from the brim.

For subdivided glass measures of a gallon and under, other than apothecaries measures, the subdivisions shall be defined by lines at least one inch in length.

34. Earthenware

An earthenware measure shall not be measures permitted unless the capacity is defined by the brim, or by an indelible line marked on the inside of the measure, so that the distance of the bottom of the line from the brim does not Weights and Measures exceed three-eighths of an inch on measures of a quart and under and three-quarters of an inch on measures of higher capacities.

35. Temperature compensators

Where a measure of capacity is provided with a temperature compensator, a graduated scale shall be fitted indicating "plus" and "minus" either side of zero. A suitable thermometer and hydrometer shall be always available to enable the operator to adjust the compensator when necessary.

36. Subdivided metal measures

The subdivisions of metal measures of a capacity not exceeding a gallon is not permitted. In a subdivided metal milk measure of a capacity exceeding half a gallon there shall be two graduated metal

strips or series of tablets fixed opposite each other inside, extending the whole depth of the measure and securely soldered on the measure. The graduations shall be marked in sharply incised lines.

37. Denomination

Every measure of capacity shall have its denomination clearly, permanently and indelibly marked on the outside of the body thereof and not upon the handle, bottom, rim or edges. On a glass measure in which the capacity is defined by a line, the denomination shall be marked at the line. On an enamelled metal measure the denomination shall be marked Weights and Measures in a distinctly different colour from that of the body of the measure. On all subdivided measures the denominations shall be marked on the graduated strips or on the tablets as well as on the outside.

38. Apothecaries measures

Apothecaries measures may be of cylindrical or conical form.

A glass measure in which the subdivisions are less than one-twelfth of an inch apart shall not be permitted.

A measure also marked with equivalents in weight may be permitted provided that the words "of water" are marked on the outside in addition to the denomination.

39. Method of testing

Verification. – Every measure shall be tested by filling the standard with water and emptying the contents into the measure submitted for verification.

Where the capacity is indicated by a line, the measure shall be tested to the bottom of the line.

A measure provided with a lip or retaining edge shall be tested to the bottom of the lip or retaining edge.

40. Meniscus

In testing a glass measure, the capacity of which is not defined by the brim, the level of water shall be taken at the bottom of the meniscus.

41. Permissible errors

The errors permissible on the verification of measures of capacity and apothecaries measures shall be as specified in Tables IV and V, contained in the Third Schedule to these Regulations.

42. Method of stamping

Stamping. – The stamp of verification shall, in the case of glass, earthenware and enamelled metal measures, be etched or sand blasted beneath or near the denomination. In metal measures, other than lip or rimmed measures, it shall be placed near the denomination. In metal measures provided with

a lip or retaining edge it shall be placed on the bottom of the inside of the lip or retaining edge. Graduated metal measures shall be stamped on a solder stud affixed to the inside strip or tablet near to the top graduation and on the outside of the measure near the denomination.

On sheet metal measures a solder stud shall be provided to receive the stamp of verification.

WEIGHING INSTRUMENTS (regs 43-57)

43. Instruments not permitted

No weighing instrument shall be permitted which has–

(a) a broken scoop, pan or plate; or

(b) a china plate which is chipped, cracked or porous to such an extent that it has become readily absorbent; or

(c) counterpoise weights representing a greater or less weight than the marked capacity of the instrument.

44. Prohibition of certain types

The following shall not be permitted for verification–

(a) weighing instruments known as "union scales";

(b) weighing instruments known as "decimal scales" or "bascules"; and

(c) micrometer scales, unless of a pattern approved by the Board of Trade under section 6 of the Imperial Weights and Measures Act, 1904.

45. Marking of weighing capacity

The weighing capacity of a weighing instrument shall be prominently and indelibly marked on the instrument. In dial machines fitted with a supplementary weigh bar, the full capacity shall be marked on some prominent part of the machine.

46. Material

All beams, steelyards, levers, rods, links, legs and stays shall be constructed entirely of metal.

47. Knife edges and bearings

Knife edges and bearings shall be of hard steel or a gate or other material approved by the Chief Inspector of Weights and Measures and shall be so fitted as to allow the beam or steelyard to move easily. All knife edges shall bear practically upon the whole length of their working parts and shall be so fitted that they cannot twist or otherwise get out of alignment. If a smooth file, when passed over a knife edge or bearing surface, fails to scratch it the knife edge or bearing shall be deemed to be hard.

48. Graduations

The graduations on all steelyards shall consist of notches or sharply incised lines so defined that the position of all sliding poises shall be clearly indicated. The indications on the dials of platform machines or weighbridges may be indelibly marked thereon by fine lines.

49. Plug for verification stamp

In every weighing instrument a lead plug for receiving the stamp of verification shall be inserted in an easily accessible part of the instrument. The hole shall be undercut and the face of the plug flush with the metal part in which it is inserted.

50. Loose counterpoise and travelling poise

No weighing instrument having loose counterpoise weights shall be permitted unless such counterpoise weights have one undercut adjusting hole only, containing sufficient lead to cover the bottom of the hole. Loose material shall not be permitted in or on a travelling poise.

51. Special trades

Weighing instruments used for weighing the following articles shall be beam scales of either Class A or Class B as defined in regulation 59 hereof–

(a) precious metals;

(b) precious stones;

(c) chemicals;

(d) drugs.

52. Position when testing

Movable instruments provided with a base shall be tested on a level plane. Instruments which are suspended in use shall be suspended when tested.

53. Test at maximum load and tests for sensitiveness

A weighing instrument shall be tested as far as practicable with its maximum load. A weighing instrument of the vibrating type shall be tested for sensitiveness by loading it with its maximum load with the beam or steelyard in a horizontal position and ascertaining that it turns with the addition of the amount shown in the Tables contained in the Third Schedule hereto for sensitiveness.

For beam scales the addition of this amount on either side shall cause an appreciable movement of the beam. For other vibrating instruments the addition of this amount shall cause the beam or steelyard to rise or fall to the limit of its range of movement.

54. Tests for error

A weighing instrument of the vibrating type shall be tested for error by ascertaining the weight in excess or deficiency (if any) required to bring the beam or steelyard of the instrument to a horizontal position when fully loaded.

A weighing instrument of the accelerating type shall be tested for error by ascertaining the weight required when the instrument is fully loaded just to keep the beam or steelyard in a horizontal position on its stop or carrier and no more.

55. Acceleration

A weighing instrument of the accelerating type shall be tested for acceleration by ascertaining the weight required to bring back the beam or steelyard from its position of greatest displacement to the horizontal position, the instrument being fully loaded and truly balanced. The amount of acceleration permissible in an accelerating instrument shall not exceed twice the allowance for error in the same instrument.

56. Allowances

For weighing capacities not included in the relevant Tables contained in the Third Schedule hereto the allowances for sensitiveness and error shall be proportional.

57. Balance

The inspector shall ascertain that the instrument is properly balanced when not loaded, that the beam or steelyard has sufficient room for oscillation and that it returns to the position of equilibrium or that the indicator returns to the zero mark when a load is removed.

BEAM SCALES (regs 58-65)

58. Definition

The term "beam scale" means any equal-armed weighing instrument the pans of which are below the beam.

59. Classification

Beam scales shall be divided into three classes:

(a) Class A includes only chemical and assay balances and other beam scales provided with means for relieving all the bearings and knife-edges. Class A instruments must satisfy the requirements of Table VI contained in the Third Schedule hereto and need not be marked with a class mark;

(b) Class B includes only beam scales (other than Class A instruments) which satisfy the requirements of Table VII contained in the Third Schedule hereto;

(c) Class C includes all beam scales (other than instruments in Class A or Class B) which satisfy the requirements of Table VIII contained in the Third Schedule hereto.

Every beam scale falling within either Class B or C shall be indelibly marked with the appropriate class mark.

60. Prohibition of certain types

Examination. – The following shall not be admitted for verification–

(a) accelerating beam scales;

(b) new swan neck beam scales of a capacity of less than 30 lb. or the beam of which is less than twenty-four inches in length between the terminal knife edges;

(c) swan neck beam scales not fitted with flat end bearing and swivel hooks;

(d) beam scales with loaded weight pans;

(e) beam scales of a capacity of less than 200 lb. with wooden scale boards.

61. Balancing

Any attachment for adjusting the balance of a beam scale shall be permanently fastened and, where a balance ball or box is fitted for occasional adjustment, it shall be so fixed that it cannot readily be tampered with. Beam scales with wooden scale boards shall be provided with a balance ball or box.

62. Half-load test

Verification. – No instrument shall be verified if, with the pans loaded to half capacity, any appreciable difference in its accuracy results from moving the knife-edges or bearings laterally or backwards or forwards within their limits of movement.

63. Position of loading

No instrument shall be verified if it is not just irrespective of the position of the load on the pan.

64. Permissible errors

The errors permissible on the verification of beam scales shall be as specified in Tables VI, VII and VIII contained in the Third Schedule hereto.

65. Position of stamping

Stamping. – On beam scales the stamping plug shall be inserted immediately above or below the central knife-edge.

Class A beam scales may be stamped on the pans in cases where the delicate construction of the beam might be affected by the insertion of a plug.

COUNTER MACHINES (regs 66-75)

66. Definition

The term "counter machine" means any equal-armed weighing instrument of a capacity not exceeding 100 lb., the pans of which are above the beam.

67. Prohibition of certain types

Examination. – The following shall not be admitted for verification–

(a) accelerating counter machines;

(b) counter steelyards;

(c) counter machines in which the working parts below the beams are not suitably enclosed;

(d) counter machines of the "Roberval" type in which the stays forming the lower side of the parallelogram are not in one piece;

(e) counter machines not fitted with a balance box or other receptacle for balancing material;

(f) counter machines having a sliding or tare weight.

68. Construction

When the beam or body has two sides, they shall be connected together by not less than two cross bars; and the supports for the pans shall be of suitable rigid structure, such as crosses strengthened by straps. Centre forks shall be so fixed that they cannot twist or get out of place.

The bearing surface and points of contact of all stays, loops and hooks shall be of hard steel or agate.

69. Balancing

The balance box or other receptacle for balancing material shall be securely fixed beneath one of the pans and shall only be large enough to contain loose material to an amount not exceeding one percent of the marked capacity of the machine. No other balancing contrivances shall be permissible.

70. Fall on machines

The minimum "fall" either way on counter machines shall be as follows–

Capacity	Inch
Not exceeding 5 lb.	1/4

Above 5 lb. and not exceeding 10 lb. 5/16

Above 10 lb. and not exceeding 25 lb. 3/8

Above 25 lb. and not exceeding 50 lb. 7/16

Above 50 lb. 1/2

71. Half-load test

Verification.-No instrument shall be verified if, with the pans loaded to half capacity, any appreciable difference in its accuracy results from moving the knife-edges or bearings laterally or backwards or forwards within their limits of movement.

72. Position of weights during test

When the goods pan is not in the form of a scoop half the allowance for error shall not be exceeded if the centre of a load equal to half the capacity is 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. In this test the weight shall be entirely on the weights pan but in any position on it.

73. Counter machines with scoops

When the goods pan is in the form of a scoop the prescribed limits of error shall not be exceeded if half the full load is placed against the middle of the back of the scoop and the other half in any position on the scoop.

74. Permissible errors

The errors permissible on the verification of counter machines shall be as specified in Table IX contained in the Third Schedule hereto.

75. Stamping

On counter machines the stamping plug shall be inserted in an easily accessible part of the beam or body of the machine.

SPRING BALANCES (regs 76-85)

76. Suspension

A spring balance of a capacity of 30 lb. and under with the goods pan below the spring shall be permanently suspended from a stand, support or bracket.

77. Dimensions of indicator

The extremity of the index finger shall not exceed one thirty-second of an inch in width and shall not be more than one-tenth of an inch from the scale or dial.

78. Dimensions of graduations

The scale shall be graduated into approximately equal parts and the minimum width apart of the graduations shall not be less than one-sixteenth of an inch for a capacity of 30 lb. and under and not less than one-eighth of an inch for a capacity of 40 lb. and over.

79. Range of adjustable indicator

When the indicator is adjustable the range of adjustment shall not exceed one percent of the capacity of the instrument.

80. Interval between graduations G.N. No. 329 of 1966

(1) The weights corresponding to the interval between consecutive graduation marks shall be as follows–

Capacity	The weight must not exceed
1 lb.	2 drams
2 lb. to 7 lb.	4 drams
10 lb. to 15 lb.	8 drams
20 lb. to 30 lb.	1 oz.
40 lb. to 60 lb.	2 oz.
100 lb. and over	1/200th of capacity

Capacities between 1 lb. and 100 lb. other than those in the above table are not permitted.

When the graduation commences at a fixed load the position of the indicator, when there is no load, shall be indicated by a zero mark.

(2) Notwithstanding the provisions of paragraph (1) of this regulation a spring balance of 50 lb., capacity which is marked clearly and permanently with the words 'for tea estate use only' shall be deemed to comply with this regulation if the interval between successive graduations does not exceed 1/200th of the capacity.

81. Position of the load during test

Verification. – When the pan is below the spring, the prescribed limits of error shall not be exceeded wherever the load is placed upon it. When the pan is above the spring the regulation regarding the position of the load on the pans of counter machines shall apply.

82. Testing of graduations

Each numbered graduation shall be tested; intermediate graduations may be tested if necessary.

No instrument shall be deemed to be just unless it satisfies a forward and backward test, provided that in each case the spring shall be allowed to vibrate before the reading is taken.

83. Fatigue test

The inspector may test the balance for efficiency or ability to recover by leading on the pan a load equal to its maximum capacity for a period not exceeding twenty-four hours, and then, after the expiration of four hours, testing for accuracy.

84. Permissible errors

Spring balances of a capacity of 30 lb. and under shall satisfy the requirements as regards error of counter machines of similar capacity. For spring balances of a capacity of 40 lb. and over, the error shall not exceed the weight corresponding to a quarter of the interval between consecutive graduations.

Spring balances shall not be tested for sensitivity.

85. Position of stamping

On spring balances, the stamping plug shall wherever possible, pass through the dial and the frame. The plug shall be so supported as to avoid risk of injury during stamping.

STEELYARDS (regs 86-91)

86. Prohibition of certain types

The following shall not be admitted for verification unless of a pattern approved, by the Chief Inspector of Weights and Measures–

(a) any steelyard which is reversible and has three hooks;

(b) any accelerating steelyard;

(c) any counter steelyard;

(d) any steelyard not having a zero graduation;

(e) any steelyard of capacity of less than 60 lb.

87. Construction

Examination. – Steelyards shall be made of wrought iron or steel and the shank shall be perfectly straight.

Each set of notches of graduations on the shank shall be cut in one plane and be at right angles to the shank.

All steelyards shall be provided with a stop or other suitable arrangement to prevent excessive oscillation of the shank.

Sliding poises and suspending hooks shall be securely attached to the instrument.

All end fittings shall be securely fixed to the shank.

The sliding poise shall be freely movable without risk of injury to the notches from constant use, and there shall be a stop to prevent it travelling behind the zero mark or lowest graduation.

88. Balancing

Where a balancing arrangement is fitted it shall comply with the requirements for platform machines.

89. Method of testing

Verification. – Each numbered graduation shall be tested and intermediate graduations may be tested if necessary. The instrument shall be tested backwards and forwards.

90. Permissible errors

The errors permissible on the verification of steelyards shall be twice those prescribed for counter machines or platform machine of a similar capacity.

91. Position of stamping plug

On steelyards the stamping plug shall be inserted in the face of the shoulder of the steelyard.

DEAD-WEIGHT MACHINES (regs 92-97)

92. Definition

The term "dead-weight machine" means any weighing instrument similar in principle of construction to a counter machine but of a capacity of more than 100 lb.

93. Construction

Examination. – The bearing surfaces and points of contact of all hooks, stays and loops, shall be of hard steel and the centres shall have rectangular shoulders fitted and firmly secured into rectangular holes.

The bearing surface of the adjustable slides shall be of hard steel and the stems holding them in position shall be secured by lock nuts.

The goods platform shall not exceed in length the length of the beam and in width double the width of the beam. Folding wings shall not increase such dimensions more than one-third in either direction.

Platforms shall be of metal or hard wood.

Fall. –The minimum fall in dead-weight machines shall be five-eighths of an inch both ways for vibrating machines and seven-eighths of an inch one way for accelerating machines.

94. Balancing

Loose balancing material shall be contained in a balance box permanently fixed beneath one platform and its weight shall not exceed one percent of the capacity of the machine. Any other balancing material shall be in one piece and shall be securely attached to the machine.

95. Method of testing

Verification. – Half the allowance for error shall not be exceeded if a load of one-quarter the capacity is placed successively at the middle of the front and back of each platform and centrally over the knife edges on each side.

96. Permissible errors

The errors permissible in the verification of dead-weight machines shall be the same as for platform machines of similar capacity. In carrying out the tests for sensitiveness and error the load shall be distributed over the platforms.

97. Position of stamping plug

Stamping. – On dead-weight machines the stamping plug shall be inserted in a conspicuous and easily accessible part of the beam of the machine.

PLATFORM MACHINES AND WEIGHBRIDGES (regs 98-110)

98. Test in situ

Examination. – Weighbridges and dormant platform machines shall be verified and stamped in situ in addition to any preliminary test on the maker's premises.

99. Foundations

Weighbridges and dormant platform machines shall only be permitted if the foundation or supporting base is sufficiently firm to be capable of carrying the maximum load without change of form or level.

100. Construction

The steelyard of a machine shall be in a perfectly straight plane on its upper surface or edge and shall not involve any readily removable parts except the support for the counterpoises. There shall be a stop or stops to prevent the sliding poise or poises from travelling behind the zero graduation.

The steelyard or registering mechanism may be confined in a locked box or case, provided that the indications or graduations are visible.

101. Travel

The minimum travel of the steelyard in platform machines shall be three-eighths of an inch both ways for vibrating machines, and five-eighths of an inch one way for accelerating machines. The minimum travel of the steelyard in weighbridges shall be half an inch both ways for vibrating machines, and three-quarters of an inch one way for accelerating machines.

102. Counterpoises

Where a counterpoise is used in connection with a loose receptacle or frame it shall be of a shape distinct from all the other counterpoises. All loose counterpoises shall be identified with the machine by a number or other indelible mark. They shall be marked with their equivalent weight in the following manner, e.g.:

= 100 lb.

A loose counterpoise marked in Imperial denomination shall not be of hexagonal shape.

103. Balancing

All weighbridges and platform machines shall be fitted with a balancing arrangement which shall be capable of being operated only by means of a detachable key. The range of balance shall not exceed one-half percent of the capacity of the machine, and shall not be less than one-eighth percent each way. For weighbridges the range may be doubled.

104. Gravity balls

Where a gravity ball is provided it shall be adjustable only by means of a mechanical appliance unless the ball is completely enclosed.

105. Self-indicating machines

The following provisions shall apply to weighbridges and platform machines fitted with dials–

(a) racks and pinions shall be of hard metal;

(b) the registration mechanism and cylinders or tanks containing liquid (if any) shall be adequately protected from dust and excessive variations of temperature;

(c) Graduation marks. – the graduation marks shall be clear and distinct and shall not–

(i) exceed one-thirty-second of an inch in width on platform machines;

(ii) exceed one-sixteenth of an inch in width on weighbridges;

(iii) be less than one-eighth of an inch apart, measured from centre to centre; and denominated subdivisions shall be of longer lines than minor graduations;

(d) the extremity of the indicator shall in no position be at the greater distance from the graduated surface of the dial than three-sixteenths of an inch; and shall be made to meet, but not obscure, the graduation marks.

106. Mode of testing

Verification. – Each numbered graduation shall be tested and minor graduations may be tested if necessary. Loose counterpoises shall be tested. The machine shall be tested to its maximum capacity or as near thereto as circumstances permit. When sufficient standard weights are not available to test a machine to its capacity, it may, where practicable, be loaded with suitable heavy material to within such amount of its maximum capacity as is equal to the total of standard weights available. No machine which does not then indicate correctly the addition of any standard weight shall be deemed to be just.

107. Test at quarter load

Half the allowance for error shall not be exceeded if a load equal to one-quarter the maximum capacity, or as near thereto as practicable, is placed successively at the middle, near the ends and at the corners of the platform.

108. Relieving gear

When a platform machine or weighbridge is fitted with a relieving gear the prescribed limits of error shall not be exceeded when the machine is put steadily out of and into gear. The plate or platform shall be entirely disengaged from its bearings when the machine is in relief.

109. Permissible errors

The errors permissible on the verification of weighbridges and platform machines shall be as specified in Table X contained in the Third Schedule hereto.

110. Position of stamping plug

Stamping. – On weighbridges and platform machines other than self-indicators, the stamping plug shall be inserted either in the shoulder or the nose end of the steelyard.

On self-indicating machines the stamping plug shall be inserted in the dial or beam.

Loose counterpoises shall be date-marked upon the lead in the adjusting hole after the completion of the test.

CRANE MACHINES (regs 111-115)

111. Construction

Examination. – Crane machines shall comply with the constructional requirements for platform machines as far as practicable. All working parts shall be suitably enclosed and protected from damp and dust.

112. Balancing

The range of balancing or adjusting arrangements shall not exceed two percent of the capacity of the machine.

113. Mode of testing

Verification. – Crane machines shall be tested to their full working capacity. Each numbered graduation shall be tested.

114. Permissible errors

The errors permissible on the verification of crane machines shall be for machines below one ton capacity the same as for vibrating platform machines, and for machines of one ton and upwards the same as for vibrating weighbridges.

115. Position of stamping plug

On crane machines the stamping plug shall be inserted in a conspicuous part of the steelyard or dial of the machine.

AUTOMATIC MACHINES (regs 116-121)

116. Definition

The term "automatic weighing machine" means a machine in which special self-acting machinery is introduced to effect an automatic feed, the rapid weighing of pre-determined quantities, the registration and summation of loads and other similar purposes or some of them.

117. Construction

Examination and Verification. – Automatic machines and their integral parts such as special beams, etc., shall, as far as practicable, satisfy the requirements of these Regulations, where such are applicable, as regards principle, detail or material of construction.

Beams need not be marked with any class, but shall be identified with the machine by a number or other sufficient mark of identification which shall be indelible.

The adjusting mechanism shall be suitably secured or protected so that it cannot readily be tampered with.

118. Mode of testing

The machine shall, where practicable, be tested directly by the application of standard weights, and the accuracy of the output or cut-off shall be verified by re-weighing on another verified and stamped weighing instrument as many continuous loads as the inspector may think necessary.

119. Totalizing machines

In testing "totalizing machines" thirty loads shall be passed over the machine, i.e. ten minimum loads, ten maximum loads, and ten loads of the mean between the minimum and maximum.

120. Permissible errors

The errors permissible on the verification of automatic machines shall be as specified in Table XI contained in the Third Schedule hereto.

121. Position of stamping plug

Stamping. – On automatic machines the stamping plug shall be inserted in the beam, shank or other conspicuous part of the machine.

SELF-INDICATING WEIGHING INSTRUMENTS (regs 122-128)

122. Definition

The term "self-indicating weighing instrument" means any weighing instrument on which part or the whole of the weight or the money value of the goods weighed is indicated by means of a moving finger or chart or other device approved from time to time by the Chief Inspector of Weights and Measures.

123. Graduations

Examination. – The graduation marks shall be clear and distinct. Denominated subdivisions shall be of longer lines than minor graduations.

On instruments for counter use and suspended weighers the graduations shall not exceed one-sixty-fourth of an inch in width.

The minimum distance between graduations measured from centre to centre shall be not less than one-sixteenth of an inch:

Provided that a lens or other approved device may be fitted to the instrument for the purpose of magnifying the distance apart of the graduation marks so as to bring them into conformity with this regulation.

The weight and price indicated shall be clearly legible, and in the case of partially enclosed charts, the aperture through which the indications are read shall be sufficiently large to permit the next lower graduation to be read.

124. Index band or finger index

Cylindrical self-indicating instruments shall be fitted with a steel band or double wires for indicating the price and weight. The indicating band or wire or the extremity of the indicating finger, where such is used, shall not exceed one-sixty-fourth of an inch in width, or be distant from the chart more than one-sixteenth of an inch so that no appreciable error may result from parallax.

125. Value of graduation

In self-indicating instruments of a capacity not exceeding 150 lb. the maximum value of the smallest subdivision on the chart shall not exceed the amount shown in the following table–

Capacity of Instrument	Maximum Value of smallest division
Under 2 lb.	4 drams
2 lb. and under 20 lb.	8 drams
20 lb. and not exceeding 30 lb.	1 oz.
Over 30 lb. and not exceeding	60 lb 2 oz.
Over 60 lb.	4 oz.

126. Mode of testing

Verification. – All numbered graduations shall be tested and intermediate graduations may be tested if necessary. On self-indicating instruments provided with indicators on both the seller's and purchaser's sides the readings on both charts shall coincide. The weight shall be correctly indicated whether the test is forward of backward.

127. Permissible errors

The errors permissible on verification of self-indicating instruments shall be as specified in Table XII contained in the Third Schedule hereto.

128. Position of stamping

Stamping. – On self-indicating instruments the stamping plug shall be in a conspicuous and essential part of the instrument, and shall be provided in addition to any seals which may be prescribed by the Chief Inspector of Weights and Measures.

VEHICLE TANKS (regs 129-144)

129. Definitions

A vehicle tank, hereinafter referred to as a "tank" shall, for the purpose of these Regulations mean a container, which may or may not be subdivided into two or more compartments, mounted on a wagon or motor truck, and used for the scale or delivery by measures of capacity, of paraffin, fuel oil, petrol, or petrol substitutes. When a tank is subdivided, the term "compartment" shall mean any one of the subdivided portions of the tank.

130. Construction and design G.N. No. 537 of 1998

A tank shall be constructed in accordance with these Regulations and shall be–

(a) of such shape, material, reinforcing elements and method of shaping chosen so that the tank is sufficiently unaffected by atmospheric agents and the liquids it contains and is practically not subject to distortion under rated operating conditions. It shall satisfy all other regulations concerning transport of dangerous liquids, safety at work, the construction of pressure vessels and protection of pressure vessels and protection against fire, quality of liquid transported and health;

(b) (i) the tank shall be pressure tested;

(ii) leak tested using water at atmospheric pressure; after filling the tank shall show no traces of leakage or dampness at the joints;

(c) either fitted with an approved device through or by means of which the liquid can be measured or calibrated in the manner prescribed by the Regulations;

(d) the reference height H of a tank or compartment shall not vary during filling by more than the following two values–

2 mm;

H/1000;

(e) the capacity of the compartment shall not change by more than 1/1000 of its measured volume when the neighbouring compartments are filled or emptied.

131. Quantity indicators, piping, gauges and valves

All quantity indicators, gauges, piping and valves shall be of such strength, design, construction and material that they may reasonably be expected to withstand ordinary usage without the accuracy of the instrument being impaired.

132. Complete delivery required G.N. No. 537 of 1998

(1) The delivery piping connected to a tank shall be of such design and construction that, when the vehicle on which it is mounted is standing on a level plane, complete delivery can be made from the tank or any compartment thereof. To ensure complete drainage the lower generatrix of the tank shall have a slope of at least 20 with the vehicle on level ground.

(2) Where a tank is fitted with an approved meter, the delivery piping and manifold outlet (where one is provided) shall in addition be of such design and construction as to preclude all possibility of liquid being trapped in any empty compartment whilst delivery is taking place from one which is full. The connection between the stop valves of the tank and these installations shall be by detachable couplings, which shall be as short as possible and easy to assemble and take apart, except those designed for a special purpose (for example, tanks used for aircraft refuelling).

(3) The dome (manhole) when fitted shall be as on the upper part of the body of the tank and welded thereon. If the side walls of the dome are mounted so that they penetrate the tank shell, the formation of air pockets on the upper part of the shell shall be avoided by providing orifices or cutouts at the level of the upper internal generatrix.

133. Ventilation and filler openings G.N. No. 537 of 1998

The requirements of a tank shall be as follows–

(a) tanks shall be suitable and effectively ventilated to prevent the formation of air pockets on filling or retention of liquid on emptying in all positions of use and, in the case of new tanks, the filler opening shall be of such size and construction as readily to permit of visual internal inspection;

(b) anti-wave devices and reinforcing elements that may be fitted in the tank shall be of a shape and shall be provided with orifices so that filling, draining and checking the emptiness of the tanks is not impended;

(c) the placing of deadwood inside the tank of compartment for the purpose of adjusting the capacity to a given value or any other body which, when changed or removed, could modify the capacity of the tank, is prohibited.

134. Number and capacity to be marked

Each compartment or tank which is constructed to deliver a fixed quantity of liquid shall be numbered and shall have its capacity clearly and indelibly marked on at least one side thereof, thus–

"Capacity ..... gallons to indicator".

Where a tank has more than one compartment, each such compartment, together with its outlet, valve, shall be correspondingly numbered.

135. Position of indicator

An indicator or other approved device shall be provided for each compartment and such indicator or device shall be centrally situated in respect to the longitudinal and diametrical axes in cylindrical tanks and the longitudinal and major axes in elliptical tanks.

136. Design and sealing of indicators G.N. No. 537 of 1998

Where a tank or compartment is constructed to deliver a fixed quantity only, the quantity-indicator shall function within a dome centrally situated on the top of such tank or compartment and shall be fixed rigidly so as to indicate at the centre of the dome.

The indicator shall clearly and distinctly define, by means of a plated or polished flat circular metal disc of at least 2.5 mm diameter, the height to which the tank or compartment must be filled in order to contain its marked capacity.

If the indicator is adjustable, it shall be so constructed that it can be sealed in such a manner as to prevent any change in its position without the seal being broken.

137. Gauges to be identified with compartments

Gauges or other approved devices for the measurement of liquid in a tank or compartment, which are graduated to indicate different quantities shall be identified with the tank or compartment to which they belong by means of a number clearly and indelibly marked thereon and corresponding to a number similarly marked on the tank or compartment.

138. Provision for expansion G.N. No. 537 of 1998

Indicators and gauges shall be so placed or graduated that, when the tank or compartment to which they belong is filled with the maximum quantity it is designed to contain, there shall remain not less than 2.5 percent of the capacity of the tank or compartment as alleged space for expansion of the liquid.

139. Definition of "initial" and "subsequent" verification G.N. No. 537 of 1998

"Initial verification" shall mean the first test, or any test for accuracy as provided in regulation 140 which is made after repair or alteration of a compartment or tank.

"Subsequent verification" shall mean the examination in accordance with the provisions of regulations 129 to 144 inclusive hereof, for the purpose of determining whether or not any material alteration has taken place in the size of a tank or compartment since its initial verification and the comparison of the graduations on graduated gauges with the corresponding chart held by the Assizer of Weights and Measures, including a test by means of standard measures of capacity up to any point that the inspector may consider necessary.

140. Method of testing G.N. No. 537 of 1998

The method of testing shall be as follows, namely–

(a) all tests for checking the accuracy of tanks or compartments shall be made by means of meter and against official standard measures of capacity, with the tank or compartment in a level position and stop valve closed and where a standard measure which requires a fixed position is used, it shall be so placed that the water has a free run into the tank or compartment and there shall be no leakage at the hose leading from the measure;

(b) the shape of the tank shall be such that in a zone where the level of the contained liquid is gauged, a sensitivity of at least 2mm for 1/1000 of contained volume is attained.

141. Charts of gauges G.N. No. 537 of 1998

Where graduated gauges are used for indicating the liquid contents of compartments, the Assizer of Weights and Measures shall make and retain for future reference an accurate chart of the quantity marks on each such gauge.

Each such chart shall be numbered to identify it with a similar number marked on the gauge.

142. Emergency valves

Where emergency valves are provided for closing the discharge outlets from tanks or compartments, the calibration shall be made with such emergency valves open.

143. Errors permitted G.N. No. 537 of 1998

The errors permitted in excess or deficiency on tanks or compartments shall be as follows–

(a) error of calibration shall be ± 0.2% of the nominal volume;

(b) error in service shall be ± 0.5% of measured volume (including the error of calibration, determination of liquid level, density etc).

144. Construction licensing G.N. No. 537 of 1998

(1) Any person who intends to carry on the business of constructing rail or vehicle tanks shall first apply to the Commissioner for a licence specified in Table II of the Third Schedule.

(2) An application for a licence under this regulations shall be in writing and shall specify–

(a) the name of the applicant and his proposed principal place of business address;

(b) the qualification or experience of the applicant:

Provided that the Commissioner may require the applicant to furnish him with such other particulars as he may deem necessary for the proper consideration of the application.

(3) A licence shall be granted only to a person who satisfies the Commissioner that–

(a) he has sufficient technical training or skill to carry out satisfactorily the construction of rail or vehicle tanks;

(b) he has at his disposal the tools, machinery or other resources necessary to carry out the construction satisfactorily;

(c) he has sufficient knowledge of these regulations to enable him to carry out the construction in accordance with the requirements of the regulations.

(4) Every licence shall be granted for a period of one year and there shall be paid in respect of every licence or renewal of licence a fee as prescribed in these Regulations.

(5) The Commissioner may at any time cancel any licence if the licensee is convicted of any offence under these Regulations or otherwise fails to comply with any obligations imposed on him by these Regulations or the terms of the licence.

(6) Any person aggrieved by the refusal of the Commissioner to grant a licence or by the cancellation of a licence may appeal to the Minister against the refusal or cancellation and the decision by the Minister shall be final.

(7) No person shall, whether for again or otherwise, construct rail or vehicle tanks except under and in accordance with a licence issued by the Commissioner.

(8) Any person who contravenes the provisions of this regulation commits an offence and is liable to a fine not exceeding two million shillings but not less than five hundred thousand shillings or in default, to imprisonment for a term not exceeding three years or to both that fine and imprisonment.

LIQUID MEASURING PUMPS (regs 145-163)

145. Definition

The term "liquid measuring pump" means any measuring instrument for the measurement of liquid fuel or lubricating oils for sale in individual quantities not exceeding twenty gallons other than a simple independent measure.

146. Prohibition of certain types

No liquid measuring pump for the sale of liquids of low viscosity in the presence of the purchaser shall be permitted unless it is–

(a) provided with a measuring chamber or chambers so constructed as to permit of a clear and unobstructed view by the purchaser of the contents of such measuring chamber or chambers or any portion thereof; and

(b) constructed to deliver measured quantities at one outlet only;

(c) provided with an individual sales indicator.

147. Test in situ

Examination. – Liquid measuring pumps of fixed type shall be securely fixed on a level base and the longitudinal axis of the measuring chamber or chambers shall be plump. Such instruments shall only be verified and stamped in the situation in which they are used.

148. Denomination

All measuring chambers shall have their denomination clearly and indelibly marked on the outside of the body thereof.

149. Indications of quantity

An indication of quantity on the dial of an individual sales indicator may be shown by figures only where the unit of measurement is boldly marked on the measuring chamber or the dial and no confusion is likely, in the opinion of the inspector, to arise.

150. Prohibition of certain markings

A liquid measuring pump shall not be permitted if it bears any notice, statement or mark other than a stamp of verification, which purports to be, or might be mistaken for, an expression of approval or guarantee of accuracy by any body or person.

151. Individual sales indicators

Every individual sales indicator shall be capable of being readily re-set to zero and it shall not be possible to advance the indication by other means than the proper operation of the instrument.

Any other counting or totalizing device shall be so arranged as to avoid any possibility of confusion with the individual sales indicator.

152. Marking of graduations

Every graduated scale of quantities shall be denominated in numerical sequence in one direction only.

153. Discharge signals

No audible or other signals of discharge which can be operated to signal before the movement of the individual sales indicator shall be permitted.

154. Flexible hose

No flexible discharge hose exceeding twelve feet in length shall be permitted.

155. Swing arms

Where a swing arm or other rigid form of extension pipe is fitted such arm or pipe shall be constructed either–

(a) to empty itself completely through the delivery outlet; or

(b) to remain permanently filled up to its connection to the discharge pipe or hose:

Provided that in the latter case a sight glass of a pattern approved by the Chief Inspector of Weights and Measures shall be fitted at the highest point of such arm or pipe and capable of indicating clearly whether such arm or pipe is completely filled.

156. Sight glasses

Every measuring instrument shall be provided with adequate sight glasses, observation windows or other means approved by the Chief Inspector of Weights and Measures for showing clearly that any measuring chamber is properly charged and discharged.

157. Drainage

A flexible hose together with any arm or pipe which empties itself on delivery shall be so arranged as to provide for ready and adequate drainage of the liquid.

158. Form of nozzle

No nozzle of a form liable when open to trap any portion of the liquid being delivered shall be attached to the discharge hose.

159. Test under working conditions

Verification.-A liquid measuring pump shall be tested under practical working conditions with the liquid fuel or oil which the instrument is intended to deliver.

160. Leakage test

Before testing any liquid measuring pump for accuracy, all packing, glands and joints shall be tested for leakage over a reasonable period with the liquid which the instrument is intended to deliver.

161. Wetting of hose

Before testing any liquid measuring fitted with a flexible discharge hose, liquid shall be passed through the instrument so that the hose shall have been wetted.

162. Permissible errors

The errors permissible on the verification of liquid measuring pumps shall be as specified in Table XIII contained in the Third Schedule hereto. The specified errors shall not be exceeded at any reasonable speed of operation, provided that the speed of operation for any single delivery shall be as uniform as possible.

163. Provision of seals

Stamping. – Every stop or other adjustable part affecting or likely to affect the quantity delivered shall be protected by plugs, seals, or sealing devices or with such sealing arrangements as may be sanctioned by the Chief Inspector of Weights and Measures with respect to a particular pattern.

The stamp of verification shall be placed on all such plugs, seals or sealing devices.

WEIGHTS, MEASURES AND INSTRUMENTS OF THE METRIC SYSTEM (regs 164-167)

164. Application to metric system

These Regulations shall apply to weights and measures of the metric system wherever applicable. The errors permissible in metric weights and measures shall be as specified in Tables XIV to XVIII contained in the Third Schedule hereto. The errors permissible on the verification of metric weighing and measuring instruments shall be proportional to those for instruments of Imperial capacity.

165. Prohibition of double marking

Weights and measures of capacity shall not be marked in both Imperial and metric denominations.

166. Dual purpose weighing instruments

Platform machines and weighbridges used for weighing Imperial and metric denominations shall bear on the pillar a conspicuous notice indicating that they may be used for that dual purpose.

167. Weights

All iron metric weights and loose counterpoises shall be of hexagonal shape. All other metric weights shall be either cylindrical, hexagonal, flat or of wire. In cylindrical weights the height of the cylindrical portion shall be approximately equal to the diameter. No iron weight below 100 grammes shall be permitted.

INSPECTION (regs 168-170)

168. Visiting traders premises

The premises of every trader in the district shall be visited at frequent intervals for the purpose of inspecting all weights and measures in use for trade.

Arrangements shall also be made for special surprise visits from time to time.

169. Obliteration of stamp G.N. No. 329 of 1966

Subject to the provisions at the end of this regulation the inspector, on inspection–

(1) shall obliterate the stamp–

(a) on any weight, measure or instrument which is such that it cannot be stamped or re-stamped under the Act or these Regulations, and cannot be made to comply with the requirements of the Act or these Regulations;

(b) on any repaired weight, measure, or instrument;

(c) on any weight, if the error in deficiency is more than half that allowed in excess on verification, or if the error in excess is more than that allowed on verification;

(d) on a measure of length if the error in deficiency or excess exceeds four times the amount allowed on verification;

(e) on a measure of capacity (other than an apothecaries measure), if the error in deficiency is more than half that allowed in excess on verification, or if the error in excess is more than that allowed on verification;

(f) on an apothecaries measure if the error is greater than that allowed on verification;

(g) on a weighing instrument if the error exceeds twice or if the deficiency in sensitiveness exceeds three times that allowed on verification;

(h) on a liquid measuring pump if the error in deficiency is more than half that allowed in excess on verification, or if the error in excess is more than twice that allowed on verification.

(2) may obliterate the stamp–

(a) on any liquid measuring pump of fixed type which has been erected or re-erected since it was last stamped;

(b) on any liquid measuring pump to which any alteration or addition has been made or which has been adjusted or repaired in any manner which might affect its accuracy since it was last stamped:

Provided that where a weight, measure or weighing or measuring instrument does not comply fully with the requirements of the Act or these Regulations, but the nature or degree of the non-

compliance is not in the opinion of the inspector such as to require the immediate obliteration of the stamp or stamps, he shall leave with the trader a notice calling upon him to have the weight, measure or weighing or measuring instrument corrected within such period as the inspector may specify in the notice and shall obliterate the stamp or stamps if the correction has not been carried out within that period.

170. Suspended instruments

(1) Should an inspector find any weighing instrument on the premises of any trader in use for trade, which instrument is of a pattern designed to be suspended in use, not so suspended from a standard, pulley or other means of suspension, he shall leave with the trader a written notice calling upon him to have the instrument suspended within a period of seven days.

(2) Any trader who fails to comply with a notice left with him in accordance with paragraph (1) of this regulation shall be guilty of an offence and shall be liable on conviction to a fine not exceeding five hundred shillings.

EXPLOSIVES (reg 171)

171. Weights, etc., used in manufacture of explosives

These Regulations, so far as they relate to material, shall not apply to weights and measures used in the manufacture of explosives.

FEES (regs 172-176)

172. Fees payable for stamping

The fees specified in the Fourth Schedule hereto shall be payable to an inspector in respect of every weight, measure and instrument examined and verified and stamped by him with a stamp of verification.

173. Rejection fees

One-half the fees specified in the Fourth Schedule hereto shall be payable to an inspector in respect of every weight, measure and instrument rejected by him.

174. Adjusting charges

The charges specified in the Fifth Schedule hereto shall be payable to an inspector in respect of every weight, measure and instrument adjusted by him and for each of the miscellaneous services enumerated in the Schedule. Where a weight, measure or instrument is adjusted and stamped, both the adjusting fee under the Fifth Schedule hereto and stamping fee under the Fourth Schedule hereto will be payable.

175. Travelling expenses, etc.

Where an inspector attends at a place other than a stamping station, on the application of any person for the purpose of examining and weight, measure or instrument the applicant shall pay, in addition to the fees specified, a sum not exceeding the actual cost of cartage, carriage and lifting of standards and the actual travelling expenses of the inspector unless suitable transport is provided by the applicant:

Provided that where the weights, measures and instruments examined are belonging to or used by different persons in the same district, such sum shall be levied pro rata on such persons.

176. Form of receipt

The receipt given by the inspector for fees paid shall be in a form approved by the Principal Secretary to the Treasury and shall specify all weights, measures and instruments examined, verified, stamped, rejected or adjusted for the same person on the same occasion.

REPAIR OF INSTRUMENTS (regs 177-188)

177. Repairer to be licensed G.N. No. 112 of 1979

(1) Any person who intends to carry on the business of installing, servicing, overhauling or repairing any instrument shall first apply for a licence to the Chief Inspector of Weights and Measures.

(2) An application for a licence under this regulation shall be in writing and shall specify–

(a) the name of the applicant and his proposed principal place of business and address;

(b) qualifications or experience of the applicant in working on instruments;

(c) the types of instruments which the applicant proposes to work on;

(d) the type of licence being applied for:

Provided that the Chief Inspector of Weights and Measures may require the applicant to furnish him with such other particulars as he may deem necessary for the proper consideration of the applications.

178. Persons to whom licences may be granted G.N. No. 112 of 1979

A licence shall be granted only to a person who satisfied the Chief Inspector–

(a) that he has sufficient technical training or skill to carry out satisfactorily, the installation, service, overhaul or repair of the proposed instruments;

(b) that he has at his disposal the tools, machinery or other resources necessary to carry out satisfactorily, the installation, service, overhaul or repair of the proposed instruments;

(c) that he has sufficient knowledge of these Regulations, to enable him to carry out the installation, service, overhaul or repair of the proposed instruments in accordance with the requirements of the Regulations; and

(d) that he maintains a principal place of business and a business address as a repairer of instruments.

179. Types of licences and form G.N. No. 112 of 1979

(1) A person may apply for either a class "A" licence or a class "B" licence.

(2) A Class "A" licence shall be in the form prescribed in Form No. 1 of the Sixth Schedule to these Regulations and shall be granted only to persons capable of working on all types of instruments.

(3) A Class "B" licence shall be in the form prescribed in Form No. 2 of the Sixth Schedule to these Regulations and shall be granted only to persons capable of working on one or a number of specified instruments.

180. Duration of licence and fees G.N. No. 112 of 1979

(1) Every licence shall be granted for a period of one year and may be renewed for a further period or periods not exceeding one year at any time.

(2) There shall be paid in respect of every licence or renewal of licence a fee of five hundred shillings.

181. Cancellation of licence G.N. No. 112 of 1979

(1) The Chief Inspector may at any time cancel any licence if the licensee is convicted of an offence against these Regulations or otherwise fails to comply with any obligations imposed on him by these Regulations or the terms of the licence.

(2) Any person aggrieved by the refusal of the Chief Inspector to grant a licence by the cancellation of his licence may appeal to the Minister against the refusal or cancellation and the decision of the Minister shall be final.

182. Licence to be displayed G.N. No. 112 of 1979

The licensee shall display his licence at some conspicuous place at his principal place of business.

183. Where instruments may be repaired G.N. No. 112 of 1979

Any instrument may be serviced, overhauled or repaired on the premises of the owner or at a place of business maintained by the licensee in accordance with these Regulations.

184. Licensee to issue certificates G.N. No. 112 of 1979

Where a licensee has installed, serviced, overhauled or repaired any instrument he shall issue to the owner of that instrument, a certificate in the form prescribed in Form No. 3 of the Sixth Schedule to these Regulations.

185. A licensee to maintain register G.N. No. 112 of 1979

Every licensee shall maintain a register in which shall be entered the a following particulars–

(a) the type of instrument and the name of the owner;

(b) the nature of defect in the instrument;

(c) the nature of the work done by the licensee on the instrument; and

(d) the date on which the licensee attended to that instrument.

186. Duty of licensee to submit instruments for inspection G.N. No. 112 of 1979

(1) Every licensee shall cause every instrument installed, overhauled, serviced or repaired by him to be examined by an Inspector for the purposes of verification and stamping before the instrument is put to use.

(2) For the purposes of the examination of instruments under this Regulation, the licensee shall furnish the Inspector with the register maintained pursuant to Regulation 186, and such other information as the Inspector may require.

187. Verification of test weights and measures G.N. No. 112 of 1979

Every test or standard weight or measure used by a licensee shall be submitted to the Inspector not less than twice every year for the purposes of verification.

188. Offences G.N. No. 112 of 1979

(1) No person shall, whether for gain or otherwise install, service, overhaul or repair any instrument except under and in accordance with a licence issued by the Chief Inspector of Weights and Measures.

(2) Any person who contravenes the provisions of this Regulation shall be guilty of an offence and shall be liable to a fine not exceeding five thousand shillings or in default to imprisonment for a term not exceeding two years.

(3) Any licensee who fails to comply with any obligation imposed on him by Regulations 182, 184, 185, 186 and 187 shall be guilty of an offence and shall be liable to a fine not exceeding five hundred shillings or in default, to imprisonment for a term not exceeding six months.

FIRST SCHEDULE

FORMS

FORM A

FORM OF CERTIFICATE OF VERIFICATION OF SECONDARY STANDARDS

WE HEREBY CERTIFY that the several secondary standards numbered

viz. one each of .....

have been this day duly compared in our presence and found to agree with the National Standards.

Number(s)

.....

..... Wardens of the

National Standards

.....

Inspector of Weights and Measures

Dated this ..... day of ..... 20.....

FORM B

FORM OF CERTIFICATE TO BE USED BY AN INSPECTOR AFTER EXAMINATION OF WORKING STANDARDS

I HEREBY CERTIFY that the several working standards

viz. ..... have been this day duly compared by me and found to agree with the secondary standards.

Dated this ..... day of ..... 20.....

.....

Inspector of Weights and Measures

FORM C

FORM OF CERTIFICATE OF EXAMINATION OF NATIONAL STANDARDS

I HEREBY CERTIFY that all the National Standards have this day been examined by me and have been found to be complete and in good condition.

.....

Inspector of Weights and Measures

Witness .....

Title .....

Dated this ..... day of ..... 20.....

FORM D

FORM OF CERTIFICATE TO BE USED BY A PUMP MECHANIC AFTER SEALING OR RE-SEALING

Company employing mechanic .....

I hereby certify that the under-mentioned liquid measuring pump has been–

1 Erected Adjusted Repaired

by me and sealed with my seal No. .....

Name of user of pump .....

Location .....

Make and type of pump .....

Serial No. .....

Date of sealing ....., 20.....

I further certify that the above pump was fully tested against approved stamped measures and found correct within the permitted limits of error before sealing.

Signature .....

Certificate of Authorisation No. .....

I/We ..... being the user(s) for trade purposes of the liquid measuring pump described above, which has been sealed/re-sealed by the

pump mechanic, request the Inspector of Weights and Measures that arrangements may be made for its verification.

Date ..... Signature .....

To be forwarded to the Inspector of Weights and Measures, P.O. Box 313, Dar-es-Salaam

FORM E

FORM OF CERTIFICATE FOR THE USE, OR POSSESSION FOR USE IN TRADE, OF WEIGHTS, MEASURES OR WEIGHING OR MEASURING INSTRUMENTS NOT STAMPED WITH THE PRESCRIBED VERIFICATION MARK G.N. No. 285 of 1967

This is to certify that ..... has been

granted permission under section 35 of the Weights and Measures Act, to use or have in his possession for use in trade, the under-mentioned weight(s), or weighing or measuring instrument(s), which is/are not stamped with the prescribed verification mark.

Make and type of weight(s) or instrument(s) .....

.....

This certificate is valid until .....

and is valid in the following areas of Tanzania .....

.....

Conditions of issue .....

.....

Chief Inspector of Weights and Measures

SECOND SCHEDULE

PERMISSIBLE ABBREVIATIONS OF DENOMINATIONS G.N. No. 329 of 1966

Weights–

Hundredweight cwt.

Pound lb.

Ounce (avoirdupois) oz.

Ounce (troy) oz. tr.

Ounce (apothecaries) oz. apoth.

Dram dr.

Grain gr.

4 drachms ivj

2 drachms iij

1 drachm i

2 scruples iij

1 1/2 scruples or 1/2 drachm iss ss

1 scruple i

1/2 scruple ss

Measures of Length–

Yard yd.

Foot ft.

Inch in.

Apothecaries Measures–

Fluid ounce fl. oz.)

Fluid drachm fl. dr.) or symbols

Minim min.)

Liquid Measuring Pumps only–

1/2 pint1/2 pt.

Pint pt.

Quart	qt.
1/2 gallon	1/2 gal.
Gallon or gallons	gal.

Metric Weights–

Kilogramme	kilog. or kg.
Gramme	grm. or g.
Decigramme	dg.
Centigramme	cg.
Milligramme	mg.
Metric carat	C.M.

Metric Measures of Length–

Metre	m.
Decimetre	dm.
Centimetre	cm.
Millimetre	mm.

Metric Measures of Capacity–

Litre	lit.
Decilitre	dl.
Centilitre	cl.
Millilitre	ml.

THIRD SCHEDULE

TABLE I

AVOIRDUPOIS WEIGHTS

Denomination	Error in excess only	
Iron weight	Other than weights	
	Grains	Grains
56 lb.	60	30
50 "	55	27.5
28 "	40	20
20 "	30	15
14 "	24	12
10 "	20	10
7 "	16	8
5 "	14	7
4 "	12	6
2 "	8	4
1 "	4	3
8 oz. and 4 oz.	4	2
2 " " 1 "	-	1
8 drams to 1/2 dram	-	0-5

TABLE II

UNITED REPUBLIC OF TANZANIA LICENCE TO CONSTRUCT RAIL AND ROAD TANK G.N. No. 537 of 1998

The Weights and Measures Regulations

(Regulation 144(1))

This Licence is granted to ..... of

.....

and authorising him to construct rail/road tank throughout the United Republic:

Valid for the period .....

LICENCE NO. .....

Dar es Salaam

....., 20.....

.....

Commissioner for Weights and Measures

EXAMPLES OF DEVICES FOR MEASURING THE LIQUID LEVEL IN A TANKER

FIGURE 1

FIGURE 2

1. Dome
2. Level index
3. Observation window
4. Shell of the tank

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8

TABLE III

TROY, APOTHECARIES' AND GRAIN WEIGHTS

Ounces Troy	Apothecaries	Grains	Error in excess only
500 to 300 inclusive	-	-	5 grains
200 and 100	-	-	4 "
50 and 40	-	-	2 "
30 and 20	-	-	1 grains
10	10 oz.	-	0.7 "
5	8 and 6 oz.	4000 and 2000	0.5 "
4 and 3	4 oz.	-	0.4 "
2	2 "	-	0.3 "

1 1 " 1000 and 500 0.2 "

0.5 to 0.1 inclusive 4 drachms to 2 scruples inclusive 300,200,100 0.1 "

0.05 to 0.02 inclusive 1 1/2 scruples to 1/2 scruple inclusive 72 to 10 inclusive 0.05 "

0.01 6 grains to 3 grains inclusive 5 and 3 0.02 "

0.005 to 0.001 inclusive 2 grains to 1/2 grain inclusive 2 to 0.5 inclusive 0.01 "

- - 0.3 0.005 "

- - 0.2 and 0.1 0.002

- - 0.05 to 0.1 0.001

TABLE IV

MEASURES OF LENGTH

Metal Error allowed (in parts of an inch)

End Measures Line Measures

Long or in excess Short or in deficiency Long or in excess Short or in deficiency

100 ft. to 50 ft. - - 0.3 0.3

Under 50 ft. to 10 ft. - - 0.2 0.2

Under 10 ft. and above 3 ft. - - 0.05 0.05

3 ft. to 1 ft. inclusive 0.03 0.015 0.02 0.01

Under 1 ft. 0.01 0.01 0.005 0.002

On other than metal measures twice the above amounts may be allowed.

TABLE V

APOTHECARIES' GRADUATED GLASS MEASURES

Approximate internal diameter of Measures at the graduation tested	Error in excess or deficiency	
Cylindrical or Conical shape	Flasks or Burettes	
Inches	Minims	Minims
4	25	12½
3½	21	10½
2½	18	9
2	14	7
13/4	11	5½
1½	9	4½
1¼	7	3½
1	6	3
7/8	4	2
3/4	3	1½
5/8	2	1
½	1	½
	½	¼

TABLE VI

BEAM SCALES

Capacity of Instrument	Sensitiveness when fully loaded	Greatest error allowed when fully loaded
1 oz.	0-05 grain	0-1 grain
1 lb.	0-1 "	0-2 "

7 " 0-5 " 1.0 "

56 " 1-5 grains 2.0 grains

TABLE VII

BEAM SCALES

Class B

Capacity of Instrument	Sensitiveness when fully loaded	Greatest error allowed when fully loaded
1 oz.	0.2 grain	0.2 grain
8 "	1 "	1 "
1 lb.	1 "	1 "
2 "	1.5 grains	2 grains
4 "	3 "	4 "
7 "	4 "	6 "
10 "	6 "	9 "
14 "	8 "	12 "
28 "	15 "	22 "
56 "	25 "	40 "
100 "	1 1/2 drams	2 1/2 drams
Above 100 "	add 1/2 dram for each 100 lb. of capacity	add 1 dram for each 100 lb. of capacity

TABLE VIII

BEAM SCALES

Class C

Multiply the figures for sensitiveness and error in Table VII by 3.

TABLE IX

COUNTER MACHINES

Capacity of Machine	Sensitiveness when fully loaded	Greatest error allowed when fully loaded
1 lb.	1 dram	1 dram
2 "	1 "	1½ drams
4 "	1 1/2 drams	2 drams
7 "	2 drams	3 "
10 "	2 1/2 drams	3 1/2 drams
15 "	3 drams	4 drams
20 "	3 1/2 drams	5 drams
25 "	4 drams	6 drams
50 "	6 drams	9 drams
100 "	8 drams	1 oz.

TABLE X

PLATFORM MACHINES, DEAD-WEIGHT MACHINES AND WEIGHBRIDGES

Capacity of Instrument	Vibrating Machines		Accelerating Machines	
	Sensitiveness when fully loaded	Greatest error when loaded	Greatest error when fully loaded	
100 lb.	1/2 oz.	1 oz.	1 oz.	
200 lb.	3/4 "	1 1/2 oz.	1 1/2 oz.	
300 lb.	1 oz	2 oz.	2 oz.	

400 lb.	1 1/4 oz.	2 1/2 oz.	2 1/2 oz.
500 lb.	1 1/2 oz.	3 oz.	3 oz.
600 lb.	1 3/4 oz.	3 1/2 oz.	3 1/2 oz.
700 lb.	2 oz.	4 oz.	4 oz.
1000 lb.	3 oz.	6 oz.	6 oz.
1500 lb.	4 oz.	8 oz.	8 oz.
2000 lb.	5 oz.	10 oz.	10 oz.
3000 lb.	6 1/2 oz.	13 oz.	13 oz.
4000 lb.	8 oz.	1 lb.	1 lb.
5000 lb.	10 oz.	1 1/4 lb.	1 1/4 lb.
5 tons	3 1/2 lb.	4 lb.	4 lb.
10 tons	5 lb.	6 lb.	6 lb.
20 tons	7 lb.	10 lb.	10 lb.
25 tons	8 lb.	12 lb.	12 lb.
30 tons	8 1/2 lb.	13 1/2 lb.	13 1/2 lb.
35 tons	9 lb.	15 lb.	15 lb.
40 tons	9 1/2 lb.	16 lb.	16 lb.

TABLE XI

AUTOMATIC MACHINES

Use	Capacity	Error
Weighing small loads of tea, coffee, etc.	1 oz. and upwards	1/2 percent of the load in excess only
Weighing grain, etc.	10 lb. and upwards	1/4 percent of the load in excess or deficiency
Weighing coal, etc.	100 lb. and upwards	1/2 percent of the load in excess or deficiency

Totalizing machines	10 cwt. and upwards	1/2 percent of the total load of 30 weighings in excess or deficiency

TABLE XII

SELF-INDICATING WEIGHING INSTRUMENTS

Capacity of Instrument	Permissible error
Under 3 lb.	1 dram
3 lb. and under 10 lb.	3 drams
10 lb. " " 20 "	4 "
20 " " " 30 "	6 "
30 " " " 60 "	8 "
60 " " " 100 "	12 "
100 " and not exceeding 150 lb.	1 oz.

For capacities exceeding 150 lb. the error shall not exceed the weight corresponding to one-half of the interval between consecutive graduations on the dial or chart.

TABLE XIII

LIQUID MEASURING PUMPS

Quantity Delivered	Error in excess only
1/2 pint	2 fl. dr.
Pint	3 " "
Quart	4 " "
1/2 gallon	6 " "
Gallon	1 " oz.

Above 1 gallon	1 " oz. per gallon

TABLE XIV

METRIC WEIGHTS

Denomination	Error in excess only	
Iron weights	Other than iron weights	
	Milligrams	Milligrams
20 kilograms	3000	1500
10 "	2000	1000
5 "	1000	500
2 "	600	300
1 kilogram	200	100
500 grams	100	50
200 "	60	30
100 "	40	20
50 "	-	15
20 "	-	10
10 "	-	8
5 "	-	8
2 "	-	6
1 gram	-	4
3 decigrams	-	3
2 "	-	1
1 decigram	-	1

5 centigrams	-	0.5
2 "	-	0.2
1 centigram	-	0.1
5 milligrams	-	0.05
2 "	-	0.03
1 milligram	-	0.03

TABLE XV

METRIC CARAT WEIGHTS

Denomination	Weight in Grams	Error in excess only
	Milligrams	
500 Metric Carats	100	6
200 " "	40	6
100 " "	20	4
50 " "	10	4
20 " "	4	2
10 " "	2	2
5 " "	1	1
2 " "	0.4	1
1 " Carat	0.2	1
0.5 " "	0.1	1
0.2 " "	0.04	0.5
0.1 " "	0.02	0.02
0.05 " "	0.01	0.1

0.02	"	"	0.004	0.05
0.01	"	"	0.002	0.02
0.005	"	"	0.001	0.03

TABLE XVI

METRIC MEASURES OF LENGTH

Metal	Error allowed (in millimetres)			
End Measures		Line Measures		
Long or in excess	Short or in deficiency		Long or in excess	Short or in deficiency
20 metres	7.5	7.5		
Decimetre or 10 metres		5	5	
Double metre or 2 metres	2	1	1	1
Metre or 1000 millimetres	1	0.5	0.5	0.5
Decimetre or 0.1 metre	0.5	0.25	0.2	0.1
Centimetre or 0.01 metre	0.2	0.1	0.1	0.05
Millimetre or 0.001 metre	0.05	0.025	0.05	0.25

On other than metal measures twice the above amounts of error are allowed.

TABLE XVII

METRIC MEASURES OF CAPACITY

Capacity of Measures at graduation tested	Error in excess only
	c.c.
20 litres	100

10 " (dekalitre) 75

5 " 50

2 " 25

1 litre 15

0.5 litre 10

0.2 " 5

0.1 " (decilitre) 2

0.05 " 2

0.02 " 1

0.01 " (centilitres) 0.5

0.005 " 0.25

0.002 " 0.1

0.001 " (millilitre) 0.05

TABLE XVIII

METRIC CUBIC MEASURES

Approximate internal diameter in millimetres at graduation tested	Error in excess or deficiency (in cubic centimetres)
100	1
90	1
80	0.8
70	0.8
60	0.6
50	0.6

40 0.4

30 0.3

20 0.15

10 0.05

On glass flasks and burettes half the above amounts are allowed.

NOTE TO TABLES

The allowances permissible on any weighing instrument from the zero graduation to half of the load shall be half the tabulated allowance for full load. At higher graduations the allowance shall not exceed the allowance for an instrument of the same class having a capacity of equal value to any such graduation.

FOURTH SCHEDULE G.N. No. 536 of 1998

1. Measurement of length for each measure:

   (a) not exceeding 500 millimetres 2,000/-

   (b) exceeding 500 millimetres 4,000/-

   (c) exceeding 20 metres but not exceeding 50 metres 6,000/-

   (d) exceeding 50 metres 10,000/-

2. Measures of capacity:

A (i) un-subdivided measures of capacity used for direct selling of goods to customer:

   (a) not exceeding 250 millilitres 150/-

   (b) exceeding 250 millilitres but not exceeding 5 litres 300/-

   (c) exceeding 5 litres but not exceeding 20 litres 500/-

   (d) exceeding 20 litres but not exceeding 100 litres 3,000/-

   (e) exceeding 100 litres but not exceeding 1,000 litres 10,000/-

   (f) exceeding 1,000 litres 15,000/-

(ii) un-subdivided measures of capacity used for verifying measures of capacity (eg. check pumps) in 2A(i):

(a) not exceeding 250 millilitres 1,000/-

(b) exceeding 250 millilitres but not exceeding 5 litres 3,000/-

(c) exceeding 5 litres but not exceeding 20 litres 5,000/-

(d) exceeding 20 litres but not exceeding 100 litres 6,000/-

(e) exceeding 100 litres but not exceeding 1,000 litres 9,000/-

(f) exceeding 1,000 litres 12,000/-

B:– (i) subdivided measures of capacity used for direct selling of goods to customers:

fees chargeable shall be those applicable to similar un-subdivided measures plus 50% of that rate.

(ii) subdivided measure of capacity for verifying measures in 2B:

fees chargeable shall be those applicable to similar un-subdivided measures in 2A(ii) plus 50%

3. Instruments for the measurement of liquid fuel and lubrication oil (commonly known as petrol pumps):

(a) for each instrument 35,000/-

(b) twin container 25,000/-

(c) bulk metres each 50,000/-

4. Weights: for each weight:

(a) metric carat weight each 1,000/-

(b) not exceeding 200g 200/-

(c) exceeding 200g but not exceeding 1kg 400/-

(d) exceeding 1kg but not exceeding 100kg 500/-

(e) exceeding 100kg but not exceeding 500kg 3,000/-

(f) exceeding 500kg 5,000/-

5. Weighing instruments:

for each instrument:

(a) not exceeding 5kg 1,000/-

(b) exceeding 5kg but not exceeding 50kg 2,000/-

(c) exceeding 50kg but not exceeding 500kg 10,000/-

(d) exceeding 500kg but not exceeding 1,000kg 20,000/-

(e) exceeding 1,000kg but not exceeding 50,000kg 30,000/-

(f) exceeding 50,000kg but not exceeding 100,000kg 50,000/-

(g) exceeding 100,000kg 100,000/-

6. Pattern approval:

for each instrument:

(a) Weighing instrument:

(i) capacity up to 200kg 20,000/-

(ii) above 200kg but not exceeding 1000kg 40,000/-

(iii) above 1000kg not exceeding 10,000kg 60,000/-

(iv) above 10,000kg 80,000/-

(b) Fuel pump 50,000/-

(c) Bulk meter 100,000/-

NB. 50% of the above fees shall be chargeable in addition for balances of precision, price computing instrument and counting machines.

7. Calibration fee for each vehicle for carrying sand and other

ballast ..... 10,000/- per cubic metre

8. Calibration fee for railway, tankers, skid tanks, wagon etc. for each one litre of capacity..... 10/- per litre

9. Calibration fee for the road tankers ..... 10/- per litre

10. Rejection fees 50% of the prescribed stamping fees.

FIFTH SCHEDULE

ADJUSTING FEES G.N. No. 536 of 1998

1. Measures of capacity for each measure 50% of the prescribed stamping fees for the particular measures.

2. Instruments for measuring liquid fuel and lubricating oil for each instrument 50% of the prescribed stamping fees for that particular instrument.

3. Weights:

For each weight

50% of the prescribed stamping fees for that particular weight.

4. Weighing instruments: The fee chargeable for each instrument shall be at the rate of the prescribed stamping fee for that particular weighing instrument.

SIXTH SCHEDULE

LICENCE TO REPAIR INSTRUMENTS G.N. No. 112 of 1979

THE UNITED REPUBLIC OF TANZANIA

FORM No. 1

CLASS "A" LICENCE

The Weights and Measures Regulations

(Regulations 176 and 178(2))

THIS LICENCE IS GRANTED TO:

.....

OF .....

and authorises him to install, overhaul, service or repair all types of instruments throughout the United Republic.

VALID FOR THE PERIOD .....

LICENCE NO. .....

.....

Chief Inspector of Weights and Measures

FORM No. 2

CLASS "B" LICENCE

The Weights and Measures Regulations

(Regulations 176 and 178(3))

THIS LICENCE IS GRANTED TO:

.....

OF .....

and authorises him to install, overhaul, service or repair the instruments specified below:

.....

.....

.....

.....

VALID FOR THE PERIOD .....

LICENCE NO. .....

.....

Chief Inspector of Weights and Measures

FORM No. 3

FORM OF CERTIFICATE TO BE USED BY A LICENSEE AFTER THE INSTALLATION, OVERHAUL, SERVICE OR REPAIR OF INSTRUMENTS

I hereby certify that I have installed/overhauled/serviced/repaired the following instruments viz. .....

owned by ..... of .....

Dated this..... day of ..... 20.....

VALID FOR THE PERIOD .....

.....

Licensed repairer

Business Address .....

.....

.....

.....

SEVENTH SCHEDULE

LICENCE FEES G.N. No. 536 of 1998

1. Application fees:

(a) Application for repair of weighing instrument 10,000/-

(b) Application for repair of liquid measuring instrument 10,000/-

2. Licence fees:

(a)	Class A Licence	50,000/-
(b)	Class B Licence	30,000/-
(c)	Class C Licence	15,000/-
(d)	Class D Licence	10,000/-
(e)	Tank Construction Licence	500,000/-
(f)	Fixed Storage Tank Calibration Licence	250,000/-

SEVENTH SCHEDULE

MISCELLANEOUS FEES G.N. No. 536 of 1998

Miscellaneous Fees:

(a)	Affixing solder studs (each)	500/-
(b)	Denominating a metal measure (each)	500/-
(c)	Denominating a glass measure (each)	700/-

(d) Balancing a weighing instrument (each)-10% of the prescribed stamping fees) .....

(e) Cleaning/Dusting of weighing (or measuring instrument (each) - 50% to the prescribed stamping fees) .....

(f)	Inserting of plug (each)	1,000/-
(g)	Cleaning of dipstick (each)	2,000/-
(h)	Retyping, copy of calibration chart (each)	5,000/-
(i)	Transfer of reading on another dipstick (each)	5,000/-

(j) Where any weight, measure, weighing or measuring instrument not intended for trade use has been examined, tested and or verified by an Assizer, a fee chargeable shall be equal to 50% of the prescribed stamping fee on a similar instrument

(k) Certification of automatic filler, packer, weigher, measure etc. (each) 30,000/-

(l) Where an Assizer is delayed in the conduct of a test through neglect or failure on the part of person submitting any weight, measure, weighing or measuring instrument for verification, or where he is delayed awaiting minor adjustment to be made by a repairer, the Assizer shall charge a fee at the rate equal to the stamping fee for that weight, measure, weighing or measuring instrument per hour so delayed with proportion for part of an hour, so delayed.

THE WEIGHTS AND MEASURES (FIXED STORAGE TANK) REGULATIONS

(Section 54(1))

G.N. No. 533 of 1998

1. Citation

These Regulations may be cited as the Weights and Measures (Fixed Storage Tank) Regulations.

2. Interpretation

In these Regulations, unless the context requires otherwise–

"calibration" means the set of operations carried out to determine the capacity of tank up to one or several liquid levels;

"calibration table" means the expression in the form of a table, of the mathematical function V(h) which represents the relation between the height "h" (independent variable) and the volume V (dependent variable);

"deadstock" means the volume of liquid contained in the bottom of the tank up to the lowest dipping datum point;

"deadwood" means any tank fitting(s) which affects the capacity of a tank and deadwood is referred to as "positive deadwood" when the capacity of the fitting adds to the effective capacity of the tank, or "negative deadwood" when the volume of the fitting displaces liquid and reduces the effective capacity;

"dipping datum point (landing plate)" means the intersection of the vertical measurement axis, with the upper surface of the dip plate, or with the bottom surface of the tank, if the dip plate is not provided it constitutes the origin of the measurement of liquid levels (zero reference);

"fixed storage tank" means tanks at atmospheric pressure or under pressure, which is built for bulk liquid storage and may be used for measurement of volumes of liquid contained;

"gauge hatch (dip hole)" means the opening in the upper part of the tank to allow the liquid levels in the tank to be measured;

"graduated zone" means the range of volumes between the deadstock and the nominal capacity for tanks which calibration table has been established;

"high point" means the highest point on the bottom of a vertical cylindrical tank having a practically horizontal bottom covered last by the liquid when the tank is being filled;

"lower limit of accurate capacity" means the capacity below, which the maximum permissible error does not apply; taking account of the shape of the tank and the calibration method;

"nominal capacity" means the rounded value of the maximum volume of liquid a tank may contain under normal conditions of use;

"reference height (H)" means the distance between the dipping datum point and the upper reference point, measured along the vertical measurement axis, under reference conditions;

"sensitivity of a tank in the vicinity of a liquid level h" means the change in the level h, divided by the corresponding relative change in the volume:

$$\frac{h}{V}$$

for the contained volume V corresponding to the level h;

"smallest measurable height" means the change in the level, which corresponds, to the smallest measurable volume;

"smallest measured volume" means the smallest volume the measurement of which is authorised, for delivery or reception of the liquid, at any point of the graduated zone;

"ullage" means the distance between the free surface of the liquid and the upper reference point, measured along the vertical measurement axis;

"upper reference point" means the point located on the vertical measurement axis, with reference to which the ullage is measured;

"vertical measurement axis" means the vertical line which passes through the middle of the steel well (guide pipe), if provided, belonging to the gauge hatch concerned, and corresponding to the position intended for automatic or manual level gauges.

3. Shape and position of tank and measuring liquid levels

(1) The shape of a tank can be as follows, namely–

(a) a cylindrical with vertical or horizontal axis and with flat, conical, truncated hemispherical elliptical or dome-shaped bottom or ends; or

(b) a spherical or spheroidal; or

(c) a parallelipedic.

(2) The position of the tanks with reference to the ground may be on the ground, partially underground or above the ground.

(3) The means used for measuring the levels or volumes of liquid contained may be–

(a) a single graduation mark;

(b) a measuring device with a graduated scale (with a viewing window or an external gauge tube);

(c) a graduated rule (dipstick) or a graduated tape with dip weight or sinker;

(d) an automatic level gauge.

4. Construction and meteorological requirements

(1) A tank shall be built in accordance with sound engineering practice and shall comply with the legal requirements for storage of contained liquids in relation to the characteristics of the liquid.

(2) A tank, may be provided with devices necessary to prevent, as far as possible, the loss of liquid by evaporation.

(3) A tank, to be accepted for verification, shall comply with the following general requirements, namely–

(a) the shape, material reinforcement, construction and assembly shall be such that the tank is sufficiently resistant to the atmosphere and the effects of the contained liquid and that, under the normal conditions of use, it suffers no permanent deformation which may alter its capacity (other metals shall be specially approved);

(b) the dipping datum point and the reference point shall be constructed so that their positions remain practically unchanged whatever the state of filling of the tank, the temperature but for large tanks of over 100m3 the effects on the reference points as a function of filling, temperature and density shall be indicated in the calibration certificate so that corrections can be applied during the determination of volume;

(c) the shape of the tank shall be such that the formation of airpockets during filling, or of pockets of liquid after draining is prevented;

(d) to permit the application of the geometric method of calibration, the tank shall show no deformation, budges, etc. which could prevent correct measurement of their dimensions and interpolation between measurements;

(e) the tanks shall be stable on their foundations, this may be ensured by anchoring or by an adequate period of stabilisation the tank remaining full so that its base will not vary greatly with time and for vertical cylindrical tanks,exceeding 2000 ml, five gauge hatches may be provided, one of these as close as possible to the centre and the other ones evenly spaced near the side walls. The gauge hatch located in the part least exposed to the sun is the principal gauge hatch; and

(f) the tank shall be pressure tested and leak proof, the results being recorded in a document which shall be presented before calibration starts.

5. Calibration information

(1) The tank shall be provided with a calibration information plate bearing–

(a) the identification number of the tank;

(b) the reference height H in millimetres (except for tanks with an external gauge tube);

(c) the number of the calibration certificate followed by the last two figures of the year in which calibration was carried out and preceded by the name or acronym of the institution which carried out the calibration; and

(d) nominal capacity, rounded down to the nearest cubic metre.

(2) The calibration information plate shall be made of a metal which remains practically unchanged under normal conditions of use and the plate shall be fixed on an integral part of the tank so located that it is readily visible and easily legible, not subject to deterioration and in such a manner that it cannot be removed without breaking the seals which carry the verification marks.

6. Permissible calibration errors

(1) The maximum permissible calibration error applies to values between the lower limit of accurate capacity and nominal capacity, shown in the calibration table.

(2) The maximum error positive or negative,shall be equal to–

(a) 0.02% of indicated volume for vertical cylindrical tank is calibrated by geometrical method;

(b) 0.3% of the indicated volume for horizontal or titled cylindrical tanks calibrated by geometrical method and for any tank calibrated by volumetric method;

(c) 0.05% of the indicated volume for spherical or spheroidal tanks calibrated by geometric method.

(3) A tank shall be presented for verification when it is empty and well cleaned and it shall be degassed and prepared so that it does not present any risk to the operators.

7. Verification

(1) A manufacturer shall submit to the Assizer before stating construction the design drawing of the tank showing–

(a) the general layout;

(b) the method of fixing the tank on the ground (or under ground);

(c) the position of the valves and of the inlet and outlet pipes, so that the way in which the tank can be completely emptied for the purpose of cleaning and periodic calibration can be deduced;

(d) the position and dimensions of deadwoods (positive and negative);

(e) the details concerning the floating roof or floating cover (if provided) including its mass;

(f) the detail of fitting liquid level measuring device in the tank;

(g) the position of the calibration information plate.

(2) An initial verification shall be carried out in two stages, namely–

(a) examination of the tank in situ, that is to say, the finished construction is checked, establishing its conformity with the approved drawing, taking into consideration the uniformity of construction, any possible permanent deformations, the rigidity of the structure, stability, manholes, access to the gauge hatch, the possibility of carrying out calibration, protected access ladder to the roof, handrail around the roof, internal fittings (deadwood), floating roof or floating cover, attachments for the fitting of the calibration information plate and, in particular the workmanship and the fitting of the level measuring devices;

(b) calibration is carried out when the Assizer is satisfied with the in situ examination, that is to say, the calibration may be carried out by one of the following methods namely–

(i) geometric; or

(ii) volumetric; or

(iii) combination of the two.

(3) Periodic verification shall be carried out at the end of every five years.

(4) Recalibration shall be carried out after any accident or deformation of the tank, which could cause a change in its metrological qualities and the owner of the tank shall inform the Weights and Measures Bureau of any incident of the kind.

(5) A tank which complied with all the requirements shall be accepted for verification and after calibration, the calibration certificate shall be issued and the markings on the calibration information plate are completed.

(6) The calibration certificate shall include–

(a) reference height, H;

(b) positions of vertical measurement axes (gauge hatches, reference points including the identification of the principal reference point);

(c) nominal capacity and lower limit of accurate capacity;

(d) the table of volumes corresponding to a vertical distance of 1mm for each zone for which the volume per millimetre varies (Interpolation table);

(e) the reference density if appropriate;

(f) the maximum permissible error on the determinations of the values given in the calibration table;

(g) the period of validity of the calibration certificate;

(h) the date of issue of the calibration certificate.

8. Liaising

(1) Any person who intends to carry on the business of constructing or calibrating fixed storage tank shall first apply for a licence to the Commissioner for Weights and Measures.

(2) An application for a licence under this regulation shall be in writing and shall specify–

(a) the name of the applicant and his proposed principal place of business and address;

(b) qualification or experience of the applicant; and

(c) the type of licence applied.

(3) A licence shall be granted only to a person who satisfies the Commissioner–

(a) that he has sufficient technical training or skill to carry out satisfactorily the construction or calibration of the fixed storage tank;

(b) that he has at his disposal the tools, machinery or other resources necessary to carry out satisfactorily the construction or calibration;

(c) that he has sufficient knowledge of these regulations to enable him to carry out the construction or calibration in accordance with the requirements of the Regulations.

(4) A person may apply for a licence for either construction, calibration or both as specified in Tables 1A, IB and IC.

(5) Every licence shall be granted for a period of one year and there shall be paid in respect of every licence or renewal of licence a fee as prescribed in the regulations.

(6) The Commissioner may at any time cancel any licence if the licensee is convicted of any offence under these Regulations or otherwise fails to comply with any obligations imposed on him by these Regulations or the terms of the licence.

(7) Any person aggrieved by the refusal of the Commissioner to grant a licence or by the cancellation of this licence may appeal to the Minister against the refusal or cancellation and the decision of the Minister shall be final.

(8) No person shall, whether for gain or otherwise construct or calibrate any fixed storage tank except under and in accordance with a licence issued by the Commissioner for Weights and Measures.

(9) Any person who contravenes the provisions of this regulation commits an offence and upon conviction is liable to a fine not exceeding two million shillings or in default, to an imprisonment of a term not exceeding three years.

TABLES

TABLE IA

LICENCE TO CONSTRUCT FIXED STORAGE TANK

(Regulation 8(4))

UNITED REPUBLIC OF TANZANIA

The Weights and Measures (Fixed Storage Tank) Regulations

This Licence is granted to: .....

of .....

and authorising him to calibrate fixed storage tank throughout the United Republic.

Valid for the period .....

LICENCE NO. .....

Dar es Salaam,

....

Commissioner for Weights

and Measures

TABLE IB

LICENCE TO CALIBRATE FIXED STORAGE TANK

(Regulation 8(4))

UNITED REPUBLIC OF TANZANIA

The Weights and Measures (Fixed Storage Tanks) Regulations

This Licence is granted to: .....

of .....

and authorising him to calibrate fixed storage tank throughout the United Republic.

Valid for the period .....

LICENCE NO. .....

Dar es Salaam,

....

Commissioner for Weights

and Measures

TABLE IC

LICENCE TO CONSTRUCT AND CALIBRATE FIXED STORAGE TANK

(Regulation 8(4))

UNITED REPUBLIC OF TANZANIA

The Weights and Measures (Fixed Storage Tanks) Regulations

This Licence is granted to: .....

of .....

and authorising him to calibrate fixed storage tank throughout the United Republic.

Valid for the period .....

LICENCE NO. .....

Dar es Salaam,

....

Commissioner for Weights

and Measures

THE WEIGHTS AND MEASURES (SAND AND OTHER BALLAST) REGULATIONS

(Section 54(1))

G.N. No. 534 of 1998

PART I

PRELIMINARY PROVISIONS (regs 1-2)

1. Citation

These Regulations may be cited as the Weights and Measures (Sand and Other Ballast) Regulations.

2. Interpretation

In these Regulations, the expression–

"ballast" means–

(a) sand, gravel, shingle, ashes and clinker of any description;

(b) broken slag, slag chippings, granite chippings, limestone chipping, slate chippings and other stone chippings including materials which have been coated with tar, bitumen or cement;

(c) any other material commonly used in building and civil engineering industries as a hardcore or an aggregate;

(d) any other material commonly known as ballast.

PART II

BALLAST (regs 3-4)

3. Prescribed ballast

Subject to regulation 4, ballast shall be sold only by volume in a multiple of 0.2 cubic metre, provided that sales below 0.2m3 should be in multiples of 0.2m3.

4. Prohibition for trade use

Without prejudice to subsection (1) of section 12 of the Act, no article shall be used for trade as a cubic measure of ballast other than a receptacle which may, if so desired, form part of a vehicle, which conforms with such requirements as to form, capacity, calibration and other matters prescribed.

PART III

BRIM MEASURES (reg 5)

5. Construction form and sizes of brim measures

(1) Prescribed brim measures shall be constructed to measure only one of the following quantities, namely–

(a) 0.02m3 or multiples thereof not exceeding 0.2m3;

(b) 0.02m3, a multiple thereof not exceeding 1m3; or

(c) 0.5m3.

(2) Unless made in accordance with an approved pattern, any prescribed brim measure shall–

(a) have a smooth and level floor and sides with smooth interiors perpendicular to the floor;

(b) be constructed of durable materials and be of sufficient thickness or so reinforced as to remain rigid when in use;

(c) have its adjacent sides set at right angles to each other;

(d) if made of a hard metal, have a soft metal plug on the exterior immediately below the brim to accommodate stamp.

(3) A prescribed brim measure shall, if it has detachable sides–

(a) have on all the component parts a common mark intended to ensure that the correct parts are employed in assembling the measure;

(b) have a base which projects at least 2.5m beyond the sides and is in contact with the lower edges of the sides at all points; and

(c) be so designed as to preclude incorrect assembly.

PART IV

PRESCRIBED MEASURES OTHER THAN BRIM MEASURE

OF AN APPROVED PATTERN (regs 6-10)

6. Application

This Part shall apply to prescribed measures other than brim measures or measures of an approved pattern.

7. Construction form, etc. of other measures

(1) A measure to which this Part of these Regulations applies shall be sufficiently strong to stand the wear and tear of use and to remain rigid when in use and shall not–

(a) have a false bottom;

(b) have an internal surface, or projections therefrom which impede its ready discharge;

(c) be constructed in a manner which facilitates fraud.

(2) A measure shall have four sides and the angles between the sides and the base and between the adjoining sides shall all be 90 degrees except that a measure which has one pair of sides longer than the other may–

(a) taper in width by up to 10 percent;

(b) have its longer sides curved into the base, and the corners of the other sides rounded accordingly:

Provided that the effect is not to reduce the width of the base to less than three-quarters of the width at the top.

(3) A measure shall be assembled in a permanent manner so that neither its form nor its volume may be charged in the course of trade, but this requirement shall not preclude any side or sides being so hinged as to swing outwards to facilitate discharge.

8. Calibration

No measure to which this Part of these Regulations applies shall be calibrated to indicate any quantity other than 0.2m3 or a multiple thereof, and such measures shall be calibrated to indicate quantities up to and including the maximum purported content as follows–

(a) measures of a maximum purported content of less than 4m3 as respects 0.2m3 and every multiple thereof;

(b) measures of a maximum purported content which exceeds 4m3 but is not a whole number of cubic metre as respects every multiple of 0.2m3 which exceeds the greatest number of whole cubic metre which the measure will contain.

9. Calibration strips

(1) A calibration shall be effected by marking a pair of metal strips in the manner described in regulation 10.

(2) One calibration strip shall be firmly attached to the interior of each of two opposing sides of the measure in a vertical position near to the centre of the side.

(3) Each calibration strip shall be attached to the measure by bolts or rivets and shall in addition, have a slot cut into the front to retain the head of a tree-bold.

(4) A calibration strip shall be of truncated triangular cross section; the back shall be at least 35mm. wide, the angle between the sides and back shall be not less than 50 degrees nor more than 70 degrees, and the distance between the front and back shall be at least 12mm.

(5) A metal sealing box generally conforming with the appropriate pattern depicted in the Second Schedule shall be secured to the exterior of the measure by a nut threaded on to the tree-bold mentioned in subregulation (3) and the sealing box on each calibration strip shall have sides about 25mm. long.

(6) each sealing box shall be further fixed to the exterior of the measure by at least two screws or pins so as to preclude the rotation of the box.

(7) Every sealing box shall be filled with lead to prevent the removal of the nut or bolt mentioned in subregulation (5).

10. Marking of calibration strips

(1) Calibrations shall be marked on calibration strips as follows, namely–

(a) in the case of a calibration indicating 1m3 or a multiple thereof, by horizontal milled recesses at least 3mm wide cut across the full width of both the tapered sides of the strip.

(b) in the case of a calibration indicating any other quantity by such a recess cut across the full width of the front of the strip.

(2) The said recesses shall be so cut that the lower edges to the corresponding recesses on the pair of strips are in the same horizontal plane and indicate the quantity held by the measure when filled level with those lower edges.

(3) There shall be cut into every calibration strip between the marks indicating a whole number of cubic metre a figure or figures indicating the number thereof and no such figure shall be less than 20mm. high or cut less than 2mm. into the strip.

(4) Every calibration strip shall bear an indication of the distance from the bottom of the measure immediately below the strip to the indication of the purported maximum content and such indication shall comprise the letters "MAX" followed by figures indicating the distance in centimetres and the letters "cm" marked in the manner illustrated in the Second Schedule.

PART V

MARKING (reg 11)

11. Marking

(1) Every prescribed measure shall have its purported maximum content a durable and conspicuous marking upon the exterior of one of its sides and where the measures forms part of a vehicle the marking shall be on the near side.

(2) The marking shall be upon a plain background in a colour which is in distinct contrast to the background and shall comprise the number of units expressed in figures and an indication of the units of measurement.

(3) Units of measurement shall be marked in full or by the symbol "m3".

(4) The characters employed in marking shall be at least 25mm. high and 10mm. wide, but the symbol "m3" shall not be regarded for the purpose of this subregulation as forming more than one character.

PART VI

TESTING AND STAMPING (regs 12-15)

12. Testing

(1) A prescribed measure shall only be tested if it is clean and complete.

(2) A prescribed measure shall be tested–

(a) by calculation based on the internal measurements; or

(b) by transferring chippings or similar material from a brim measure, the volume of which has been ascertained by calculation; or

(c) by a combination of these methods.

(3) The accuracy of all calibrations on a calibrated measure shall be tested.

(4) A presented measures shall not be passed as fit for use for trade if–

(a) it bears any mark which might erroneously be regarded as a calibration mark or as an assizer's stamp; or

(b) it does not comply with any other relevant requirement of these Regulations; or

(c) in the case of a measure of an approved pattern, it does not conform with the pattern; or

(d) it is not within the prescribed limits of error.

13. Prescribed limits of error

The prescribed limits of error of measure, shall be as follows–

Purported indication of quantity	Limit of error (in excess only)
0.02m3	500ml
0.2m3, 0.5m3, 0.5m3 or 0.6m3	0.025m3
Any quantity exceeding 0.6m3	0.008 cubic metre for each 0.2m3 of the indicated quantity

14. Stamping

(1) A prescribed measure of an approved pattern shall be stamped in any manner envisaged in the pattern.

(2) Except where subregulation (1) applies, a prescribed measure shall be stamped on the lead filling of each of the sealing boxes or, if brim measures, shall be stamped or branded as appropriate on the outside near the brim above or below the indication of content.

15. Obliteration of stamps

(1) Where a prescribed measure–

(a) upon testing fails to fall within the prescribed limits or error; or

(b) appears to have been so altered, adjusted or repaired that its accuracy is likely to have been affected; or

(c) does not comply with the relevant requirements of these Regulations; or

(d) by reason of any alteration or addition since it was last stamped is such that it could not be passed as fit for use for trade an Assizer shall obliterate the stamp on the measure by superimposing thereon with pincers or punch a design in the form of a six-pointed star, or, if the nature or degree of non-compliance does not warrant this course, serve on the person using the measure for trade a notice requiring him to take steps to ensure that it does comply before the expiry of such period, not exceeding 28 days, as may be specified in the notice.

(2) Where any notice given under subregulation (1) is not duly complied with, the Assizer shall obliterate the stamp on the relevant measure.

SCHEDULE

SYMBOLS AND ABBREVIATIONS

Cubic metre m3

Centimetre ..... cm

Millimetre ..... mm

Calibration strips

(a) Only if 4m3 or over

(b) Obligatory under 4m3

Sealing boxes

(a) General view of the box

=

(b) Cross section of a sealing box showing the nut and bolt securing the box

(Section 54)

G.N. No. 535 of 1998

1. Citation

These Regulations may be cited as the Weights and Measures (Packed Goods) Regulations.

2. Interpretation

In these Regulations, the expression–

"destructive test" means a test which as a result of that test, the package on which it is carried out cannot thereafter be used for the purpose for which they were made up, and "non-destructive test" shall be construed accordingly;

"label" means any written, printed or graphic matter affixed to, applied to, attached to, blown into, formed or moulded into, embossed on, or appearing upon a package containing any product for purpose of branding, identifying,or giving any information with respect to the product or the content of the package; however an inspector's tag or non-promotional text affixed to or appearing upon a product shall not be deemed to be a label that requires the label information prescribed by these Regulations;

"lot" or "batch" means in case of packages which have been stored, where the total number of such packages does not exceed 100, all those packages, and where the total exceeds 100 but not exceeding 10,000 all the packages of the same type and of the same production run, and in the case of the packages which are on or at the end of packing line, the maximum hourly output of packages;

"net" or "net content" means the quantity of commodity in the package exclusive of wrappers and any other material packed with such commodity and in these Regulations this term is designated by the symbol "an";

"pre-packed goods" with its grammatical; and cognate expression, means goods which, without the purchaser being present are placed in a package of whatever nature, so that the quantity of the product contained there in has a predetermined value and that value cannot be altered without the package or its lid or cap, as the case may be, being opened or undergoing a perceptible modification;

"principal display panel" means that part of a package that is most likely to be displayed, presented, shown, or examined under normal and customary conditions of display;

"quantity" in relation to goods contained in package, means the quantity by weight, measure or number of the goods contained in the package.

3. Metrological requirements for packages

Any goods ready for sale shall have the following requirements, namely–

(a) the average net content conveyed by any lot of packed goods available for inspection shall equal or exceed the net content as declared on the package;

(b) the declaration of net content shall accurately reveal the quantity meant to be in the package.

4. Identity of product

The package of a product shall be marked–

(a) by what is inside and shall contain what is marked;

(b) in the common or usual name of the product; or

(c) in the generic name or other appropriate descriptive name.

5. Label

(1) The label of a prepacked product shall–

(a) specify conspicuously the name and place of business of the manufacturer, packer, distributor or importer;

(b) where the product is not manufactured or packed by the person whose name appears on the label, the name on the label shall reveal the connection that name has with the product;

(c) indicate the month and year in which the goods were manufactured or pre-packed.

6. Declared net quantity of packed product

(1) A pre-packed product shall bear a declaration of the net quantity of the product on the principal panel.

(2) The net quantity shall be expressed in terms of the largest whole unit of mass, volume, length, or a combination of such mass, volume, length and area as specified in Tables 1A, and 1B.

(3) Net quantity of a product packed in a container designed to deliver the product under pressure, shall be expressed in kilogram, gram or milligram that will be expelled when the instruction of use is followed.

(4) A statement of quantity in terms of count shall be expressed in whole numbers.

7. Presentation of information

(1) Statement of quantity less than whole numbers may contain decimal fractions to no more than three places, except where–

(a) quantities below 100g, 100ml, 100 cm^2 or 100 cm may be shown to two figures;

(b) any final zero to the right of decimal marks need not be expressed;

(c) if the quantity is less than one, it shall be shown in decimal system with zero preceding the decimal mark but statements such as "half kilogram" are not permitted and the expiry date.

(2) Statement of net quantity shall–

(a) appear in easily legible bold face type or print that contrasts conspicuously with the background and with other information on the package;

(b) be in letters and numerals in minimum type size established in relationship to either the area of the principal display panel of the package or the package or the contents as specified in Tables IIA and IIB.

8. Misleading practices

(1) A package shall be filled in such a manner that a purchaser is not misled with respect to the quantity of the product it contains.

(2) A package shall be manufactured, constructed or displayed in such a manner that a purchaser is not misled with respect to the quantity of product contained.

9. Selection of samples of packages

(1) The sample size used for determining the net quantity of any goods in a package shall be such as specified in column 2 of Table IIIA.

(2) Where for the determination of net quantity of any goods contained in a package, it is necessary to take samples of packages stored by the manufacturer or packer in warehouse, godown or any other place, the sample shall be selected at random, from every batch of packages and shall be picked out from the top, bottom, centre, right, left, front and rear of the stock for adequate representation of packages in a batch.

(3) Where for the determination of net quantity of any goods contained in a package,it is necessary to take samples from the place where the package is filled, the sample shall be selected from among packages which have already been filled.

10. Approval of batches

A batch of packages shall be approved for sale if after testing it is found that–

(a) the statistical average of the net quantity contained in a sample packages is equal to or more than, the quantity declared on the packages as shown in the formula below:

$$X > Qn - KS$$

Where: X - is the statistical average of the drawn sample;

Qn - is the quantity declared on a package;

K - is the normal distribution factor given in column 2 of table IIIB corresponding sample size;

S - is the standard deviation of the sample;

and if x is the measured value of the actual contents of i - the package and n is the number of packages in the sample, then–

(i) the average, X, of the measured values in the sample is obtained by the following calculation–

(ii) the estimated value of the standard deviation, s, is obtained by the following calculations–

A. first by determining the sum of the squares of the measured values:

B. then by determining square of the sum of the measured values:

C. then by dividing (2) by the number of packages in the sample:

D. then by obtaining the corrected sum by subtracting (3) from (1):

E. then by obtaining the value of the estimated variance by dividing the corrected sum by n -1:

F. then by calculating the square root of the estimated variance to give the estimated value of the standard deviation, s:

(b) the number of packages, showing an error, in deficiency greater than permissible error is not more than the corresponding number specified in column 3 of Table IIIb;

(c) the extent of error in deficiency in none of such sample packages exceeds twice the maximum permissible error;

(d) each package in a batch bears a label affixed thereon bearing the declaration required to be made as under these Regulations.

11. Action to be taken on completion of examination of packages

(1) An Assizer shall enter in the form set out in Table IV the results of the test carried out by him and shall obtain, on the said form, the signature of the manufacturer or of the packer, or his authorised agent and in the absence of both, or on refusal to affix such signature of a competent witness, a copy of the sheet containing result shall be given to the manufacturer or packer, as the case may be.

(2) The Assizer shall seize in accordance with the provision of the Act, the packages drawn by him as samples and shall take adequate steps for the safe custody of the seized packages until they are produced in the appropriate court as evidence.

(3) The disposal of the seized packages shall be made in accordance with the provisions of the Criminal Procedure Act.

(4) If, on the determination of quantity contained in a sample packages, the Assizer finds that the quantity contained in a package agrees with the statement of quantity contained made on the package or label but a package is deceptive, he shall require the manufacturer or packer as the case may be, to re-pack and re-label the package and in the event of omission or failure on the part of the manufacturer or packer, to so re-pack and re-label the deceptive package, in accordance to the required standards it shall be an offence under these Regulations.

(5) If the seized packages contain any goods which are subject to speedy or natural decay, the Assizer shall dispose of the goods in accordance with the rules made under the Act.

12. Penalty

Any person who contravenes the provision of regulation 11, or tampers with, or obliterates or alters any statement made on any package commits an offence and is liable on conviction in the case of first offence to a fine of not less than one hundred thousand shillings or to imprisonment for a term of three years or to both that fine and imprisonment, and in case of a second or subsequent offence to a fine of not less than five hundred thousand shillings or for imprisonment for a term not exceeding seven years or to both that fine and imprisonment.

TABLES

TABLE IA

UNITS OF MEASUREMENTS

Unit	Symbol
milligram	mg
gram	g
kilogram	kg
tonne	t
litre	L or l
millilitre	ml or mL
micrometre	Mm
millimetre	mm
centimetre	cm
decimetre	dm
metre	m
square millimetre	mm^2
square centimetre	cm^2
square decimetre	dm^2
square metre	m^2
cubic metre	m^3
cubic centimetre	cm^3
cubic decimetre	dm^3
cubic metre	m^3

(a) Neither a period nor the letter "s" should be used after any of the symbols.

(b) A single space should be used to separate the number from the unit of measurement.

TABLE IB

CHOICE OF UNIT

Type of measure	Net quantity of products (q)	Units
Volume (liquids)	£1000 ml	³1000 ml
		mL or ml
		L or l
Volume Cubic (solids)	£1000 cm3 (1 dm3	
	1 dm3 <q< 1000 dm3	
	1000 dm3 £ q	cm3, ml
		dm3, L (l)
		m3
Mass	<1g	
	1g< q <100g	
	1000g £ g	mg
		g
		kg
Length	q<1mm	
	1mm £ q < 100cm	
	100 cm £ q	mm
		mm or cm
		m
Area	<100cm2 (1dm2)	

1 dm2 £ 100 d dm2

(1m2) mm2

dm2

m2

TABLE IIA

MINIMUM HEIGHT OF NUMBERS AND LETTERS

Area of principal display panel in cm Minimum height of numbers and letters in mm Minimum height labelled information blown, formed or moulded on a surface on container in mm

£ 32 1.6 3.2

> 32 £ 161 3.2 4.8

> 161 £ 645 4.8 6.4

> 645 £ 2581 6.4 7.9

> 2581 12.7 14.3

TABLE IIB

MINIMUM HEIGHT OF NUMBERS AND LETTERS

Net contents Minimum height of numbers

and letters in mm

£ 50g or 50 ml 2

< 200g or (ml) 3

> 200g (ml) £ 1 kg(1) 4

> 1kg (or L) 6

TABLE IIIA

MINIMUM NUMBER OF SAMPLE SIZE

BATCH SIZE	SAMPLE (n)
< 100	100
> 100 - 500	50
> 501 -3200	80
>3201	125

TABLE IIIB

RELATIONSHIP BETWEEN SAMPLE SIZE K-FACTOR AND ACCEPTANCE NUMBER

SAMPLE	K-Factor	ACCEPTANCE NUMBER OF PACKAGES SHOWING MORE THAN MAXIMUM PERMISSIBLE ERROR (C)
50	0.379	3
80	0.295	5
125	0.234	7

TABLE IIIC

ACCEPTABLE INDIVIDUAL DEFICIENCIES

NOMINAL NET CONTENT	TOLERABLE DEFICIENCY T	
g or ml	PERCENT OF Qn	g or ml
5 to 50	9	-
50 to 100	-	4.5
100 to 200	4.5	-

200 to 300	-	9.0
300 to 500	3	-
500 to 1000	1.5	15
1000 to 10000	1.5	-
10000 to 15000	-	150
15000 to 25000	1.0	-

TABLE IV

PRE-PACKED INSPECTION FORM

Weight/measure checking Data Sheet

A. Particulars of Package Name of manufacturer or packer

.....

Address .....

.....

.....

Month/Year ..... Batch Size ..... Price .....

B. Commodity

Name of commodity/product .....

Sample Size .....

C. Sample No.

Gross weight/measure

..... Tare weight/measure

.....

D. Weight/measure Checking

1.

2.

3.

4.

E. Results

Average weight/measure ..... Declared weight/measure

Maximum permissible error .....

Number of packages showing error in deficiency .....

F. General comments with regard to the compliance with the Act and the Regulations made thereunder .....

.....

.....

G. Signature and Name of Manufacturer/ Packer/Owner or any competent witness

..... Signature and Name

of the Assizer

.....

Date: .....

Time: .....