Test Report of the Test Unit.....to specify the name.....

who is a person carrying out the test on the prototype of the non-automatic weighing instrument (an analog self - indicating type and a non - self - indicating type)

Trademark.....

Model .....**Capacity Range** ..... **Detailed Value**.....

❍ the Prototype of a weighing instrument with a weighing platform having a round dial

❍ the Prototype of a weighing instrument with two equal arms

❍ the Prototype of a Roberbal balance and a Beurer balance

❍ the Prototype of a steelyard balance

❍ the Prototype of a weighing instrument with a weighing platform having a counterweight

❍ the Prototype of a weighing instrument with a weighing platform having a sliding weight

Table 1 Result of Visual Inspection

No.	Characteristics of Prototype of Non-Automatic Weighing Instrument (an analog self - indicating type and a non - self –indicating type)	Result of Inspection (to mark ✓ or ✘ in the case of inaccuracy, please explain details)		
		Accuracy	Inaccuracy	Details (please specify)
1	It is required to be produced permanently and not be simply used as a tool of fraud. All weighing instruments shall be made from good materials. It is required to be designed and made in the manner that when the weighing instruments are used as usual, they can always operate accurately. The components of the weighing instruments can operate continuously without defect, bend or deformation, which affects the accuracy of the weighing instruments. In the case of adjusting the weighing instruments, the adjusted instruments are required to maintain the condition of accuracy appropriately.			
2	The following details shall be indicated on the instrument. Such details shall be made legible, clear and indelible. (1) the name or trademark of a manufacturer or an importer			

No.	Characteristics of Prototype of Non-Automatic Weighing Instrument (an analog self - indicating type and a non - self –indicating type)	Result of Inspection (to mark ✓ or ✖ in the case of inaccuracy, please explain details)		
		Accuracy	Inaccuracy	Details (please specify)
	(2) the model which is specified the form of an instrument			
3	A capacity range of a weighing instrument shall be indicated in a clear and indelible manner.			
4	In providing an indication whether to combine numbers with alphabets or other symbols or not, it is required not to cause confusion in reading values.			
5	A scale mark and an indicating device shall be designed in a proper manner and be able to cooperate.			
6	Scale marks, numbers, alphabets or other symbols shall be legible, clear and indelible.			
7	If there are many places of an indicating device, every place shall indicate the same value.			
8	In indicating the result of weighing, (a) an indicating device shall indicate the name or symbol of a unit of weighing, (b) the principal scale marks shall indicate a value of 1×10^k or 2×10^k or 5×10^k whereby k is a positive integer, a negative integer, or zero.			
9	An analog indicating device (a) The width of a scale mark shall not be larger than a space between scale marks. (b) A value pointer shall have an approximate width to be equal to the width of a scale mark. (c) The distance from the value pointer to the plane of the scale mark shall not exceed 2 millimetres. (d) The value pointer shall be long as much as half of the shortest scale mark.			
10	As for weighing instrument that has an equivalent device in the manner of using two balance pointers pointing in the same direction, such balance pointers shall have the same thickness. And the distance shall not be more than the thickness of the balance pointer. In the case where the balance pointer has			

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		Accuracy	Inaccuracy	Details (please specify)
	the thickness of less than 1 millimetre, the distance shall not be more than 1 millimetre.			
11	In the case where a weighing instrument has a printing device, the printing device shall print only when a carriage or a sliding weight or a mechanism used for changing a load is at a position which corresponds to the integer of a scale mark interval.			
12	A knife edge (a) The knife edge shall be fixed to a lever. (b) The knife edge shall be made sharp, solid and fitted in every part that is required to hit with the knife edge. (c) A knife-edge receptacle shall be made smooth and solid at least the same as a knife edge. (d) The knife edge and the knife-edge receptacle shall be made in the manner that upon placing an object on a weighing platform equal to half of the maximum capacity range, when the knife edge or the knife-edge receptacle is slid to a proper direction, the accuracy of an instrument shall not be adversely affected. (e) In the case where the weighing instrument has a bar to prevent the knife edge from sliding towards a length path, a part of the bar that is likely to touch the knife edge shall be made smooth and solid at least the same as the knife edge and touch the knife edge least.			
13	A scale mark (a) The scale mark on a balance beam shall be made in the form of either line or notch or both. The line shall have the same and parallel distance. The notch shall be cut evenly. And the notch shall have the same and parallel distance. In the case of having both line and notch, the line shall be in order with the notch to indicate a notch rate clearly and accurately.			

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		Accuracy	Inaccuracy	Details (please specify)
	(b) The scale mark and the distance between two scale marks on a balance beam and on a weight- rate indicator shall be made in a clear, legible and indelible manner.			
14	A balance beam (a) As for the balance beam that uses a sliding weight, every principal scale mark shall indicate a weight rate. (b) Every balance beam shall have a bar to prevent the sliding weight from too much sliding from the scale mark at the value of zero. (c) As for a device fixed at the end of the balance beam to prevent the sliding weight from sliding out of the balance beam, it shall be fixed to the balance beam firmly. (d) The balance beam shall have the manner that upon descending it to the end, the balance beam shall be back to its previous position automatically. (e) Under the normal circumstances, the balance beam shall be in equilibrium and if it swings, both arms of the beam shall swing proportionately.			
15	A sliding weight (a) As for the sliding weight for using with a balance beam which a scale mark is a notch, there shall be a device clung to a groove in order that the sliding weight shall be at a right position and be clung tightly. (b) As for the sliding weight in a hanging type, a part that touches the balance beam shall be made sharp, solid and shall have the manner that makes the sliding weight swing easily. (c) The sliding weight shall be able to slide conveniently, and shall not make the scale mark and the notch on the balance beam indelible or deteriorate.			

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		Accuracy	Inaccuracy	Details (please specify)
	(d) The sliding weight shall be made in the manner that it cannot be detachable easily. And there shall be no gap on the slide weight. (e) The sliding weight shall be made in the manner that it cannot be removed from the balance beam easily.			
	(f) The sliding weight and a hook shall be made in the manner that it remains with a weighing instrument firmly. (g) A rim for indicating a weight rate or a pointer of the weight rate shall be made in a sharp manner. And the rim for indicating the weight rate shall be parallel to the scale mark on the balance beam.			
16	A counterweight (a) Every counterweight that is used with any weighing instrument shall have a mark on the weight to show that such weight is used with such instrument. The aforesaid mark shall be indelible. And the aforesaid weight also shows that it shall be used for representing what weight. (b) The form of the counterweight shall be made different from that of a general weight.			
17	As for a sliding weight and a counterweight, if there is a hole for placing an object to make the weights to correspond to a rate, there shall be only one hole. The object as used for accuracy in the sliding weight and the counterweight shall always be placed and closed tightly.			
18	As for any weighing instrument that has a device to change or reverse a direction to use, such device shall have the manner that the change or the reverse shall not adversely affect the accuracy of the weighing instrument.			

No.	Characteristics of Prototype of Non-Automatic Weighing Instrument (an analog self - indicating type and a non - self –indicating type)	Result of Inspection (to mark ✓ or ✖ in the case of inaccuracy, please explain details)		
		Accuracy	Inaccuracy	Details (please specify)
19	As for any weighing instrument that has a removable device, such removal shall not adversely affect the accuracy of the weighing instrument, excepting the weighing instrument that cannot be used to weigh an object at all if any removal of the device is made.			
20	As for any weighing instrument that has a device which can improve the accuracy of the weighing instrument, such device shall always be fixed and cannot be easily modified.			
21	A weighing instrument with two equal arms (an equal-arm balance or a two-pan balance) (a) The weighing instrument with two equal arms is the weighing instrument that has two arms of a balance beam extending from a fulcrum and two weighing pans are suspended beneath the balance beam. (b) The pan lanyards of the weighing instrument shall be made of metal or other materials which have already been examined by the Central Bureau to be similarly qualified.			
22	A Roberbal balance and a Beurer balance (a) The Roberbal balance and the Beurer balance are the weighing instrument that has two arms of a balance beam extending from a fulcrum, whereby two weighing pans or platforms are above the balance beam. (b) In the case of the balance beam or the body of the weighing instrument being in a twin type, there shall be at least two strong bars to support the weighing pans. A center column shall not be twisted or moved from its position. The parts of a holder, a hook and a hoop that touch other parts of the weighing instrument shall be made of a solid metal, quartz or other materials which have already been examined by the Central Bureau to be similarly qualified.			

No.	Characteristics of Prototype of Non-Automatic Weighing Instrument (an analog self - indicating type and a non - self –indicating type)	Result of Inspection (to mark ✓ or ✖ in the case of inaccuracy, please explain details)		
		Accuracy	Inaccuracy	Details (please specify)
	(c) In the case where the weighing instrument is made accuracy by using balancing boxes, such balancing boxes shall be fixed under the weighing pans. And such balancing boxes shall have a capacity to contain an object that can make accuracy not exceeding one percent of the maximum capacity range of such weighing instrument. And such balancing boxes shall be put or detached by using a tool. (d) The weighing pans or platforms shall be made of metal, a solid object or other materials which have already been examined by the Central Bureau to be similarly qualified. And the weighing pans are prohibited from coloring.			
23	A steelyard balance (a) The steelyard balance is the weighing instrument whereby a fulcrum is very close to one end of a balance beam. The shorter arm of the balance beam hangs a receptacle for the object to be weighed regardless of whether it is a tray or a hook, and the longer arm has scale marks and a counterweight to indicate a weight rate. When to use for weighing, the weighing instrument shall be hung or fixed to other object above the weighing instrument which is not a part of the weighing instrument. (b) The balance beam shall be made of metal or other materials which have already been examined by the Central Bureau to be similarly qualified. And the long side of the balance beam shall be straight. (c) Scale marks in the type of line or notch on the balance beam which has a capacity range starting at 100 kilograms downwards shall be made on one side to be perpendicular to the balance beam. (d) The steelyard balance shall have a capacity starting at 10 kilograms upwards. And it shall have the scale marks that begin with the zero scale mark.			
24	A weighing instrument with a weighing platform (or a platform scale)			

No.	Characteristics of Prototype of Non-Automatic Weighing Instrument (an analog self - indicating type and a non - self –indicating type)	Result of Inspection (to mark ✓ or ✖ in the case of inaccuracy, please explain details)		
		Accuracy	Inaccuracy	Details (please specify)
	(a) The weighing instrument with a weighing platform is the weighing instrument that has a load receptacle acting as the weighing platform above a load cell. (b) Every part of a balance beam of the weighing instrument shall not be removed easily, except for a counterweight support. (c) In the case where other detachable load receptacle shall be used in place of a general platform, such load receptacle is required to be an important part of the weighing instrument. If there is no such part, the weighing instrument shall not be accurate.			

Inspection Result ☐ **Pass** ☐ **Not Pass**

Criteria for Consideration : All particulars shall be correct.

Doing a calculation to find out about the maximum permissible error of the prototype of the non- automatic weighing instrument (an analog self - indicating type and a non - self - indicating type) by substituting the value of "e" into the specified equations as follows:	
Maximum Permissible Error for Verification	**Mass Used for Testing (m) Which is Indicated in the Unit of Verified Scale Marks (e)**
0.5 x e = ...	Consideration pursuant to Accuracy Class from ..... to .....
1.0 x e = ...	Consideration pursuant to Accuracy Class greater than ..... to .....
1.5 x e = ...	Consideration pursuant to Accuracy Class greater than ..... to .....

Maximum Permissible Error	**Mass Used for Testing (m) Which is Indicated in the Unit of Verified Scale Marks (e)**			
	Class 1	**Class 2**	**Class 3**	**Class 4**
0.5 e	0 to 50,000 (0 ≤ m ≤ 50,000)	from 0 to 5,000 (0 ≤ m ≤ 5,000)	from 0 to 500 (0 ≤ m ≤ 500)	from 0 to 50 (0 ≤ m ≤ 50)
1.0 e	greater than 50,000 to 200,000 (50,000 < m ≤ 200,000)	greater than 5,000 to 20,000 (5,000 < m ≤ 20,000)	greater than 500 to 2,000 (500 < m ≤ 2,000)	greater than 50 to 200 (50 < m ≤ 200)
1.5 e	greater than 200,000 (200,000 < m)	greater than 20,000 to 100,000 (20,000 < m ≤ 100,000)	greater than 2,000 to 10,000 (2,000 < m ≤ 10,000)	greater than 200 to 1,000 (200 < m ≤ 1,000)

Table 2 Result of Weighing Performance Test

It is required to test the following weighing instruments :
(1) a weighing instrument with a weighing platform having a round dial,
(2) a steelyard balance,
(3) a weighing instrument with a weighing platform having a counterweight,
(4) a weighing instrument with a weighing platform having a sliding weight.

Place a Load (L)	Indication (I) ↓	↑	Error Value (E) ↓	↑	Maximum Permissible Error (MPE)
Min					
1/3 Max					
1/2 Max					
2/3 Max					
Max					

Test Result ❑ **Pass** ❑ **Not Pass**

Criteria for Consideration : $E \leq |MPE|$

L (Load) means a weight rate that is used for testing.

I (Indication) means a weight value that is read.

E (Error) = I – L

MPE means the maximum permissible error.

Remark : In the case where a weight rate used for testing is calculated as a decimal number, it shall be rounded to an integer.

Table 3 Result of Discrimination Test

The test shall be carried out for the following weighing instruments :
(1) a weighing instrument with a weighing platform having a round dial,
(2) a steelyard balance,
(3) a weighing instrument with a weighing platform having a counterweight,
(4) a weighing instrument with a weighing platform having a sliding weight.

Load as Tested (L)	Indication (I_1)	Add a Load = |MPE|	Indication (I_2)	$I_2 - I_1$
Min				
1/2 Max				
Max				

Test Result ❑ **Pass** ❑ **Not Pass**

Criteria for Consideration : $I_2 - I_1 \geq 0.7$ MPE

L (Load) means a weight rate that is used for testing.

I_1 and I_2 (Indication) means a weight value that is read before or after adding the load.

Remark : In the case where a weight rate used for testing is calculated as a decimal number, it shall be rounded to an integer.

Table 4 Result of Sensitivity Test

The test shall be carried out for the following weighing instruments :
(1) a weighing instrument with two equal arms,
(2) a Roberbal balance and a Beurer balance.

Load as Tested (L)	**Add a Load = |MPE|**	**a pointer moving away from an original equilibrium condition by a distance**
Min		millimetres
1/2 Max		millimetres
Max		millimetres

Test Result ❑ **Pass** ❑ **Not Pass**

Criteria for Consideration : A pointer shall move away from an original equilibrium condition by a distance of not less than

1 millimetre for a weighing instrument with an accuracy class 1 or 2,

2 millimetres for a weighing instrument with an accuracy class 3 or 4 and the maximum capacity range of not exceeding 30 kilograms,

5 millimetres for a weighing instrument with an accuracy class 3 or 4 and the maximum capacity range of exceeding 30 kilograms.

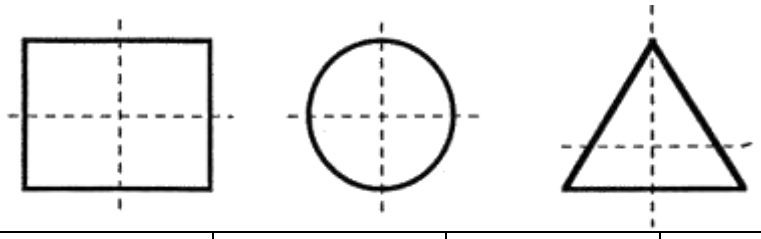
L (Load) means a weight rate that is used for testing.

Remark : In the case where a weight rate used for testing is calculated as a decimal number, it shall be rounded to an integer.

Table 5 Result of Eccentricity Test

The test shall be carried out for the following weighing instruments :
(1) a weighing instrument with a weighing platform having a round dial,
(2) a Roberbal balance and a Beurer balance,
(3) a steelyard balance,
(4) a weighing instrument with a weighing platform having a counterweight,
(5) a weighing instrument with a weighing platform having a sliding weight.

1	2
4	3



Position	Load as Tested (L)	Indication (I)	Error (E)	(MPE)
1	1/3 Max =.....kg			
2				
3				
4				

Test Result ❑ **Pass** ❑ **Not Pass**

Criteria for Consideration: $|E| \leq |MPE|$ และ $E_{max} - E_{min} \leq |MPE|$

L (Load) means a weight rate that is used for testing.

I (Indication) a weight value that is read.

E (Error) = I – L

MPE means the maximum permissible error.

Remark : In the case where a weight rate used for testing is calculated as a decimal number, it shall be rounded to an integer.

Table 6 Result of Repeatability Test

The test shall be carried out for the following weighing instruments :
(1) a weighing instrument with a weighing platform having a round dial,
(2) a steelyard balance,
(3) a weighing instrument with a weighing platform having a counterweight,
(4) a weighing instrument with a weighing platform having a sliding weight.

Load as Tested (L) = 1/2 Max **Load as Tested (L) = Max**

= ..... **= .....**

No.	Indication (I)	Error (E)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
	$E_{max} - E_{min}$	
	MPE	

No.	Indication (I)	Error (E)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
	$E_{max} - E_{min}$	
	MPE	

Test Result ❑ **Pass** ❑ **Not Pass**

Criteria for Consideration: $E \leq MPE$ and $E_{max} - E_{min} \leq |MPE|$

L (Load) means a weight rate that is used for testing.

I (Indication) means a weight value that is read.

E (Error) = I – L

MPE means the maximum permissible error.

Remark : In the case where a weight rate used for testing is calculated as a decimal number, it shall be rounded to an integer.

Table 7 Summary of Test Result

No.	Checklist of Testing	Test Result		Remark
		Pass	Not Pass	
1	Result of Visual Inspection			
2	Result of Weighing Performance Test			
3	Result of Discrimination Test			
4	Result of Sensitivity Test			
5	Result of Eccentricity Test			
6	Result of Repeatability Test			

I hereby certify that the aforementioned test results are correct and true in all respects.

(Signed).....Tester

(.....)

Position .....

Date ..... Month ..... B.E. .....

(Signed).....Authorized person to bind a juristic person

(a juristic person's seal to be stamped (if any)) (.....)

Position.....

Date ..... Month ..... B.E.....