General Information Concerning the Type

Application No		
Model & Capacity		
Type designation		
Manufacturer		
Applicant		
Start date of Testing	Initial Testing	After Initial
End Date of Testing		

1.0 General Markings

1. Confirm the scale model with the application and the manufacturer letter. Confirmed /Not confirmed
2. General design (Enclosure, Platter strength, Display visibility, Key board durability etc...) Comply/ Not Comply
3. Leveling indicator easily visible (or for visibility needed removing any parts) Comply/ Not Comply
4. Platform size/ Platter size complies with load cell specification Comply/ Not Comply

   ****If* ***the recommended platform size*** *not mentioned in the* ***load cell specification*** *a letter with extended specifications shall be submitted from the manufacturer for the load cell.*

5. ***Compulsory markings in all cases***

   - **Manufacturer's Mark or name** written in full ----------
   - Indication of **accuracy class** in the form of a **Roman number in an oval**

     I ☐ II ☐ III ☐ IIII ☐
   - **Maximum capacity** in the form Max ----------
   - **Minimum capacity** in the form Min ----------
   - **Verification Scale interval** in the form e=

6. Compulsory if applicable
   - Name or mark of **manufacture's agent**

   - **Serial No.** ----------
   - Pattern Approval mark or **certificate no (should be allocate in the markings plate)**

Tested by: ----------(Please written name) Checked by: ----------

- Scale interval, if d<e d=
- Maximum additive tare effect T=+
- Maximum subtractive tare effect if different from Max, T= -
- The special temperature limits

(Within which the instrument complies with the prescribed conditions of correct operation)

----------^{0}C ----------^{0}-C

7. Additional Markings

example

- Not to be used for direct sales to the public/commercial transactions

8. Presentation of descriptive markings
   - Shall be **indelible and of a size, shape and clarity** allowing easy readings.
   - They **shall be grouped together in a clearly visible places** either on a plate or sticker fixed permanently to the instrument, or
   - On a non-removable part of the instrument itself.
   - In case of a plate or sticker which is not destroyed when removed, a means of securing shall be provided.

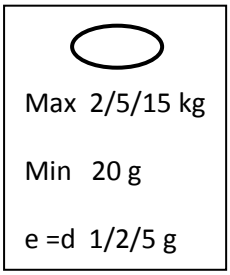
2.1 Units of measurement

The units of mass to be used on an instrument are

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

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

Model



Model

Comply ☐ **Not Comply** ☐

Tested by: ----------(Please written name) Checked by: ----------

9. Dimensions of the letters
    I. **The height of the capital letters** should be at least 2mm
    letter dimension ----------mm

10. Fixing

    The **marking plates should be fixed** by rivets or screws. **Passed** ☐ **Failed** ☐

11. Verification marks

    Position

    Cannot be removed without changing the metrological qualities of the instrument, in a clearly visible place Stamping area at least **150 mm²** or diameter of at **least 15 mm for self-adhesive sticker, Durability of stamp**

    Passed ☐ **Failed** ☐

12. **Warm up Time: ----------** (If mentioned in the operation manual it should be mark on the markings plate)
13. **Check energy saving feature.** (**at least one digit should be appeared**) Available / Not available
14. Check Indicators:
    Stable Available / Not available
    Zero Available / Not available
    Tare Available / Not available
    Low battery Available / Not available
    AC Available / Not available

15. **For platform scale:** Platform Size (should be check departmental regulation Annex B-R76-1 – Platform Sizes for Non-Automatic Weighing Scales (OIML R76 – Class III)

    ---------- mm Comply / Not Comply

Tested by: ----------(Please written name) Checked by: ----------

2.0 Classification of the scale

Accuracy Class	Verification Scale Interval, e	Number of verification scale intervals, n=Max/e		Minimum Capacity, Min (Lower Limit)
		minimum	maximum	
Special (I)	0.001g ≤ e*	50 000	-	100 e
High (II)	0.001g ≤ e ≤ 0.05g 0.1g ≤ e	100 5000	100 000 100 000	20 e 50 e
Medium (III)	0.1g ≤ e ≤ 2g 5g ≤ e	100 500	10 000 10 000	20 e 20 e
Ordinary (IIII)	5g ≤ e	100	1 000	10 e

Check the **Class** and **Min** value using above table

a) Single Range Instrument

Number of verification intervals n= Max/e

n=

Class……. Min…….

Remarks:

b) Multi interval Instrument

Check the Class and Min value using above table considering the verification interval (e1) of lowest range Select
Number of verification intervals n= Max/e; calculate this for each weighing interval

Eg: Max 6/15 kg, e=2/5 g
n1=max1/e1
n2=max2/e2

Interval 1: Class……. Min…….

Interval 2 : Class……. Min…….

Shall be in same accuracy class

Remarks:

Passed ☐ **Failed** ☐

Tested by: ----------(Please written name) Checked by: ----------

3.0 Component Comply with Manufacturer Document

Disassemble the scale and check with manufacturer letter, other documents and Circuit diagram

Component	Description (ID / Serial No / Other)		Comply	Not Comply
	Submitted details in document	Verification details of model		
Mother Board				
Main processor				
Front Display	Not necessary in document			
Rear Display	Not necessary in document			
IF Pole Display				
Front Display	Not necessary in document			
Rear Display	Not necessary in document			
LCD or LED	(Please refer operation manual)			
Font Colour	(Please refer operation manual)			
Font Height	(Please refer manual)			
Key Board	Not necessary in document			
Communication Board	Not necessary in document			
Printing board	Not necessary in document			
Other boards	Not necessary in document			
Load Cell				
Model				
Capacity *				

***(Please check that it matches with the scale** capacity) or (More than or equal dead weight + scale capacity) or (less than or equal 2 times the scale capacity)

Tested by: ----------(Please written name) Checked by: ----------

Component	Description (ID / Serial No / Other)		Comply	Not Comply
	Submitted details in document	Verification details of model		
Class				
Serial No or Nos.				
Platter size *Please check that it matches with load cell specification				
No of Load Cells				
Manufacturer				
What is Engraved? Please written				
OIML Certificate No				
Project No (If applicable)				
Interfaces (Identification and functions)				
Battery Details (Model, type, voltage, capacity)				
Firmware and Software version, Software developer, owner/user with licenses				
Connected Equipment				

Tested by: ----------(Please written name) Checked by: ----------

4.0 General Functions

- **Calibrate the Scale with given procedure**

Remarks : ----------

I. MAXIMUM VALUE

*Keep the Maximum Weight

Max =

Max+9e =

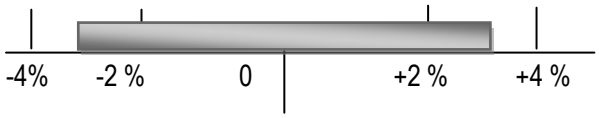
Max+10e =

Passed ☐ **Failed** ☐

II. ZERO TEST

***2 % of the Maximum Weight = Max×2% =**

***4 % of the maximum Weight = Max×4% =**



- ***Initial Zero Setting (with on/off Switch)***

  \+ Side - Side

- ***Semi Zero Setting (with Zero Button)***

  \+ Side - Side

- ***Combine Zero setting***

a. Keep initial Zero value and press on/off switch.
b. then keep semi zero value and press ZERO button.
c. Unload all weights and if the minus values displayed when the weights are removed.
d. Check whether the minus value can be removed by Zero key. It should not be possible.
e. Then press ON/OFF switch.

+ Side			***- Side***		
Initial value	+	Semi zero value	Initial value	+	Semi zero value

Please check

- *The minus value obtained after removing all the weights should not be removed by the zero key.*
- *Then Put the weights (initial zero range + semi zero range) on the platter and turn off the scale and then turn on the scale.*
- *Then display an error message.*
- *Then remove the weights one by one. Now the error message should be displayed until all weights are removed.*

Passed ☐ **Failed** ☐

III. TARE VALUE

Tare: _____ (Written Tare Value indicated in the scale) Additive Tare / Subtractive Tare

- After Tared should be checked whether Tare value can be removed by Zero key.

PASS / FAIL

- *Should be checked one-time Tare. (Place a weight on the platter and press Tare button. Then without removing it, another weight is added to the platter and press Tare value)*

PASS / FAIL

- *should be checked whether (-) values can be Tarred by the tare key*

PASS / FAIL

- *After Tared Maximum Tare Value and check remaining weight can be weighed.*

.

PASS / FAIL

Passed ☐ **Failed** ☐

Tested by: ----------(Please written name) Checked by: ----------

IV. DISCRIMINATION TEST

	Load+10 (1/10d)	Indication I_1	Removed load ΔL	Indication	Add 1/10 d	Indicatio n	Extra load 1.4d	Indication I_2	(I_2-I_1)
Min =									
½ Max=									
Max=									

Passed ☐ **Failed** ☐

V. PRICE COMPUTING ADD FUNCTION

Price addition **shall not be possible** without unloading and reloading the weighing scale completely after stable at zero before weighing for addition

Passed ☐ **Failed** ☐

VI. If it is **price computing scale** according to operation manual, the activities of the keys should be checked and the unnecessary keys should be checked

Remarks : ----------

VII WEIGHING SCALE WITH SOFTWARE

install the software on the PC and follow the software manual.

Special attention to the following points

- All functions related to the scale for changing calibration parameters and effected to weighing results shall be possible to change only through removing the security seal or internal jumper access restricted by security seal or and admin password.
- All functions other functions not specified below shall be possible to change only through admin password.
- Only PLU data can be done through user password. PLU data can be feed via USB, Manually or Ethernet cable.
- PRESET TARE, PSC, QTY and ADD function should not be work with software.
- User can only add PLU codes
- The specification of the scale cannot be changed through the software. Ex. SI Units, zero range, e…… without removing the security seal or internal jumper secured by security seal
- Unnecessary function keys and programmed keys are removed through the software or should be internally sealed.
- Unwanted keys for weighing scales for direct sale should be disabled.

- Only one person can trade at a time. Therefore, only one of the keys V1, V2, V3 & V4 (Vendor Identification keys) should be activated if available this function.
- Activities and functions from the Common ports should be checked. (RS232, RJ11, RJ14, Ethernet, Drawer, Printer, ……)
- If a change is made to the software, it should be explained how it was modified
- The date and time shall not possible to change after calibration (without removing security seal or jumper).
- If the calibration done through the jumper, the relevant keys should be set to operate on the inner side.
- If calibration is done through a switch, it should be sealed.
- Access to calibration or other legally controlled functions from the front panel buttons or from interface shall not be permitted without breaking any legally sealable jumper, switch, or other physical method of sealing the enclosure or circuitry.
- Printing is only possible when the stable indicator is on.
- Only one original label shall be printable for one complete weighing with any type of weighing scale if printing function is available. Additional copies of weighing results shall be indicated as "DUPLICATE COPY"
- **Printing format should be as below (Minimum information to be included)**

For Price Labelling or Barcode Scale

Name & Address

Tel. No.

Receipt No

Date Time

Item Code Qty Unit price (Rs/kg) Total (Rs)

Machine No/ Ser No

Software version & Firmware version

For Weighbridges

Name & Address

Tel. No.

Receipt No

Date Time

Company Name :

Item (Optional) :

Vehicle No :

1st weight = kg

2nd weight = kg

Net = kg

Operator code or Name :

Machine No/ Ser No :

Software version & Firmware version

Tested by: ----------(Please written name) Checked by: ----------

Remarks:

5.0 Testing

Calibrate the scale again according to the given procedure and perform following tests.

AC ***DC***

1. WARM-UP TIME

*Keep the Maximum Weight

	Start Time	Unload	Load		Start Time	Unload	Load
0 min				0 min			
5 min				5 min			
15 min				15 min			
30 min				30 min			

Passed ☐ Failed ☐ Passed ☐ Failed ☐

2. REPEATABILITY

***--------- kg (Single weight close to ½ max)**

E = I + 1/2e – ΔL –L ***AC*** ***DC***

	Load	**Indication of load**	**mpe**		**Load**	**Indication of load**	**mpe**
1				1			
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			

Tested by: ----------(Please written name) Checked by: ----------

***---------- kg (Single weight close to Max)**

AC ***DC***

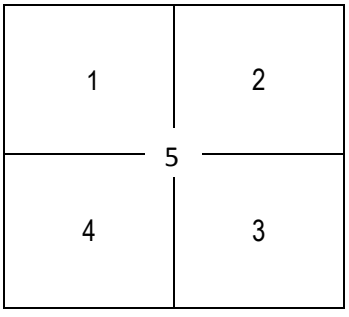
	Load	Indication of load	mpe		Load	Indication of load	mpe
1				1			
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			

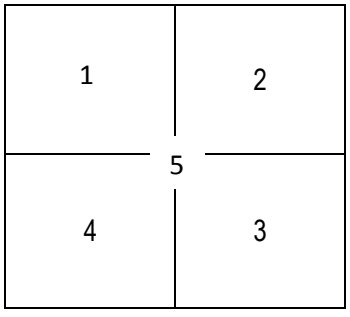
Passed ☐ Failed ☐ Passed ☐ Failed ☐

3. ECCENTRICITY

Applied load: 1/3 of the maximum load

AC ***DC***





1. ----------
2. ----------
3. ----------
4. ----------
5. ----------

1. ----------
2. ----------
3 ----------
4 ----------
5 ----------

MPE: All results shall be within MPE

Passed ☐ Failed ☐ Passed ☐ Failed ☐

Tested by: ----------(Please written name) Checked by: ----------

4. WEIGHING TEST ***AC*** ***DC***

	Weight	Loading	Unloading	mpe		Weight	Loading	Unloading	mpe
1+					1+				
2+					2+				
3+					3+				
4+					4+				
5+					5+				
6+					6+				
7+					7+				
8+					8+				
9+					9+				
10+					10+				
11+					11+				
12+					12+				
13+					13+				
14+					14+				
15+					15+				

Passed ☐ Failed ☐ Passed ☐ Failed ☐

5. TIME DEPENDENCE

5.1 ZERO RETURN TEST (AC)

I. Scale is on initially.

II. Place the weight close to Min or less than 9e prevent zero tracking if activated.

III. Add **1/10e** pieces in to the platter one by one until indication changes to next higher value. (Until the indication is increased)

IV. Note down the weight of the added pieces **(ΔL_0)**

V. Remove only the added pieces of platter.

VI. Load the platform with close to **maximum weight**.

VII. Load the loaded value for **30 minutes.**

VIII. Remove only the **maximum weight.**

IX. Add **1/10e** the value one by one until the indicator increase by **1e.**

X. Note down the added pieces. **(ΔL_{30})**

P=I+ 1/2e- ΔL

Time of reading		Load, L_o	Indication of zero, I_o	Add load, ΔL	P
0 min					P_0 =

Load during 30 minutes =

Time of reading		Load, L_o	Indication of zero, I_o	Add load, ΔL	P
30min					P_{30}

For multiple range instruments keep instrument unloaded for further 5 minutes

35min					P_{35}

Change after 30 minutes:

$|\Delta(P_{30}-P_0)|$ =

Change after 5 minutes:

$|\Delta(P_{35}-P_{30})|$ =

Check If

a) $|\Delta(P_{30}-P_0)| \leq 0.5e$

b) $|\Delta(P_{35}-P_{30})| \leq e_1$ (for multiple instruments only)

Change after 30 minutes

$|\Delta(P_{30}-P_0)|$ =

$|\Delta(P_{30}-P_0)|$ =

b) $|\Delta(P_{35}-P_{30})| \leq e_1$ **(for multiple range instruments only)**

$P = I + 1/2e - \Delta L$

$P_0 = I_0 + 1/2e - \Delta L_0$ → 1

$P_{30} = I_{30} + 1/2e - \Delta_{30}$ → 2

$\Delta P = P_{30} - P_0$

$\Delta P = (I_{30} - I_{0)} + (\Delta L_{30} - \Delta L_0)$

$\Delta P \leq 0.5e$

Tested by: ----------(Please written name) Checked by: ----------

5.1 ZERO RETURN TEST (DC)

Time of reading		Load, L_o	Indication of zero, I_o	Add load, ΔL	P
0 min					P_0 =

Load during 30 minutes =

Time of reading		Load, L_o	Indication of zero, I_o	Add load, ΔL	P
30min					P_{30}

For multiple range instruments keep instrument unloaded for further 5 minutes

35min					P_{35}

$P_{30}=I_{30}+ 1/2e- \Delta L$

Change after 30 minutes

$|\Delta(P_{30}-P_0)|=$

$|\Delta(P_{30}-P_0)|=$

b) $|\Delta(P_{35}-P_{30})| \leq e_1$ (**for multiple range instruments only)**

$P = I + 1/2e – \Delta L$

$P_0 = I_0 + 1/2e – \Delta L_0$ → 1

$P_{30} = I_{30} + 1/2e – \Delta_{30}$ → 2

$\Delta P = P_{30} – P_0$

$\Delta P = (I_{30} – I_{0)} + (\Delta L_{30} – \Delta L_0)$

$\Delta P \leq 0.5$

Tested by: ----------(Please written name) Checked by: ----------

5.2 CREEP TEST (AC)

P= I + 1/2 e - ΔL

Time of reading		*Load L*	*Indication I*	*Add load ΔL*	P	ΔP
	0 min					
	5 min					
	15 min					
	30 min					
	1 h					
	2 h					
	3 h					
	4 h					

ΔP = difference between P at the start (0 min) and P at a given time.

If condition a) is met, the test is terminated. If not, the test shall be continued for the next 3.5 hours and condition b) shall be met.

Condition a): ΔP ≤ 0.5 e after 30 minutes and
ΔP ≤ 0.2 e between the indication obtained at 15 minutes and that at 30 minutes

Condition b): ΔP ≤ absolute value of mpe during the period of 4 hours

Check if condition a) or b) is fulfilled

Passed ☐ Failed ☐

6. CREEP TEST (DC)

P= I + 1/2 e - ΔL

Time of reading		*Load L*	*Indication I*	*Add load ΔL*	P	ΔP
	0 min					
	5 min					
	15 min					
	30 min					
	1 h					
	2 h					
	3 h					
	4 h					

ΔP = difference between P at the start (0 min) and P at a given time.

If condition a) is met, the test is terminated. If not, the test shall be continued for the next 3.5 hours and condition b) shall be met.

Condition a): ΔP ≤ 0.5 e after 30 minutes and
ΔP ≤ 0.2 e between the indication obtained at 15 minutes and that at 30 minutes

Condition b): ΔP ≤ absolute value of mpe during the period of 4 hours

Check if condition a) or b) is fulfilled

Passed ☐ Failed ☐

Remarks:

Tested by: ----------(Please written name) Checked by: ----------