	Technical Specification for Verification and Inspection of Rice Grain Moisture Meters	S/N	CNMV 59
		Rev.	1

1. This Technical Specification is enacted pursuant to Paragraph 2, Articles 14 and 16 of the Weights and Measures Act.

2. The date of promulgation, document number, date of enforcement and content of amendment are listed as follows:

Rev.	Date of Promulgation	Document No. (Ching-Piao-Szu-Tsu)	Date of Enforcement	Content of Amendment
1	10. 07. 2003	No.09240005490	01.08.2003	

3. This Specification is formulated with reference to the following international specifications:

OIML R59 Moisture meters for cereal grain and oilseeds (1984)

Date of Promulgation	Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs	Date of Enforcement
10 .07. 2003		**01 .08. 2003**

1. Scope: this specification applies to rice grain moisture meters (hereinafter referred to as the moisture meter) subject to verification and inspection, which includes measuring devices by applying electrical principle, heating technologies and electromagnetic wave principle to determine moisture content of rice grain.

2. Definition

Moisture content = (water weight in rice grains / initial weight of rice grains being sampled) x 100%.

Moisture content generally be defined as the wet-basis moisture moisture.

3. Structure

3.1 Label with following information at apparent places of moisture meters:

(1) Manufacturer's name or mark.

(2) Warm-up time.

(3) Type number and serial number. If moisture meters can be taken apart from the body of equipment, each part should be labeled the serial number of the main body.

(4) Class (Class I or Class II).

(5) Measuring range of moisture content, expressed by percent (%).

(6) Temperature range for which the moisture meter applies, expressed by ^{o}C.

(7) Applicable rice variety.

3.2 Application method

3.2.1 Moisture meters with resistance theory shall indicate the amount of sample at the location of sample cell. If compression method was applied to measure sample's resistance, sample devices should be provided to maintain constant operation pressure.

3.2.2 Moisture meters with capacitance theory should indicate the height and the amount of samples and allowable impurities percentage. An attached sample container should be provided to define the sample density.

3.2.3 An sample container shall be provided to decide required quantity of sample for moisture meters with heating or electromagnetic method.

3.3 Moisture meters powered by batteries shall be equipped with an insufficient power warning devices.

3.4 Indication of moisture meters

3.4.1 As the indication is directly shown by digital, the minimum scale intervals should be 0.1%.

3.4.2 As the indication is shown by pointing indicator, the minimum scale intervals should be 0.2%.

4. Verification, inspection and maximum permissible errors

4.1 Verification and inspection equipment: certificates of trace ability and uncertainty of certifying equipment system should be provided..

(1) Standard weighing instruments: with a minimum capacity of larger than 300g and the minimum scale intervals is less than 1 mg.

(2) Oven (includes thermometers): with a readable degree (Celsius) not less than 150 ^{o}C and the minimum scale intervals less than 0.5 ^{o}C.

4.2 Verifications and inspection of moisture meters should be carried out under the conditions of 25±5^{o}C, 55±15% RH.

4.3 After warming up as instructed by manufactures, moisture meters should run accuracy verification under the environmental conditions prescribed in Section 4.2 with standard rice grain samples. The standard moisture content and permissible errors of standard rice grains should comply with the data shown in Table 1.

Table 1

Standard rice grain moisture content	12%	14%	16%	18%	20%	22%	24%	26%	28%
Permissible error	±0.2 %	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%	±0.2%

4.4 Before and after verifying standard rice grain samples, oven method should be used to ensure moisture content of standard rice grains and get the test values X_1 and X_2. The deviation between X_1 and X_2 should not exceed 0.3%, otherwise the test needs to be redone. The mean value (x) of X_1 and X_2 was used to be standard values.

4.5 Use standard verification moisture meters to repeat tests for three times and get the measured value $\bar{y}$ (if conversion table is available, the converted value was used as

the true value). The deviation between ($\bar{y}$) and standard value ($\bar{x}$) is called error of the instrument. Processing procedures of standard rice grain will be prescribed in other documents. With use of the permissible errors listed in Section 4.6 to judge the moisture content of tested rice grain passed or not.

4.6 The maximum permissible errors of each test should comply with the data shown in Table 2.

Table 2

Moisture content / Class	12% ≤ Moisture content ≤ 28%
Class I	±(0.2% + 4/100 x moisture content)
Class II	±(0.2% + 5/100 x moisture content)

4.7 The maximum permissible errors for verification and inspection are identical of moisture meters.

4.8 A test report of moisture meter should specify the manufacturer's name or trademark, type number, instrument number and class for identification.

4.9 The validity period of a moisture meter that have passed verification shall be one year commencing from the date of a verification compliance mark affixed on the moisture meter and expiring on the first day of the next month of next year.

5. Verification compliance marks

5.1 The verification compliance marks of moisture meters should be stuck on the adjustable hole of main body, or adhere a verification compliance tag on the seam of both side's shields.

5.2 Verification certificates shall be issued after moisture meters pass verification.