

STANDARD TEST METHOD 2

WEIGHT MEASUREMENT OF DIAMOND

1.1 SCOPE

This Standard describes the method of measuring the weight of diamond of the “colourless to yellow and brown series”.

1.2 APPLICATION

The item submitted shall be unmounted and polished.

Prior to grading, the test item submitted shall be confirmed as being a Type Ia diamond by the Authenticity Identification.

1.3 DEFINITIONS

Weight: The vertical force exerted by a mass as a result of gravity.

Carat: The weight of a diamond shall be expressed in metric carats (ct), one carat being equivalent to 200mg (1/5g).

The weight of a diamond shall be stated in carats to two decimal places and shall be rounded upwards if the third decimal is a 9, for example:

- 0.996 → 0.99 ct
- 0.998 → 0.99 ct
- 0.999 → 1.00 ct

NOTE: If the weighing equipment is capable of measuring up to four decimal places (or above), the fourth decimal place shall not be taken into account.

For example:

- 0.9989 → 0.99 ct
- 0.9990 → 1.00 ct

The Definitions stated in the section “Terms and Definitions” or in other parts of this standard apply to this test method.

1.4 APPARATUS

The following apparatus is required:

Electronic balance: An electronic device used to measure the weight of diamond showing the weight in carats, a resolution of 0.001 carat and an accuracy of at least 0.01 carat.

1.5 TEST ITEM

The measurement of weight of diamond is a single unit test for a whole piece of test item in its entirety. Sampling of a number of test items to represent a batch of diamond products shall not be permitted.

1.6 PROCEDURES

1. Prior to commencing weighing tests on each test date, the operator shall carry out a Daily-One –Point-Check as follows:
 - I. Make sure the balance reading is zeroed – (z1), if not, adjust it. Close the sliding doors before recording a reading.
 - II. Prepare a reference mass (M) approximately equal to 1 carat, place the mass on the balance and record the reading (m1).
 - III. Remove the reference mass from the balance.
 - IV. Place the reference mass on the balance again and record the reading (m2).
 - V. Remove the reference mass from the balance and record the reading (z2).
 - VI. The Daily-One-Point-Check reading $R = \{(m1 + m2)/2 - (z1 + z2)/2\}$ shall be accepted if the deviation of value R to the reference M is within $\pm 1\%$. Otherwise, the balance should be taken out of use.
2. The electronic balance shall be switched on and tared to zero.
3. The test diamond shall be cleaned scrupulously with a lint-free cloth.
4. Then place the test diamond centrally and in table down position on the pan of the electronic balance.
5. Remove the test diamond and check if the reading returns to zero. If not, the test shall be repeated and the average reading shall be taken and reported.
6. The weight measured shall be recorded to 0.001 carat and reported to the nearest two decimal places as in 1.3.

1.7 TEST REPORT

The report shall affirm that the test was carried out in accordance with this Standard. The measurement of

weight should be reported as far as possible in conjunction with other test results such as authenticity identification, colour, clarity, fluorescence, shape & cutting style, proportion and finish and cut grading. In general, the test report shall include but not be limited to the following:

- (a) Identification number of the diamond.
- (b) Date of test.
- (c) Standard method of weight measurement of diamond.
- (d) Results of the measurement of the weight of the diamond in carats.
- (e) Name and signature of person responsible for testing.