

# STANDARD TEST METHOD 1

## AUTHENTICITY IDENTIFICATION OF DIAMOND

### 1.1 SCOPE

This Standard describes the method of distinguishing between diamonds of the “colourless to yellow and brown series” and diamond simulants and synthetic diamonds, and determining if the diamond belongs to Type Ia.

### 1.2 APPLICATION

The items submitted shall be unmounted and polished.

### 1.3 DEFINITIONS

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:

1.4.1 DiamondSure®: A screening device to distinguish between diamonds and diamond simulants and synthetic diamonds, and to confirm that a diamond belongs to Type Ia.

(Other Laboratory developed methods using advanced equipment such as SSEF Diamond Type IIa Spotter, Raman spectrometer and DiamondView , which perform the same screening function may be accepted after verification)

1.4.2 Reference natural diamond (RND): A natural Type Ia diamond of traceable source.

1.4.3 Reference synthetic/simulant diamond (RSD): A set of reference stones, of traceable source consisting of

- a Synthetic Diamond
- a Moissanite
- a Cubic Zirconia

### 1.5 TEST ITEM

The authenticity identification 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. The instrument shall be switched on using the switch at the rear of the unit.

2. The sample chamber lid shall be closed.
3. Press the “Standby” button.
4. Wait until the “Ready” message is displayed.
5. Perform daily equipment checking before testing commences:
  - I. Open the sample chamber lid and place the reference natural diamond (RND) inside with table facing the centre of the illuminating probe. Press the “Test” key and wait a few seconds for the result to appear. Then record the results.
  - II. Place the reference synthetic diamond/diamond simulant (RSD) in the chamber one by one with their table facing the centre of the illuminating probe. Press the “Test” key and wait a few seconds for the result to appear. Then record the results.
  - III. If the results indicate that the RND tested is a natural diamond and the RSD is a synthetic diamond and/or diamond simulant, then the equipment is considered to be functioning properly. If not, the equipment shall be taken out of use.
6. Place the testing stone in the chamber with its table facing the centre of the illuminating probe.
7. Press the “Test” key and wait a few seconds for the result to appear and then record the results. To re-test, press the “Test” key again.
8. After recording the result, and if no further testing is required, press the “Standby” key.
9. If “Pass” is displayed then the test stone is identified as a Type Ia diamond.
10. If “Pass (Confirm with a thermal pen)” is displayed then the stone shall be tested further with a thermal pen or subjected to other equivalent tests before any judgment can be made.
11. If “Refer for further tests (Type Ib component)” or “Refer for further tests (Type II)” appears then the stone shall be re-positioned on the fibre-probe and re-tested. If such additional tests also give the same result then the tested stone shall be identified as a non-Type Ia diamond and

subject to further tests.

12. If “Refer for further tests (Test for Moissanite)” appears then the stone shall be identified as synthetic moissanite and subjected to further tests for confirmation.
13. If the combined results do not suggest that the tested item is a diamond of Type Ia, then the test item shall not be graded.
14. This test shall be carried out by a Diamond Grader meeting the requirements stated by the GAHK.

## **1.7 TEST REPORT**

The report shall affirm that the test was carried out in accordance with this Standard. The authenticity identification test of diamond should be carried out and the results reported before any test diamond is graded. Diamonds other than Type Ia, Moissanite, Cubic Zirconia or other diamond simulants shall not be graded non their identity and condition reported in the format of a diamond grading report. In general, the test report for any Type Ia diamond shall include but not be limited to the following:

- (a) Identification number of the diamond.
- (b) Date of test.
- (c) Standard method of authenticity identification of diamond.
- (d) Test result proving the authenticity identification of the test item.
- (e) Name and signature of person responsible for testing.