

# STANDARD TEST METHOD 4

## FLUORESCENCE OF DIAMOND

### 1.1 SCOPE

This Standard describes the method of fluorescence grading 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

Fluorescence reference stones: The reference stones shall be of round brilliant-cut diamond that characterize the intensities "none" or "nil", "faint" or "slight", "medium", "strong" and "very strong". These five grades are classified as the degree of fluorescence.

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. **Fluorescence reference stone:** The reference stones shall be not smaller than 0.20 carats and shall not have internal characteristics that are eye visible under normal vision. Finish shall be at least "Good". The shape shall be round and have a blue fluorescence. All stones in a set shall be of similar weight and proportions (deviation within 10%), and the nature of the girdles shall be the same. The reference stones should be certified by the Gemmological Association of Hong Kong as being traceable to recognised sources.
2. Four reference stones showing a combination of the intensities "none", "faint", "medium" and "strong" shall be required to achieve the correct fluorescence description for each diamond. The reference stones and the diamond under examination shall be positioned on a matt black or white background with no fluorescent effect.

3. An artificial UV light source: The specification of an artificial UV light source shall be a long wave UV lamp (approximately 365 nm).

### 1.5 TEST ITEM

The grading of fluorescence 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. Clean each test diamond prior to grading. Diamonds with dirty girdles shall be cleaned by appropriate means, e.g. alcohol.
2. The fluorescence of the diamond to be graded shall be determined by visual comparison with reference stones. Position the reference stones at the maximum intensity of fluorescence for the intensities, "none", "faint", "medium", "strong" or "very strong".
3. The lighting in the room used for comparing the fluorescence of a test diamond against the fluorescence reference stones shall have no effect either upon the stone under examination or the reference stones.
4. The test diamond under examination and the reference stones shall be placed at a distance of approximately 10-20 cm from the UV source and examined table down or from the pavilion side from being almost parallel to the level of the girdle to being perpendicular with the pavilion facets, and an overall impression gained.
5. If the hue of the fluorescence is other than blue, the intensity shall be considered in relation to the reference stones. The hue shall also be registered.
6. For diamonds over 1.0 carat, the fluorescence of the diamonds shall be graded by two Diamond Graders recognised by the GAHK, with at least one of them being a GAHK Certified Gemmologist (Diamond). The results of the grading shall be consistent among the two graders, otherwise the grading process shall be repeated until consistency of the grading results can be obtained.

## 1.7 TEST REPORT

The report shall affirm that the test was carried out in accordance with this Standard. The fluorescence grading should be reported as far as possible in conjunction with other test results such as authenticity identification, weight measurement, colour, clarity 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 fluorescence of diamond.
- (d) The fluorescence result of the diamond.
- (e) Traceability of the fluorescence reference stones.
- (f) Name and signature of person responsible for testing.

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