

STANDARD TEST METHOD 6

FEI CUI (JADEITE JADE) POLARISCOPE EXAMINATION

1.1 SCOPE

This Standard describes how a polariscope should be used to detect whether the test Fei Cui (Jadeite Jade) is isotropic, anisotropic or polycrystalline.

1.2 APPLICATION

The polariscope examination applies to items made from Fei Cui (Jadeite Jade) as received by the laboratory for testing.

The polariscope serves only as a reference for the identification of Fei Cui (Jadeite Jade) on its authenticity.

1.3 DEFINITIONS

Isotropic: Isotropic materials exhibit the same optical properties in all directions through the material. Cubic crystals and amorphous materials are optically isotropic.

Anisotropic: Optically anisotropic materials exhibit different optical properties in different directions through the material. All crystal structures other than those in the cubic crystal system are optically anisotropic.

Polycrystalline: Substances which consist of many aggregated crystals. Polycrystalline materials possess no overall exterior crystal form.

1.4 APPARATUS

The following apparatus is required:

A polariscope.

1.5 TEST ITEM

The polariscope examination 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 Fei Cui (Jadeite Jade) products shall not be permitted.

1.6 PROCEDURES

1. The test Fei Cui (Jadeite Jade) shall be cleaned scrupulously with a lint-free cloth.
2. The analyser and the polarizer shall be set in the

extinction position before the test commences.

3. The test Fei Cui (Jadeite Jade) shall be placed on the polarizer.
4. The test Fei Cui (Jadeite Jade) shall be rotated by 360°.
5. The observer shall look through the upper polarizing filter to observe the polarization effects.

Note:

Polariscope examination is not applicable to mounted Fei Cui (Jadeite Jade).

1.7 EXPRESSION OF RESULTS

Observations	Conclusions
Stone remains dark through 360°	Isotropic – amorphous or cubic
Stone goes light and dark 4 times through 360°	Anisotropic - uniaxial or biaxial
Stone stays light through 360°	Polycrystalline
Stone shows anomalous extinction effect	Strain anisotropy, often in otherwise isotropic material

1.8 TEST REPORT

The report shall affirm that the test was carried out in accordance with this Standard. The polariscope examination test result should be reported as far as possible with other Fei Cui (Jadeite Jade) test results such as shape & cut identification, measurement of dimensional & weight, identification of transparency, identification of colour, examination of fluorescence, Chelsea colour filter examination, determination of specific gravity & refractive index, infrared spectrum examination, magnification examination and spectroscopic examination. In general, the test report shall include but not be limited to the following:

- (a) Identification number of the Fei Cui (Jadeite Jade) item.
- (b) Date of test.
- (c) Standard method of polariscope examination
- (d) Name of person carrying out the test.
- (e) Name and signature of person responsible for testing.