

**BIS CRITERIA FOR RECOGNITION OF  
ASSAYING AND HALLMARKING CENTRES FOR SILVER JEWELLERY/ARTEFACTS**

**0 GENERAL INFORMATION**

0.1 Bureau of Indian Standards (BIS) as the National Standards Body had laid down Indian Standards for Silver and Silver alloys, its purity and testing which are in line with International Standards. With the increasing Awareness of the Indian consumer and market demand and competitiveness in the domestic and export market by the jewellery trade, for the high value metal, of which India is the largest global consumer, Silver and Silver alloys .Certification is launched by BIS under the BIS Act 1986. The scheme is named as the BIS Certification Scheme for Hallmarking of Silver jewellery/artefacts.

The Hallmarking of Silver jewellery/artefacts is proposed to be done on voluntary basis. Certification of purity of Silver artefact is done in accordance with the Indian Standard IS:2112 Silver its alloys is done in accordance with IS:2113:2002 Assaying Silver and Silver Alloys.

Silver jewellery/artefacts manufacturer desirous of operating the BIS Hallmarking Scheme for Silver jewellery/artefacts shall apply to BIS and ensure homogeneity of batches of jewellery/artefacts offered for Hallmarking by following a systematic quality system. The Silver manufacturer's quality management system and conforming test reports will form the basis for Certification of jewellery/artefacts. A Certified manufacture will have the license to get his artefact Hallmarked by any of the BIS recognized Assaying and Hallmarking Centre. BIS certified jewellery/artefacts would only offer finished capable of Hallmarking to any of the BIS recognized Assaying and Hallmarking Centre and will bear any risk associated with Hallmarking of the article.

The recognition of the Assaying and Hallmarking Centres would be done by BIS after ensuring that these Centres are following BIS Criteria for all the operations of the Centre i.e. receipt, sampling, assaying and hallmarking and for Assessment of Assaying Laboratory as per ISO/IEC/ IS:17025.

0.2 Alignment with International Convention on the Control and Marking of Articles of Silver.

BIS Hallmarking Scheme for recognition of Assaying and Hallmarking Centres is in line with International Convention on the Control and Markings of Articles of Precious Metals (Vienna Convention). As per this Convention an article bearing an Official Mark of one of the contracting states/countries and the 'Common Control Mark' of the Convention will not undergo further testing and marking in another member country. A further advantage is that the responsibility mark does not need to be registered in the importing country. The Guidelines will be of much use when India becomes a member of Vienna Convention after gaining experience in the field.]

**1 SCOPE**

1.1 The document lays down general as well as technical criteria for the recognition of an Assaying and Hallmarking Centres operating under the BIS Criteria for Hallmarking of artefact (hereafter referred to as Centre). The requirements for the operations of the Centre with respect to receipt, sampling and hallmarking are based on ISO 9001. The specific requirement for assessment of assaying laboratory of the Centre is based of ISO/IEC/IS: 17025

The same are also in line with the Guidelines issued by the Convention on the Control and Marking of articles of Silver.

## **2. DEFINITIONS**

### **2.1 Access to a Certification System**

The opportunity to obtain certification under the rules of the system.

### **2.2 Certification Body**

An impartial body, governmental or non-governmental, possessing the necessary competence and reliability to operate a certification system, and in which the interests of all parties concerned with the functioning of the system are represented.

### **2.3 Certification Scheme**

Part of a certification system relating to a certain product or group of products to which the same particular rules (such as rules on type testing, assessment of the manufacturer, product surveillance and/or production surveillance) and the same procedure apply.

### **2.4 Conformity with Standards or Technical Specifications**

The conformity of a product or a service with all the requirements of specific standards or technical specifications.

### **2.5 International Standard**

A standard adopted by an international standards organization or in certain cases a technical specification adopted by an international standardizing body.

### **2.6 International Standards Organization**

An organization, governmental or non-governmental, whose membership is open to all countries of the world and whose principal function, by virtue of its statutes, is the preparation and/or publication of standards and/or the harmonization of the standards of its members.

### **2.7 Laboratory Assessor**

An individual who carries out some or all functions related to laboratory assessment.

### **2.8 Laboratory Assessment**

Examination of a testing laboratory of evaluates its compliance with specific criteria.

### **2.9 Manufacturer**

An organization, situated at a stated location or stated locations, that carries out or controls such stages in the manufacture, assessment, handling and storage of a product that enables it to accept responsibility for

continued compliance of the product with the relevant requirements and undertakes all obligations in that connection.

NOTE – The applicant and the manufacturer are often the same body.

## **2.10 Marking**

Application of indications on a product or on a package primarily for the purpose of identifying the product and/or certain features of the product.

## **2.11 National Standard**

A standard adopted by a national standards body, in this case, by Bureau of Indian Standards (BIS).

## **2.12 National Standards Body**

A nationally recognized body whose principal function at the national level, by virtue of its statutes or the law of the country, is the preparation and/or publication of national standards and/or approval of standards prepared by other bodies. This body is eligible to be the national member of the corresponding international and regional standards organizations. In this case it is BIS.

## **2.13 Proficiency Testing**

Methods of checking laboratory testing performance by means of inter laboratory tests.

## **2.14 Reference Material (RM)**

A material or substance one or more properties of which are sufficiently well established to be used for the calibration of an apparatus or for the verification of a measurement method. (Definition taken from ISO Guide 6 but without the note appearing therein).

## **2.15 Testing Laboratory**

A laboratory, which measures, examines, tests, calibrates or otherwise determines the characteristics or performance of materials or products.

## **2.16 Test Report**

A document which presents the test results and other information relevant to the test.

## **2.17 Technical Specification**

A document, which lays down characteristics of a product or a service such as levels of quality, performance, safety, dimensions. It may include terminology, symbols, testing and test methods, packaging, marking or labeling requirements. A technical specification may also take the form of a code of practice.

## **2.18 Third Party Certification System**

A certification system managed by a certification body or under its surveillance.

## **2.19 Tolerance**

The permissible variation of the specified value of a quantity.

## **3 ORGANIZATION**

The organization (Assaying and Hallmarking Centre) shall have legal identity and Independent status. The promoters of the organization shall not have any linkage with manufacturers/retailers. It may be a Silver manufacturer's Association.

NOTE - In case the Assaying and Hallmarking Centre is set up by silver manufacturer's Association, no office bearer of the Association shall be involved in day to day working of the Centre.

**3.1** Management to define and document the organization policy and objectives and commitment to quality.

**3.1.1** Ensure that the policy is understood, implemented and maintained at all the levels.

**3.2** All staff are adequately qualified and experienced to perform the duties of their position.

**3.2.1** The responsibility, authority and the interrelationship of all personnel, who manage, perform and verify work affecting quality shall be defined.

**3.3** Management to appoint management representative having defined authority and responsibility for ensuring implementation and maintenance of Quality management system in the organization.

## **3.4 Management Review**

Quality System adopted by the organization to be reviewed at appropriate intervals to ensure its continuing suitability and effectiveness.

Records of such reviews to be maintained.

## **3.5 Internal Quality Audits**

Organization shall carry out internal quality audits by trained internal auditors to ensure that the quality activities comply with planned arrangement to determine the effectiveness of quality system.

Records of internal quality audit and its follow up actions to be maintained.

## **4 DOCUMENTATION**

**4.1** Establish and maintain procedures to control all documents (internally generated and from external sources) that form part of quality documentation from receipt to despatch of work. These includes documents of external origin, such as regulations, standards, other normative documents, test and/or calibration methods, as well as drawings, specifications, instructions and manuals.

**4.2** Detailed procedures and work instructions are required detailing the method, responsibilities and authorization.

**4.3** Procedure shall exist to review the documents at given periodicity (or as desired) and revise the same.

**4.4** Obsolete documents to be removed promptly from workplace and copy (if required) retained for legal purposes.

**4.5** Changes to documents shall be done by the same function that performed the original review.

**4.6** Procedures shall be established to describe how changes in documents maintained in computerization system are made.

## **5 SAMPLING**

**5.1** Sampling to obtain representative samples shall be carried out according to detailed documented instructions maintained by Assaying and Hallmarking Centre.

**5.2** Sampling plans to be prepared by Assaying and Hallmarking Centres and approved by BIS before implementation.

**5.3** The records maintained shall include the sampling procedure used, identification of samples, environmental conditions.

**5.4** Samples shall have identifiable traceability with the batch and the test result.

## **6 ASSAYING**

**6.1** The assaying of Silver and Silver Alloys to be carried out as per IS 2113 “ Assaying Silver in Silver and Silver Alloys for the purpose of Hallmarking by the Assaying and Hallmarking Centre. The details of the Guidelines to be followed by the Centre for assessment requirements of the Assaying Laboratory are given in Annex A.

## **7 MARKING**

**7.1** Marking shall be carried out by the Centre according to detailed documented procedure using laser marking machines. The markings shall be, legible and durable. BIS will provide the design of the Hallmark.

**7.2** Hallmarking is to be done for jewellery/artefacts offered by BIS certified manufacturers. All such jewellery/artefacts offered will only be acceptable if it is capable of being hallmarked. Records shall be maintained for registered manufacturers/retailer's (See item 16).

**7.3** All the items to be marked with the following:

- a) Purity Mark with fineness grade
- b) Assay Centre's symbol
- c) Year of marking denoted by a letter (as defined BIS)
- d) *BIS logo*

NOTE: Each Centre to ensure that Silver article received for Hallmarking shall be marked with manufacturers/retailer's logo, before offering the lot for Hallmarking.

**7.4** A Linear design to be developed with in-built security lines in the background.

**7.5** Marking to be done on all parts which can be easily removed or replaced. .

Any Silver metal article/ornament which has an additional part made out of any other metal will be additionally marked with the word 'METAL' on the metal part of the article/ ornament.

**7.6** Vigilance to be maintained during use of machine for marking

## **8 INSPECTION**

**8.1** Inspection and monitoring of articles at various stages to be done by trained personnel.

**8.2** Detailed procedure shall be laid down for the inspection and controlled movement of articles at various stages i.e.

- a) Receiving
- b) Sampling
- c) Assaying
- d) Hallmarking
- e) For correct marking and any damage incurred
- f) Packaging and return of cornets, if any
- g) Final dispatch

## **9 CONTROL OF NON-CONFORMING ARTICLES**

**9.1** Procedure to be laid down which shall include identification and segregation of non-conforming and rejected articles at Hallmarking stage.

**9.2** The responsibility for review and authority for the disposition of non-conforming product shall be defined.

NOTE - 1 the nonconformance at sampling is due to the reasons that the lot submitted is a) not homogenous; b) very different from the declared purity; c) not at sufficient advance stage of manufacturing or all the parts are not in position and d) presence of elements prohibited as per IS 2112

NOTE - 2 the non-conformance at marking stage is after assaying the purity content and when it does not conform to the declared value and thus reject mark is put.

## **10 CUSTOMER COMPLAINTS**

**10.1** Procedure shall be laid down for recording, investigating and dealing with customer complaints.

**10.2** The complaints shall be resolved within one month.

In case the complaint is not resolved within given time frame i.e. one month same shall be brought to the knowledge of BIS.

**10.3** If the complaint is challenged, the final authority for resolving the same lies with BIS.

## **11 PACKAGING**

**11.1** A system shall be established to ensure against loss of identity during final packaging for a) Unassayed jewellery/artefacts after first stage of sampling; b) Hallmarked jewellery/artefact articles; c) Rejected jewellery/artefacts

**11.2** Items shall be suitably protected in final packaging for transportation.

**11.3** Items shall be returned back to the client within 48 hours after sampling, assaying and Hallmarking.

## **12 TRAINING**

**12.1** All personnel to receive in-house training in the techniques required completing their duties e.g. sampling, assaying and Hallmarking

**12.2** Duration of the training to be laid down for each activity.

**12.3** In-House training to be imparted only by the personnel who are already trained for the job from organizations of repute or training is to be supplemented by external training.

**12.4** Training records to be maintained of all personnel.

## **13 PROFESSIONAL IDEMNITY INSURANCE**

**13.1** The liability of the hallmarked jewellery/artefacts as far as purity is concerned lies with the Assaying and Hallmarking Centre and hence required to take professional indemnity Insurance.

## **14 INSURANCE**

**14.1** The jewellery/artefacts submitted for Hallmarking purpose to be insured by the client.

## **15 RECORDS**

**15.1** All relevant and complete records will be maintained with respect to the jewellery/ artefact Hallmarked in the last three years for each of the BIS certified jewellery/ artefact manufacturer /retailer.

## **16 TEST REPORT**

**16.1** The test report shall include the following information:

- a) Identification of the sample including source, date of receipt, form of sample;
- b) Sampling procedure;
- c) The method used by reference to this standard;
- d) Silver content of the sample, in parts per thousand , as single and mean values;(as specified in IS 2113)
- e) If relevant, any deviations from the method specified in this standard;
- f) Any unusual features observed during the determination;
- g) Date of test;
- h) Identification of the laboratory carrying out the analysis. Signature of assay in charge and chemist.

**ANNEX A**  
**(Clause 6.1)**

**CRITERIA FOR THE ASSESSMENT REQUIREMENTS OF AN  
ASSAYING LABORATORY**

**A-0 The criteria is based on the following:**

ISO/IEC 17025	General requirements for the technical competence of testing laboratories
ISO 10012: 2003	Quality Assurance requirements of measuring equipment Part 1 Metallurgical Conformation System for Measuring Equipment.

The criterion is useful for laboratories in developing their quality, administrative and technical systems that governs their operations.

It is the responsibility of the Assay laboratory to carry out its testing activities in such a way as

- 1) To meet all the requirements of the ISO/IEC:17025
- 2) To satisfy the needs of the client, BIS and if any, the regulatory authorities.
- 3) To have complete testing facilities and trained/competent manpower to carry out assaying as per IS 2113 “Assaying Silver in Silver and Silver Alloys” .

**A-1 MANAGEMENT ORGANIZATION**

The Assaying laboratory shall be competent to perform the testing of Silver in Silver and Silver Alloys It shall:

- a) specify and document the responsibility, authority and interrelationship of all personnel who manage, perform or verify work affecting the quality of tests.
- b) have managerial staff with the authority and resources needed to discharge their duties.
- c) provide supervision by persons familiar with the calibration and test methods, procedures, objectives and assessment of the results.
- d) have complete facilities for testing of IS:2113 “method for Assaying Silver in Silver and Silver alloys” .
- e) Have an assaying incharge (or any other designation) who has overall responsibility for the technical operations.
- f) Have a quality manager as well who has the responsibility for the quality system and its implementation.
- g) Participate in inter laboratory comparisons and proficiency testing programmes.
- h) Ensure the protection of its client’s confidential information and proprietary rights, including procedure for protecting the electronic transmission of results.
- i) Avoid involvement in any activities that would diminish confidence in its competence, impartiality, judgment or operational integrity.

### **A-1.1 Quality System and Quality Manual**

The Assay lab shall establish and maintain a quality system (appropriate to the type, range and volume of its activities), the elements of which shall be documented in a Quality Manual and the same shall be made available to laboratory personnel. The Quality Manual shall be maintained under the responsibility of Quality Manager.

The Quality Manual shall cover all the elements as outlined in ISO/ IEC 17025.

### **A-1.2 Audit, Review and Quality Control**

The Assay laboratory shall arrange for audits of its activities at least once in a year by trained and qualified staff (who are independent of the activity being audited) to verify that its operations continue to comply with the requirements of the quality system.

Corrective actions, if required, out of the audit and review findings must be documented and action taken within a definite time frame.

In addition to periodic audits, the assay lab shall ensure the quality of results by implementing suitable checks.

## **A-2 PERSONNEL**

The Assay laboratory shall have sufficient personnel, having the necessary education, training, technical knowledge and experience for their assigned functions.

The minimum training for Assay incharge and Testing Personnel shall be as follows:

### **1 Assay Incharge**

Training in Lab Management, Sampling, Assaying and Hallmarking from reputed Assay Centre.

### **2. Testing Personnel**

Sampling and Assaying from reputed assay Centre or on job training for six months under supervision of Assay Master.

The Assay Master and Testing personnel shall preferably be Graduate in Science

The Assay Lab shall ensure that the training of its personnel is kept up to date.

Information/records on the relevant qualification, training, status and experience of the technical personnel shall be maintained by the laboratory.

## **A-3 PREMISES AND EQUIPMENT**

The environment in which the tests are performed shall not invalidate the test results.

Good house-keeping shall apply throughout the testing laboratory.

The Assay laboratory shall have all the appropriate equipments to perform the tests

### **A-3.1 Equipment**

A-3.1.1 All equipment and reference material required for correct performance of tests and calibration shall be correctly maintained and calibrated.

#### **A-3.1.2 Maintenance procedure to be documented.**

A-3.1.3 All measuring and testing equipment shall be calibrated and/or verified before put into service.

A-3.1.4 The laboratory shall have a self established programme for the calibration and verification of its measuring and test equipment.

A-3.1.5 Reference standards of measurement (to be used for calibration) shall be calibrated by a competent body that can provide traceability to National or International Standards.

A-3.1.6 Calibration records to be maintained for 3 years.

A-3.1.7 Reference materials shall, where possible, be traceable to National/International standard reference materials.

### **A-3.2 Working Procedures**

#### **A-3.2.1 Test Methods**

The assaying laboratory shall have documented instructions on the use and operation of equipment. The assaying lab shall use documented methods and procedures. There should be documented system for calculating, checking and reporting results.

#### **A-3.2.2 Consumables**

Procedure shall exist for the purchase, reception and storage of consumable materials relevant for testing.

### **A-3.3 Records**

A-3.3.1 The laboratory shall maintain a record system that shall ensure retaining all original observations, calculations and derived data, calibration records and a copy of calibration certification, final test results for a period of minimum 3 years as well as comply with any applicable regulations.

A-3.3.2 The records shall include the identity of personnel involved in sampling and assaying.

A-3.3.3 All records pertaining to Quality Management System shall be safely stored, held secure and in confidence to BIS.

#### **A-3.3.4 Any corrections in records shall be done as per ISO/IEC 17025.**

A-3.3.5 The lab shall have procedure to protect and back up data held on computers at all times and to prevent unauthorized access to an amendment of data on computer.

#### **A-3.4 Handling of Samples**

The laboratory shall have a system to ensure no confusion regarding the identity of samples at any stage of assaying.

#### **A-3.5 Confidentiality and Security**

The laboratory shall ensure that the personnel of testing lab observe professional secrecy.

#### **A-3.6 Cooperation with other Laboratories**

The laboratory shall participate in inter laboratory testing of samples. The objectives being to have confidence in testing by following uniform test procedures and thus improve the quality of testing.

#### **A-3.7 Complaints**

A-3.7.1 The laboratory shall have documented procedure for resolution of complaints received about laboratory activities.

A-3.7.2 A record shall be maintained of all complaints and of the actions taken by the laboratory.

A-3.7.3 Where a complaint or any other circumstances raises doubt concerning the lab's compliance with the laid down policies and procedures, or with the requirements of this document or otherwise concerning the quality of calibration or tests, the laboratory shall ensure that those areas of activity and responsibility involved are promptly audited in accordance with laid down procedures.