

# Gold Bar

## 1. Scope

This standard sets out the product designation, requirements, testing methods, testing rules, markings, packaging, transport, storage, and certificate of quality for gold bars.

This standard applies to the gold bars deliverable through the Shanghai Gold Exchange.

## 2. Normative References

The provisions of the following documents are incorporated as part of this standard by reference. For dated reference documents, any and all subsequent amendments (excluding the content of corrigenda) or revisions shall not apply to this standard, but the parties that reached an agreement according to this standard shall be encouraged to discuss whether the latest versions of such reference documents should apply. For undated reference documents, the latest versions shall apply to this standard.

GB/T 8170-1987	Rules for Rounding Off Numerical Values
GB/T 1250-1989	Rules for Expression and Judgment of Limiting Values
GB/T 11066-1989	Methods for Chemical Analysis of Gold
SGEB1-2002	Gold Ingot

## 3. Designations

Gold bars come in 50 g and 100 g variants.

## 4. Requirements

### 4.1 Physical Specifications

4.1.1 Weight of standard gold bars: 50 g and 100 g.

4.1.2 Weight of deliverable gold bars:  $50^{+0.10}$  g and  $100^{+0.10}$  g. Negative tolerances are not allowed in gold bars.

4.1.3 The bottom face and four sides shall be rectangular, with an undercut of no more than  $10^\circ$  for the sides.

4.1.4 Dimension requirements:

The permitted dimensional ranges for the bottom face of a gold bar are as follows:

	50 g	100 g
Length	$40 \pm 2$ mm	$60 \pm 2$ mm
Width	$12 \pm 2$ mm	$16 \pm 2$ mm

The vertices of the bottom face and the four side edges should have rounded corners with a radius of 2-3 mm.

## 4.2 Surface Quality

4.2.1 Gold bars should have intact edges and corners, smooth surfaces, and smooth transition from the top and bottom faces to the sides.

4.2.2 Gold bars should not have any cavities, excessive shrinkages, inclusions, pores, pitted surfaces, cold shuts, blisters, icicle-shaped marks, or other defects.

4.2.3 Save for relevant surface marks, gold bars should be free of machining marks.

## 4.3 Chemical Composition

4.3.1 The chemical composition of gold bars shall conform to the specifications in the table below:

Designation	Chemical Composition (%)							
	Au $\geq$	Impurity Content Not More Than						
		Ag	Cu	Fe	Pb	Bi	Sb	Total
Au99.99	99.99	0.005	0.002	0.002	0.001	0.002	0.001	0.01

4.3.2 Other composition may be specified based on user or transaction needs.

## 4.4 Inspection and Acceptance

4.4.1 Manufacturer shall ensure the quality of gold bars it produces complies with this standard.

4.4.2 Where the gold bar received by the buyer does not conform to this standard, the buyer and the supplier shall negotiate for a solution. If arbitration is necessary, an Exchange-designated quality inspection agency shall be responsible for the assaying; the assay results shall form the basis for the ruling.

## 4.5 Examination Methods

4.5.1 The arbitration assay of the chemical composition of gold bar shall be conducted according to the method under GB/T 11066. Other methods are permissible provided the precision

is no lower than that required by this standard.

4.5.2 The surface quality of gold bar shall be determined by visual inspection.

4.5.3 The physical specifications of gold bar shall be examined with apparatus of appropriate precision levels.

#### **4.6 Examination Rules**

4.6.1 The chemical composition shall be assayed by batch, with each batch consisting of gold bars from the same melt. If necessary, the composition can be assayed bar-by-bar.

4.6.2 The surface quality shall be examined ingot-by-ingot; physical specifications shall be spot checked.

4.6.3 An arbitration assay shall be conducted in the event of any quality dispute between the supplier and the buyer regarding the chemical composition of gold bar.

#### **4.7 Sampling Rules**

4.7.1 Gold bar of a manufacturer shall be subject to batch sampling, with the samples randomly collected from sheet/bar casting, water quenching, drilling, and other methods.

4.7.2 For spot-checking and arbitration, random samples shall be taken from 10% of the gold bars in each batch.

#### **4.8 Judgement Rules**

4.8.1 If the chemical composition of a bar is inconsistent with Article 4.3 of this standard, all bars in that batch shall be regarded as nonconforming.

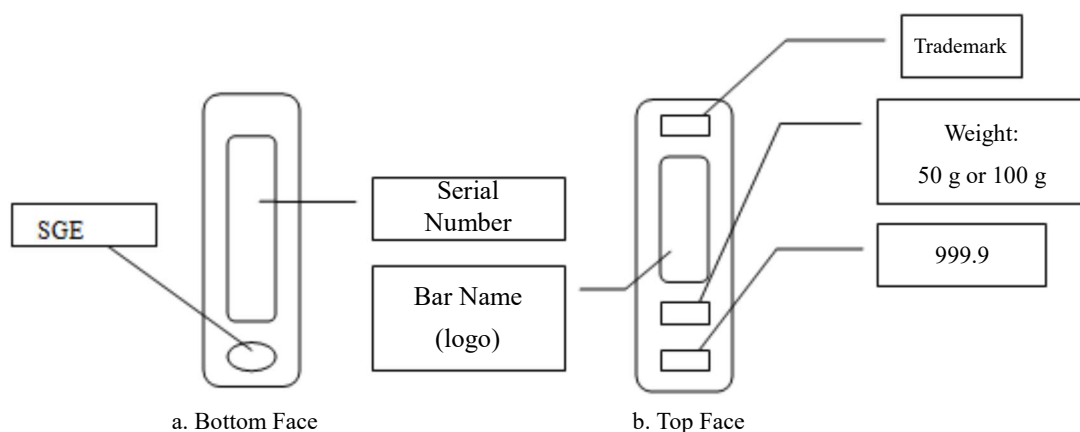
4.8.2 If the surface quality of a bar is inconsistent with Article 4.2 of this standard, that bar shall be regarded as nonconforming.

4.8.3 Numerical value rounding off of the chemical composition assay results shall be performed in accordance with Chapter III of GB/T 8170-1987.

### **5. Marks, Packaging, Transport, Storage, and the Certificate of Quality**

#### **5.1 Marks**

5.1.1 The surface of each bar should be stamped with the trademark, bar name, weight, the “SGE” logo (8 mm in diameter) and serial number. Their reference location is illustrated below:



## 5.1.2 Serial Numbering Rules

5.1.2.1 Each gold bar is assigned a nine-character code;

5.1.2.2 The first character is the brand code (A, B, C...) assigned by the Shanghai Gold Exchange;

5.1.2.3 The second and third characters are the year code (e.g., 04 for 2004);

5.1.2.4 The last six digits are a unique number given to the bars produced by that manufacturer that current year (e.g., 000001, 000002...).

## 5.2 Packaging

Gold bars should be individually packaged in transparent, heat-sealed shrink wraps with the corresponding certificate of quality, with ten bars forming a tray, then loaded into wooden or plastic crates to a gross weight of 25 kg.

## 5.3 Transport and Storage

Gold bars shall not be damaged or contaminated during transport and storage.

## 5.4 Certificate of Quality

Each batch of gold bars shall be accompanied by a certificate of quality, specifying the batch number, chemical composition, weight, bar count, serial number, manufacturer, date of manufacture, among other information. Each gold bar should also be accompanied by an individual certificate of quality, specifying its weight, serial number, manufacturer, and date of manufacture, among other information.

# Shanghai Gold Exchange

## General Requirements for Accreditation of Standard Gold Ingot

### Refiners and Gold Ingot Grades

#### 1 Scope

Any enterprise seeking to apply to the Shanghai Gold Exchange (the “Exchange”) for accreditation as a standard gold ingot refiner and accreditation for its gold ingot grades should comply with this *Requirements* to demonstrate its assay capability and the quality of its gold ingots. The review and assay agencies authorized by the Exchange should conduct relevant procedures according to this *Requirements*.

#### 2 Application

An applicant should complete the SGE Standard Gold Ingot Refiner Accreditation Application Form.

#### 3 Review

3.1 The Exchange will establish a review group after accepting the application. The review group should conduct on site-review based on the grades of gold ingot that the applicant applies for.

3.2 The Exchange will determine the on-site review date with the applicant.

##### 3.3 On-site review

3.3.1 The review group will seek to verify the information on the Application Form.

3.3.2 The review group will seek to confirm the refining capacity and production status of the applicant in terms of equipment, staffing, and environment and by reviewing its production and assay reports, and complete items (1), (2), and (3) of the review form;

3.3.3 The review group will visually inspect the surface quality and measure the physical specifications of the gold ingots produced on the spot by the applicant, and complete item (4) of the review form;

##### 3.3.4 Evaluation of gold assaying capability

3.3.4.1 The Exchange will, based on the grades of gold ingot that the applicant applies for, prepare 12 gold samples of corresponding purity as listed in Table 1.

**Table 1: Samples for Testing Gold Assaying Capability**

Grade	Quantity of Standard Samples		Sample Weight (g)
	99.95-99.99%	99.95-99.5%	
Grades I and II	6	6	210
Grades III and IV	3	9	135
Each 99.95-99.99% pure gold sample weighs 30 g. Each 99.95-99.5% pure gold sample weighs 5 g.			

3.3.4.2 The applicant should assay the samples by their identifiers. For Grade I and Grade II samples, it should establish the impurity level and, through the subtraction method, the gold content; for Grade III and Grade IV samples, it should establish the gold content through fire assay.

3.3.4.3 The review group should monitor the analysis and assay of samples on site, assess the level of expertise of the assay personnel, examine the original record and assay report, and complete items (5) and (6) of the review form.

3.3.4.4 The applicant should prepare two copies of the assay report, with itself and the review group each keeping one copy.

### 3.3.5 Judgement of gold assaying capability

3.3.5.1 The analytical error in the assay result should not exceed the tolerance level listed in Table 2.

#### 3.3.5.2 Principles of judgement

(1) If the assay results for all samples pass the test, the applicant is deemed qualified to conduct gold assay.

(2) If the assay results for one to three samples fail the test, the applicant is deemed essentially qualified to conduct gold assay. The applicant should submit, in writing, its corrective measures to the Exchange within one week, implement such measures within three months, and open to sample monitoring and evaluation or on-site reviews.

(3) If the assay results for more than three samples fail the test, the applicant is deemed unqualified to conduct gold assay.

3.3.6 The review group should prepare an assessment report containing its opinions on the accreditation of the applicant as a standard gold ingot refiner.

### 3.4 Accreditation

The Exchange will evaluate an applicant based on the opinions of the on-site review group, and

inform it on whether it has been accredited as a standard gold ingot refiner. For an enterprise that has passed the accreditation process, the Exchange will issue it a standard gold ingot refiner certificate and the seal for mark of conformity (which mark can then be used by the enterprise), and announce the success to the public. For an enterprise that has failed the accreditation process, the Exchange will notify it of the accreditation results in writing.

#### **4 Monitoring and Examination**

4.1 To maintain their status, accredited enterprises must accept the annual monitoring and examination of the Exchange. This protocol involves:

4.1.1 taking on-site samples and sending them to a designated quality inspection agency for assaying;

4.1.2 examining the use of the mark of conformity; and

4.1.3 tracking and examining the consistency of the quality of its products, and examining physical gold ingots and the raw materials and ingots assay report of the year.

4.1.4 Where the quality of an enterprise's gold ingots is called into question by the annual examination or any member, the Exchange will either order the enterprise to correct the issue within a specified time limit or revoke its status as a standard gold ingot refiner.

4.2 The Exchange will periodically publish the result from its monitoring and examination program.

**Table 2: Allowable Assay Error**

Element	Mass Fraction (%)	Allowable Error
Au	> 99.50 < 99.90	0.02
Au	> 99.90 < 99.95	0.02
Ag	0.0005–0.0015 > 0.0015–0.0030 > 0.0030–0.0070 > 0.0070–0.0150 > 0.0150–0.0300 > 0.0300–0.0400	0.0003 0.0006 0.0010 0.0015 0.0030 0.0040
Fe	0.0005–0.0015 > 0.0015–0.0035 > 0.0035–0.0050 > 0.0050–0.0080	0.0003 0.0005 0.0008 0.0010
Cu	0.00050–0.00100 > 0.0010–0.0030 > 0.0030–0.0060 > 0.0060–0.0100 > 0.010–0.0250	0.00025 0.0005 0.0008 0.0012 0.0025
Pb	0.0005–0.0015 > 0.0015–0.0025 > 0.0025–0.0035 > 0.0035–0.0060	0.0003 0.0004 0.0005 0.0008
Bi	0.00050–0.00100 > 0.0010–0.0030	0.00025 0.0005
Sb	0.00050–0.00100 > 0.0010–0.0030 > 0.0030–0.0060 > 0.0060–0.0080	0.00025 0.0005 0.0008 0.0010
Ag Bi Cu Sb Fe Pb	$\leq 0.00008$ > 0.0008–0.0015 > 0.0015–0.0025 > 0.0025–0.0040 > 0.0040–0.0070 > 0.0070–0.0120 > 0.0120–0.0200	0.0003 0.0005 0.0006 0.0008 0.0014 0.0025 0.0035