



Deming Certification Services Pvt. Ltd.

Email: - info@demingcert.com

Contact: - 02502341257/9322728183

Website: - www.demingcert.com

No. 108, Mehta Chambers, Station Road, Novghar, Behind Tungareswar Sweet, Vasai West. Thane District. Mumbai- 401202. Maharashtra. India



Hallmark

What is Hallmark Certificate?

Hall Mark" redirects here. For the racehorse, see Hall Mark (horse).
For other uses, see Hallmark (disambiguation).

A **hallmark** is an official mark or series of marks struck on items made of metal, mostly to certify the content of noble metals—such as platinum, gold, silver and in some nations, palladium. In a more general sense, the term *hallmark* can also be used to refer to any distinguishing mark.

BIS Hallmark

The BIS (Bureau of Indian Standards) Hallmark is a hallmarking system for gold as well as silver jewellery sold in India certifying the purity of the metal. It certifies that the piece of jewellery conforms to a set of standards laid by the Bureau of Indian Standards, the national standards organization of India.

General overview

Historically, hallmarks were applied by a trusted party: the "guardians of the craft" or, more recently, by an assay office. Hallmarks are a guarantee of certain purity or fineness of the metal, as determined by official metal (assay) testing.

Distinguishment

Hallmarks are often confused with "trademarks" or "maker's marks". A hallmark is not the mark of a manufacturer to distinguish their products from other manufacturers' products: that is the function of trademarks or makers' marks. To be a true hallmark, it must be the guarantee of an independent body or authority that the contents are as marked. Thus, a stamp of "925" by itself is not, strictly speaking, a hallmark, but is rather an unattested fineness mark.

Prerequisites to hallmarking

Many nations require, as a prerequisite to official hallmarking, that the maker or sponsor itself marks upon the item a responsibility mark and a claim of fineness. Responsibility marks are also required in the US if metal fineness is claimed, even though there is no official hallmarking scheme there. Nevertheless, in nations with an official hallmarking scheme, the hallmark is only applied after the item has been assayed to determine that its purity conforms not only to the standards set down by the law but also with the maker's claims as to metal content.

Systems

In some nations, such as the UK, the hallmark is made up of several elements, including: a mark denoting the type of metal, the maker/sponsor's mark and the year of the marking. In England, the year of marking commences on 19 May, the feast day of Saint Dunstan, patron saint of gold- and silversmiths. In other nations, such as Poland, the hallmark is a single mark indicating metal and fineness, augmented by a responsibility mark (known as a sponsor's mark in the UK). Within a group of nations that are signatories to an international convention known as the Vienna Convention on the Control of the Fineness and the Hallmarking of Precious Metal Objects, additional, optional yet official, marks may also be struck by the assay office. These can ease import obligations among and between the signatory states. Signatory countries each have a single representative hallmark, which would be struck next to the Convention mark that represents the metal and fineness.

History

Ancient Byzantine hallmarks

The control or inspection of precious metals was an ancient concept of examination and marking, by means of inspection stamps (punch marks). The use of hallmarks, at first on silver, has a long history dating back to the 4th century AD—there is evidence of silver bars marked under authority of the Emperor Augustinian around AD 350—and represents the oldest known form of consumer protection. A series or system of five marks has been found on Byzantine silver dating from this period, though their interpretation is still not completely resolved.

Late Middle Ages

From the Late Middle Ages, hallmarking was administered by local governments through authorized assayers. These assayers examined precious metal objects, under the auspices of the state, before the object could be offered for public sale. By the age of the craft guilds, the authorized examiner's mark was the "master's mark", which consisted frequently of his initials and/or the coat of arms of the goldsmith or silversmith. At one time, there was no distinction between silversmiths and goldsmiths, who were all referred to as *orfèvres*, the French word for goldsmith. The master craftsman was responsible for the quality of the work that left his *atelier* or workshop, regardless of who made the item. Hence the responsibility mark is still known today in French as *le poinçon de maître* literally "the maker's punch". In this period, fineness was more or less standardized in the major European nations (writ: France and England) at 20 karats for gold and 12 to 13 lots (75% to 81%) for silver, but the standards could only be partly enforced, owing to the lack of precise analytical tools and techniques.

Modern hallmarks



Hallmark for gold

In the modern world, in an attempt at standardizing the legislation on the inspection of precious metals and to facilitate international trade, in November 1972 a core group of European nations signed the Vienna Convention on the Control of the Fineness and the Hallmarking of Precious Metal Objects. Articles which are assayed and found by the qualifying office of a signatory country to conform to the standard, receive a mark, known as the Common Control Mark (CCM), attesting to the material's fineness. The multi-tiered motif of the CCM is the balance scales, superimposed, for gold, on two intersecting circles; for platinum, a diamond shape and for silver a mark in the shape of the Latin letter "M".

This mark is recognized in all the other contracting states, including: Austria, Cyprus, the Czech Republic, Denmark, Finland, Great Britain, Hungary, Ireland, Israel, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Sweden, Switzerland and Ukraine (see links below). Other nations monitor the activities of the convention and may apply for membership.

Complete international hallmarking has been plagued by difficulties, because even amongst countries which have implemented hallmarking, standards and enforcement vary considerably, making it difficult for one country to accept another's hallmarking as equivalent to its own. While some countries permit a variance from the marked fineness of up to 10 parts per thousand, others do not permit any variance (known as negative tolerance) at all. Many nations abide by the Vienna system and procedures are in place to allow additional nations to join the Vienna Convention. Similarly, with the consent of all the current member states, the terms of the convention may be amended.

The most significant item currently up for debate is the recognition of palladium as a precious metal. Some member nations recognize palladium as a precious metal while others do not.

Marking techniques

Punching

Traditionally, the hallmarks are "struck" using steel punches. Punches are made in different sizes, suitable for tiny pieces of jewelry to large silver platters. Punches are made in straight shank or ring shank, the latter used to mark rings. The problem with traditional punching is that the process of punching displaces metal, causing some distortion of the article being marked. This means that re-finishing of the article is required after hallmarking. For this reason, and that off-cuts from sprues are often used for assay, many articles are sent unfinished to the assay office for assay and hallmarking.

Laser marking

A new method of marking using lasers is now available, which is especially valuable for delicate items and hollowware, which would be damaged or distorted by the punching process. Laser

marking also means that finished articles do not need to be re-finished. Laser marking works by using high-power lasers to evaporate material from the metal surface. Two methods exist: 2D and 3D laser marking. 2D laser marking burns the outline of the hallmarks into the object, while 3D laser marking better simulates the marks made by punching.

Methods of assay

Precious metal items of art or jewelry are frequently hallmarked (depending upon the requirements of the laws of either the place of manufacture or the place of import). Where required to be hallmarked, semi-finished precious metal items of art or jewelry pass through the official testing channels where they are analyzed or assayed for precious metal content. While different nations permit a variety of legally acceptable finenesses, the assayer is actually testing to determine that the fineness of the product conforms with the statement or claim of fineness that the maker has claimed (usually by stamping a number such as 750 for 18k gold) on the item. In the past the assay was conducted by using the touchstone method but currently (most often) it is done using X-ray Fluorescence (XRF). XRF is used because this method is more exacting than the touchstone test. The most exact method of assay is known as fire assay or cupellation. This method is better suited for the assay of bullion and gold stocks rather than works of art or jewelry because it is a completely destructive method.

Touchstone

The age-old touchstone method is particularly suited to the testing of very valuable pieces, for which sampling by destructive means, such as scraping, cutting or drilling is unacceptable. A rubbing of the item is made on a special stone, treated with acids and the resulting color compared to references. Differences in precious metal content as small as 10 to 20 parts per thousand can often be established with confidence by the test. It is not indicated for use with white gold, for example, since the color variation among white gold alloys is almost imperceptible.

X-ray fluorescence

The modern X-ray fluorescence is also a non-destructive technique that is suitable for normal assaying requirements. It typically has an accuracy of up to five parts per thousand and is well-suited to the relatively flat and large surfaces. It is a quick technique taking about three minutes, and the results can be automatically printed out by the computer. It also measures the content of the other alloying metals present. It is not indicated, however, for articles with chemical surface treatment or electroplated metals.



These two pieces of hallmarked English silver show assay "scrapes," where a small amount of silver was removed from the underside of the item in order to perform a fire assay. The 10 3/4" salver (Richard Rugg, 1759) shows a large scrape. The salt cellar (Robert & Samuel Hennell, 1803) has a much smaller scrape - however the cellar was from a set of at least four, allowing for scrapes to be combined.

Fire assay

The most elaborate, but totally destructive, assay method is the fire assay, or cupellation. As applied to gold bearing metalics, as in hallmark assaying, it is also known as cupellation and can have an accuracy of 1 part in 10,000. In this process the article is melted, the alloys separated and constituents weighed. Since this method is totally destructive, when this method is employed for the assay of jewelry, it is done under the guise of random or selective sampling. For example, if a single manufacturer deposits a lot of rings or watch cases, while most are assayed using the non-destructive methods a few pieces from the lot are randomly selected for fire assay.

Other methods

There are methods of assay noted above which are more properly suited for finished goods while other methods are suitable for use on raw materials before artistic workmanship has begun. Raw precious metals (bullion or metal stock) are assayed by the following methods: silver is assayed by titration, gold is assayed by cupellation and platinum is assayed by ICP OES spectrometry.
