



Silvia Bezzone, Sara Tisti Bulgari Gioielli S.p.A.

Silvia Bezzone graduated in chemical engineering from Turin Polytechnic. After a short period in the field of design and chemical and textile processes, in 2000 she moved to the jewellery industry. Her current field of responsibility is to produce semifinished items made from precision and continuous casting, with relevant wax production departments and test labs to check the metals. She has taken part in numerous national and international conventions, including as speaker. Since 2012 she has been teaching further education courses for the precious metal working industry, dealing in the casting of precious metals at the For.al institute, Valenza.

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RJC Chain of Custody, our experience

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In March 2012, the Responsible Jewellery Council (RJC) published the "Chain of Custody" (CoC) standard for the precious metal supply chain. The aim of this document is to guarantee the "responsible origins" of all material made and machined during internal and external production processes along the entire chain of jewellery creation. "Responsible origins" refers to conflict-free metal, produced, transformed and transported responsibly at every stage of production, from the mine to the refiner, jewellery maker and on to the store and the end customer. In 2015 Bulgari Gioielli was awarded CoC certification. This article illustrates our experience in the metal chain of custody.

INTRODUCTION

The following is a short state of the art concerning the purpose of this article in order to understand the steps leading to current legislation.

The Responsible Jewellery Council (RJC) was founded in 2005 to meet the needs of consumers, who have always requested their jewellery to comply with responsible business practices along the whole supply chain, from the mines through to sale. The initial aim of the RJC has been to develop the Code of Practice (CoP) for the purpose of regulating and checking, via audit, the ethical, social and environmental practices by which every associated company must abide. All RJC members are required to comply with the CoP standard no later than two years after registration and to submit to a check, via audit by an accredited body. The themes dealt with by the association and the items required by CoP certification are as follows:

- Respect for human rights
- Respect for workers' rights and fair working conditions
- Declaration of the origin of metals and diamonds
- Compliance with workers' health and safety rules
- Respect for environmental standards

In 2011, Bulgari was the first in Italy to obtain certification of its Code of Practices (CoP); the following is an extract of the statement by Mauro di Roberto, Bulgari Jewellery Business Unit (Ambiente e giovani per le frontiere del gruppo Bulgari, 2013) during the announcement of this result:

"We were the first in Italy to join the Council for Jewellery Practices, which promotes full transparency on the jewellery market, and our CSR (Corporate Social Responsibility) is a step forwards in this direction,"

What has been achieved to date is just the start of a long journey; in fact once businesses become RJC members and therefore, certified, it is their task to promote these values and to establish a network of certified suppliers and businesses. In 2010 the RJC started working on the standard Chain of Custody (CoC), in a team with its associates and, in March 2012, the relevant standards were published. This latter certification is voluntary and complements the previous (CoP). Its purpose is to guarantee the "responsible origin" of all material made and machined during internal and external production processes along the entire chain of jewellery creation. "Responsible origins" refers to conflict-free metal, produced, transformed and transported responsibly at every stage of production, from the mine to the refiner, jewellery maker and on to the store and the end customer. This standard is applied to gold and metals from the platinum group (PGM), such as platinum, palladium, and rhodium. The areas of application of this certificate are set out by each single member and differently to the Code of Practice, do not

necessarily have to cover each area of the company's business, although they must include:

• All structures used by a member body for extraction, transformation, manufacture, storage, handling shipping and delivery, plus the sale of CoP material.

All outsourcing contractors used to process and produce CoP material.

On 22 August 2012, the US Securities and Exchange Commission (SEC) published the "Final Rule" document for the application of Section 1502 of the Dodd-Frank for metals (gold, tin, tungsten, and tantalum) from war zones, especially the Democratic Republic of Congo and bordering areas, where part of the world reserves of tantalum, tungsten, tin and gold are found.

Findings have shown how the world is becoming increasingly committed to regulating the delicate processes linking the extraction of precious metals, and the sale and trade of minerals as raw materials. This route towards using certified, safely sourced raw materials has already been put in place in other industries, including energy, food and textiles, is now an established guideline. In latter years, the gold industry has also shown the same type of attention to corporate social responsibility.

The impact of sustainability on the whole precious metal and jewel supply line is, to date, considered a necessity by institutions and different organisations within the company, at both national and international levels. This theme in particular points to behaviour

linked to ethical and environmental risk management within a production cycle, such as failure to safeguard work and human rights in raw material supply processes, or the impact of metal working on the environment. Projects underway at international level (for example, the Responsible Jewellery Council) have focused on boosting forms of sustainable development, especially in developing countries, where raw materials for gold items are extracted. At the same time, they have also aimed to boost the competitiveness of the industry by establishing a relationship of trust between businesses and the public-consumers.

In the last few years, buyers have become more aware and attentive not only to quality and style when it comes to jewellery items Made in Italy, but also to the ethical aspects linked to the procurement, workmanship and sale of precious items.

Today company leadership is closely tied to credibility, and shareholders rely on the constant sourcing of excellence that will also reflect on the behaviours and business relations that Bulgari has with its suppliers. Being a part of the luxury goods sector and belonging to a group such as LVMH only adds to the corporate social and environmental responsibility that the Maison must maintain.

On this subject, the company has been able to establish its policies, for example, through its adoption of the Kimberley Process, a partnership with Save The Children, and by being a member of the Board of Directors and the Standards Commission of the Responsible Jewellery Council.

In June 2015 Bulgari Gioielli was awarded CoC certification. "The achievement of Chain of Custody Certification shows once again Bulgari's commitment to promoting responsible and ethical practices

in its business operations, confirming the obligations undertaken on the occasion of the renewal of the RJC Code of Practices Certification, achieved on December 2014» Jean-Christophe Babin – Bulgari CEO

CHAIN OF CUSTODY CERTIFICATON

The CoC standard aims to support requirements concerning the responsible source of materials used to manufacture jewellery during the process stages, from source to point of sale.

To comply with the standard, the following requirements must be met:

- A) Management of the CoC (standard points 1-3):
 - 1. Definition of a management system and the relevant responsibilities
 - 2. Definition of an internal material inspection system
 - 3. Definition of an outside and services supplier management system
- B) Certification of starting material (standard points 4-6):
 - 4. Material of mining origin
 - 5. Material of refining origin
 - 6. Material from pre-2012 stock
- C) Documentation to support the Chain of Custody (standard points 7-10):
 - 7. Statement of qualification for the material
 - 8. Issue of transfer document
 - 9. Market requirements
 - 10. Use of metal sources in conflict areas

Before commencing the certification process, it was necessary to check the source situation, analysing the production flows involved. The following diagram, shown in Figure 1, presents the initial situation of Bulgari Gioielli, which sees various stakeholders involved:

- Banks for the purchase of fine metal
- Internal production lines
- Outside production lines
- Refining service line use
- Suppliers of semi-finished items.

Looking at this diagram, it emerged that all flows of incoming and outgoing metal were not in line with the CoC standard. In fact, a high risk of metal mixing was found.

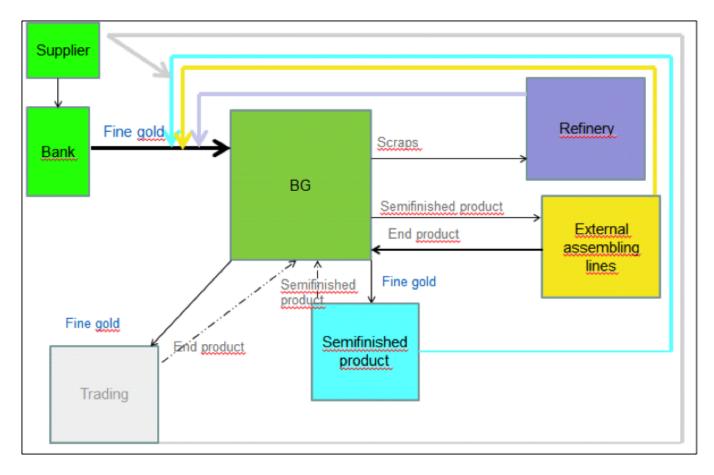


Figure 1 Metal flow diagram

Priority actions were set out to bring the different metal flow lines into line with the CoC indications. The most critical areas were identified as the suppliers of fine metals, the outside refining services and suppliers of semi-finished items that could not be made internally.

Costs and benefits, lead times for metal supply and any transport costs were examined for each item. A preliminary audit was carried out for each supplier of metal or services, to examine the feasibility of the project. The initial choice fell to starting a chain of custody for gold only and to implementing a chain of custody for platinum and palladium at a later time.

The first step was the identification of certified gold suppliers. At the time of the project's start up, there were only two certified suppliers. Both were contacted and the following parameters were compared:

- Procurement costs for raw material
- Lead time at issue of order
- Metal availability

The next step was to guarantee segregation of the metal during the different internal production stages and to activate suppliers of refined and semifinished items. The situation is not yet ready to support this type of standard; there were only two refiners of fine metal available and no certified supplier of semifinished products. The company chose to develop and evolve its own refining and semifinished product suppliers, building up dedicated lines, step by step, and finding solutions to mitigate the risk of mixing metals, to minimise lead time and to make the immobilisation costs for material and transport comparable to those for the management of non-certified metal. Thus a new flow diagram for CoC gold was defined, as shown in figure

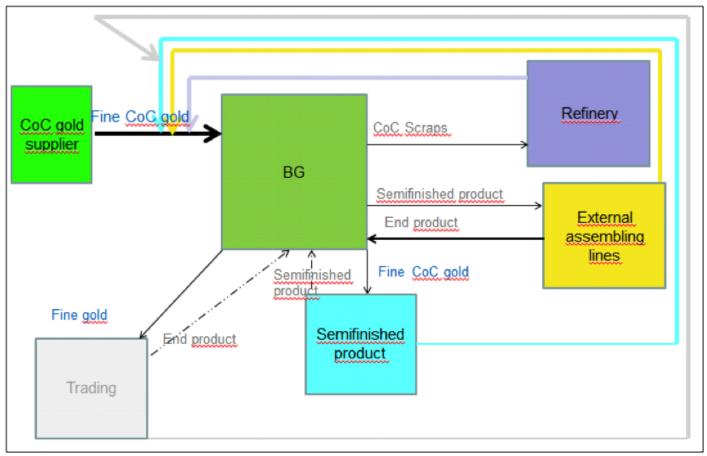


Figure 2: CoC metal flow diagram

At a later time, the metal flows inside the company were looked at. In this case too, a risk analysis was carried out regarding mixing metals and the management and logistics impacts were assessed. To better understand the workload, test jobs were started and internal procedures were defined for:

- Processing
- Metal flow
- Management responsibilities
- Tracking responsibilities

A "visual" method was chosen to look at the passage of information and for the separation of certified and non-certified metals. As can be seen in Figure 2, the colour green is used to show COC gold. It was decided to place certified metal exclusively inside green boxes or bags with the writing "certified metal."



Figure 3 Visual support for the management of production information.

The results of the test stages can be seen in Figure 4. In this diagram we have the internal production flows and external services for management and transformation of certified metal, and the relevant results of risk analyses concerning metal contamination. Internal considerations regarding the risk of contamination for metal are also shown visually. A guarantee of preserving the ethical nature of gold has been implemented by introducing operating instructions; checks for the compliance with same are subject to regular audits carried out by the persons responsible for implementing CoC standards.

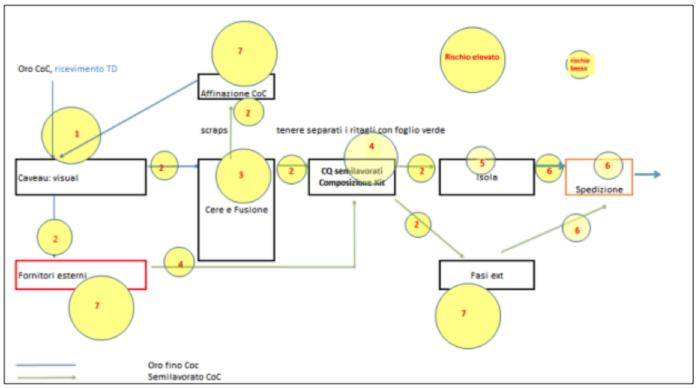


Figure 4: Internal production flow and risk analysis

Risk analysis were carried out for all internal production areas and for each one, operational instructions and procedures were shared based on findings.

One of the major mixing points for metal was found in the initial management stage through to the creation of the job order containing semifinished items made internally and externally, a step represented in Figure 4 points 1-3-4. For this reason, more stringent procedures and checks were applied to this initial stage, on which following processes depend. One of the critical points for keeping CoC metal apart in the subsequent assembly and construction stages of a piece of jewellery, Figure 4, point 5, is the purchase of brazing paste containing ethical metal. Based on our experience, there is currently a limited range of products from a single certified supplier. There have been problems in the management of filings and processing waste; we have chosen to consider filings as non-certified by default until all production lines are supplied only with certified metal.

Another critical point, as mentioned previously, is the external stages, point 7 in Figure 4, for which it is necessary to envisage information and training sessions to ensure compliance with the activities included in the standard. Similar assessments for risk and resulting operational procedures have been prepared and shared with external partners for refining, manufacture of semifinished items, assembly, gem setting and cleaning. External suppliers are also subjected to audits of their compliance with the procedures shared and communicated.

The passage of information to external bodies, as well as a visual system, includes a "transfer document" containing all information concerning the source of the metal. Figure 5 shows a specimen transfer document extracted from the CoC standard drawn up by Bulgari.

Data:	Nume	ro di Docun	nento:			
		Mittente		Destinatario		
Azienda	Bulgari Gioie			da compilare		
Indirizzo		st, Co.In.Or. L. 3/A				
Numero di certificato						
Persona da contattare						
Le informazioni inserite nel Ta	nsfer Document Col	C sana cantan	mi a quanto pre	evisto dallo sta	andard CoC.	
Materiale CoC						
Peso [g]						
DDT SAP						
n' pezzi (solo per prodotto finit	o)					
□ Material	e che prosegue la ca	tona Chain of f	Description also			
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Figure 5 Transfer document used by Bulgari

The transfer document contains information concerning the sender, the recipient, the weight dispatched, as envisaged for routine transport documents. It also contains essential information to guarantee the chain of custody. The standard requires indications to be provided as to the origin of the materials, the type of chain of custody (start or continuing), the initial source of the material being transferred (mine, refining, or stock previous to 2012). As for all quality management documents, the issue date, revision date, person approving and the person writing the document must all be stated. In case of metal from mines, it is necessary to provide more information concerning the origin, ethical nature of the mine and the carriers. It is the responsibility of the guarantor of CoC standard application to ensure that the information in the document is both true and subjected to regular audits.

In case of there being no transfer document, the visual system alone or other type of tracking system is no longer valid because there is no more information concerning the origin of the product being processed and therefore, the metal is downgraded, losing its CoC certification.

If certification is lost, there needs to be a system of reporting and management of non conformities, applicable to both external and internal non conformities. Figure 6 shows the format used to manage non conformities, including the case histories concerning loss of certification, which can be identified in two macro areas: lack of passing visual information or information in transfer documents, use of metal without certification in a stage of production.

RJC - Chain of Custody	SEGNALAZIONE NON CONFORMITA	Rev 1 del 26/05/2015	_
	revisti di seguito: perdita informazione di tra		
	document associato al prodotto), miscelazi		
	risulti impossibile garantire la catena di cus		
Compilare if file in coni cu	ampo ed inviarlo al teamEN all'indirizzo mail	Team BGLEN-	
	silvia.bezzone⊛bulgari.com	rean_coc_cre	
Ordine di produzion	e/ddt]	
		-	
		4	
		4	
		4	
		1	
		1	
		1	
		1	
]	
		4	
		4	
		4	
Motivazione	Mancanza bollino verde/ busta	6	
	Mancanza bollino verder busta	0	
	Metallo miscelato in produzione	0	
	recure insection in productone	0	
	Aggiunta metallo non Coc	0	
		-	
	Perdita informazione	0	
	Altro (specificare)	0	
Segnalato da			
data			
N.B. non vengono prese	in carico segnalazioni incomplete	,	
	-		

Figure 6: Sheet to record and communicate loss of CoC certification

The internal process includes regular audits of non conformities and preparation of plans to reduce the causes of loss of certification, as envisaged in other quality management standards. Figure 7, for example, includes the causes of non-compliance found in the first 3 months after obtaining certification.

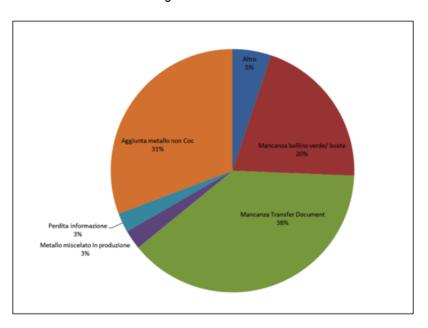


Figure 7: Audit of causes of CoC certification loss

The two main causes are the lack or incompleteness of information in the transfer documents and the addition of uncertified metals. Actions have been undertaken for the automatic issue of the transfer document from the SAP system, in addition to the issue of the transport document, and additional audits have been put in place in collaboration with external suppliers of the causes for the addition of uncertified metals. The main cause has been indicated as the use of uncertified welding paste or alloys. Bulgari Gioielli's action to guarantee better management of CoC gold

has been to provide third parties with welding sheets and pastes containing only certified metal and to eliminate the uncertified metal used previously from the production cycle.

All of the above activities are preparatory for the audit stages performed by an outside body with RJC accreditation. The audits consist of three steps. The first step required in the standard is a self assessment to highlight all of the documents and supporting activities for CoC metal; the second step is a pre-audit in which the maxi flows of metal are analysed. The third step is the audit itself.

Figure B shows the results of the self-assessment by Bulgari Gioielli in graph form. The self-assessment includes the ten points needed to satisfy the CoC standard, as mentioned at the start of this document. During this stage, there are no non conformities. The resulting conformities were 23 out of a possible 29. Some items in the self-assessment were not applicable to jewellery manufacture, but rather they were more suited to companies in which the business is the trade and refining of metals.

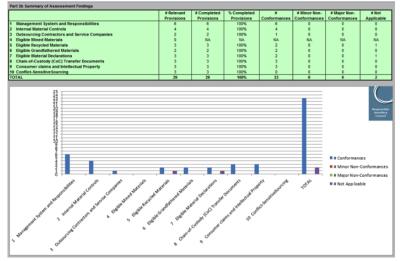


Figure 8: Self-assessment result

The self-assessment is the guide used to carry out the audit. During the audit stages, it is necessary to demonstrate the consistency of the applied management system and the ease of traceability of information concerning the origin of the metal used in the production of a specific piece of jewellery. The original gold needs to come from a company with RJC certification and it must be demonstrable that all supporting documents have been received and that all information in the transfer documents has been transferred to the next stages. One of the audit methods used is to go through the whole path of the jewel in reverse order, starting with the shipping or end customer, to arrive at the purchase document for the metal and all semifinished pieces that will be used to make the final piece of jewellery. For a production company such as Bulgari, as already mentioned, there may be some stages of external work. The award of external production is also checked during the audit for additional checks. All concerns involved in the management system for certified gold need to have a copy of the envisaged assessment for the standard, providing answers to the four control points put in place. Figure 9 shows the results of an audit carried out at an external supplier.

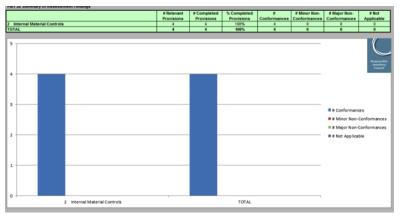


Figure 9 Assessment of the outsourcing contractor

The involvement of an external network is strategically important to achieve results, both in terms of the amount of pieces made and in terms of a return of processed metal that can maintain its status as certified gold as well as its original identity.

CONCLUSIONI

As part of the purpose of this item, we have included a short description of the state of the art in order to understand the developments of this certification. This course began in 2013 and an initial target was achieved in 2015, with the completion of the other actions being scheduled for 2017.

Since 2005, the year in which the Responsible Jewellery Council was founded, a need has been felt to comply with the increasing needs of consumers, who are the heart of our business and who have continued to ask the luxury goods industry more than any other, to comply with responsible business practices along the whole supply chain, from raw material through to the packaging of the product presented in the boutique.

Our company is the first in Italy, following the dramatic events caused through terrorism which often finds economic resources in the illegal trafficking of raw materials such as oil and precious metals and stones, to have decided to undertake this challenging path in order to define and track the source of each and every material used in the production of our gems. Since this subject requires maximum, all-round attention, we have raised awareness in all our contractors and suppliers, who have identified and share the importance of this subject and who have also adapted to become an active part of the rules defined.

The costs of this activity, which would have been significant in any business, are in this case decidedly lower compared to the importance of the subject and also of the damage that comes from unethical trade, which does not respect the environment or take the wishes of the end customer into account.

Fortunately, both European and US legislation is moving towards rules that will clearly define the responsibility of each and every stakeholder in the production line. It is hoped that within a few years, every Italian and European company will have put similar internal procedures in place and will play an active role in this important area.

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Dodd-Frank act: www.cftc.gov/LawRegulation/DoddFrankAct/index.htm