



BANQUE CENTRALE DU LUXEMBOURG

Euro coins – training material



Objectives of the training material

Objectives

At the end of this module trainees should have obtained insights and competences to identify the:

- main characteristics of euro coins
- denominations of euro coins
- different types of euro coins
- security features of euro coins
- unfit coins for circulation.

Euro coins – general information

- It is the responsibility of each Member State to issue coins.
- The European Central Bank has to approve the volume of coins that euro area Member States may issue each year.
- In Luxembourg, the BCL puts into circulation euro coins issued on behalf of the Treasury (Article 18 of BCL organic law)
- The circulation coin series consists of eight different denominations: 1, 2, 5, 10, 20 and 50 cents, 1€ and 2€ coins, and is legal tender in all Eurosystem countries.
- The informal Ecofin Council in Verona decided in April 1996 that euro coins should have a common European side and a distinctive national side on the obverse.
- The common designs for the different denominations were chosen by the Heads of State or Government of the Member States at the Amsterdam European Council in December 1997, following a competition organized by the European Commission. The designs for the national sides of the euro coins were decided by each Member State.
- There are three types of euro coins: Circulation coin, commemorative and collector coin.
- Collector coins are legal tender only in the territory of the issuing Member State.

Common European side



The common sides of the eight denominations were designed by Luc Luycx who, by focusing on the theme “Objectives and Ideals of the European Union”, envisaged three different designs for the common side, presenting variations of the map of the European Union, on a background of parallel lines that join the 12 stars of the flag of the European Union.

Regarding the 1€ and 2€ coins emphasis is on unity, with the Member States which, at that time, constituted the European Union as an integrated whole.

Following the enlargement of the European Union, a decision established that the common sides of the 10, 20 and 50-cent coins and also the 1€ and 2€ coins which used to represent the European Union before the enlargement from 15 to 25 Member States in 2004 should be changed so that all Member States of the European Union would be represented in the future.

Accordingly, coins issued after 2007 have a new design representing the entire European continent.

The common side of the 1, 2 and 5-cent coins have not been changed, given they represent Europe in relation to the world.

National side

- The national side of the circulation euro coins is the responsibility of the issuing Member States.
- The designs used for the national sides of the euro coins should not be changed, except in the case of a change of the Head of State depicted on a coin.
- Currently, euro coins are legal tender in 19 of the 27 Member States of the European Union, including the overseas departments, territories and islands that are part of or associated with euro area countries. These countries constitute the euro area.
- The micro-states of Andorra, Monaco, San Marino and Vatican City also use the euro under a formal agreement with the European Union, as do Kosovo and Montenegro, but these without a formal agreement.
- The chosen designs represent many relevant national motifs that go from the representation of the same design in every denominations (for example, Belgium) to a different design for each coin (for example, Italy). The designs incorporate 12 stars that completely encircle the national design, including the indication of the year and name of the issuing Member State, which may be represented through an abbreviation.

National side - Examples



Germany



Luxembourg



Austria



France

All 23 national sides of 2€ coins can be found at this link :

https://ec.europa.eu/info/business-economy-euro/euro-area/euro-coins-and-notes/euro-coins/national-sides-euro-coins/austria_en

Luxembourg national side

- By mutual agreement between the Sovereign House and the Luxembourg Government, the Luxembourg national side of the euro coins was designed by the artist Yvette Gastauer-Claire.
- All coins bear the effigy of His Royal Highness Grand Duke Henri. They bear the year of issuance and the legend of Luxembourg written in Luxembourgish ("Lëtzebuerg").



Dimension and colour

Visually, the Euro coin denominations are distinguished by:

■ Dimension

- The higher the value of the coin, the bigger its size, with the exception of the 10-cent coin and 1€. The 10-cent coin is slightly smaller than the 5-cent coin and the 1€ is slightly smaller than the 50-cent coin.

■ Colour

- The coins can be gathered in 3 groups of colours : copper, golden and silver.
- The 1, 2 and 5-cent coins have a dark red colour (copper), the 10, 20 and 50-cent have a golden colour and the 1€ and 2€ coins have two colours, golden and silver.

Common characteristics

Every denomination of the circulation euro coin shares common characteristics.

■ Denomination

- The euro coin series consists of eight denominations with denominations of 1, 2, 5, 10, 20 and 50 cents and 1€ and 2€ coins.
- Euro coins have on their common side the designation "EURO" or "EURO CENT" depending on their denomination.

■ Core

- The core is the central area of the coin where the design is depicted. On bi-metallic coins it is characterized by a different colouring. Circulation euro coins can be divided into three groups, bearing similar designs on their common side:
- Group 1 – 1, 2 and 5-cent coins; Group 2 – 10, 20 and 50-cent coins; Group 3 – 1€ and 2€ coins.

■ Edge

- Each denomination displays a specific edge in terms of diameter, thickness and shape.

■ Luc Luycx Insignia

- Luc Luycx, graphic designer of the Royal Belgian Mint, was the winner of the contest organised by the European Commission for the design of the European common side. Its initials are represented by two overlapping "LL".

■ 12 Stars

- The design is beneath a background of parallel lines joining the 12 stars of the flag of the European Union.

Technical and chemical information

Face value	Diameter in mm	Thickness in mm	Weight in g	Form	Chemical composition
1 Cent	16,25	1,36	2,3	round	Copper-Steel
2 Cent	18,75	1,36	3	round	Copper-Steel
5 Cent	21,25	1,36	3,9	round	Copper-Steel
10 Cent	19,75	1,51	4,1	round	Nordic alloy CU89Al5Zn5Sn1
20 Cent	22,25	1,63	5,7	round with some deep grooves	Nordic alloy CU89Al5Zn5Sn1
50 Cent	24,25	1,88	7,8	round	Nordic alloy CU89Al5Zn5Sn1
1€	23,25	2,125	7,5	round	Nickel-Brass CuZn20Ni5
2€	25,75	1,95	8,5	round	Copper-Nickel Cu75Ni25 3 layers Copper-Brass/Nickel/Nickel-Brass CuZn20Ni5/ni12/CuZn20Ni5

Common characteristics



Commemorative coins

- Circulation coins may have commemorative issues in order to celebrate events, ephemerides and personalities of national or international relevance.
- In case of temporary vacancy or provisional occupation of the function of Head of State, Member States may equally issue a commemorative coin.
- The commemorative coin issue falls on the 2€ coin because of its diameter and technical characteristics, which provide adequate protection against counterfeiting.
- Commemorative coins are legal tender throughout the euro area and must be accepted just as any other euro coin.
- In Luxembourg, commemorative issues are approved by the Minister of State and the Minister of Finance.
- Commemorative coin issuance is limited to two coins per year per issuing Member State, even though a supplementary collective issuance by all participating Member States to mark a European event is possible. Commemorative coins show a common design on the national side, as well as the name of the issuing country and the legend referring to the celebrated event in the respective languages.

Selected examples

2014



50th anniversary of the accession to the throne of Grand Duke Jean

2015



15th anniversary of the accession to the throne of Grand Duke Henri

2004



Monogram of Grand Duke Henri

Collector coins

- Collector coins are euro coins issued for collector or numismatic purposes. They may present different types of finish and may be produced using noble metals, therefore they can be sold at face value or at a higher value than face value.
- Collector coins are legal tender only in the issuing Member State, thus the information concerning the issuing Member State must be clear and easily identifiable on the coin.
- To ensure that they are easily distinguished from circulation coins, collector coins show the following characteristics:
 - Their face value must be different from the face value of circulation coins, which may coincide with the face value of euro banknotes;
 - They cannot use similar images to those on the common sides of circulation coins;
 - Their colour, diameter and weight or, at least, two of these characteristics must be significantly different from the characteristics of circulation coins;
 - The edge should significantly differ from those of the circulation coins.

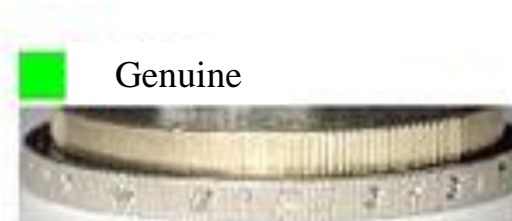


Counterfeit coin detection

- Genuine coins are produced in mints with special minting machines. The high technological standard and precise specifications ensure consistently high coin quality.
- Genuine euro coins have various characteristic features. If one of them is missing, the coin is suspicious and must be examined more closely.
- The following basic rules are intended to provide an initial rough check of suspected counterfeit coins:
 1. **Feel (Relief and edge)**
 2. **Look (first impression, form and color)**
 3. **Check (Magnetic test)**

1. Feel









- The coin image of genuine coins is clearly delineated from the rest of the coin surface. All contours emerge clearly and sharply from the coin base and can be clearly recognised. The roughness of the motifs and the contrast to the rest of the surface is strongly perceptible. In contrast, the coin image of counterfeit coins often appears blurred and softly pronounced. The surface is partly scarred and shows irregularities in the form of spots, smudges, lines or indentations.
- Genuine coins have a pure embossed edge. Depending on the denomination, genuine coins have a rim with different reliefs. On suspect coins, the edge of the coin very often only appears to be uncleanly embossed. The number and the characteristics of the reliefs sometimes deviate significantly from those of real coins.



2. Look

- Due to the pressure with which a coin is struck, the reliefs appear precisely outlined and show detailed motifs on the surface of the coin that are difficult for counterfeiters to reproduce.
- Generally, the motif on the national side is richer in detail. With the help of a magnifying glass, look for the small reliefs, such as the artist's initials, the mint marks, the 12 stars and the central area where the motif is depicted.
- Counterfeits often differ in colour from genuine coins. Coated or plated counterfeit coins become stained after a short time because the coating wears off and the different-coloured base material emerges. This is particularly noticeable in the raised parts of the coin.
- For coins, you need to pay particular attention to the detail around the edge.

The edge of the coins : feel and look

Value	Edge
2 €	
1 €	
0,50 €	
0,20 €	
0,10 €	
0,05 €	
0,02 €	
0,01 €	

3. Magnetic test

- Due to a special security material, the middle part of the 1€ and 2€ coins is slightly magnetic, i.e. the coins are slightly attracted by a magnet and fall off the magnet again when shaken slightly.
- The outer coin ring of the genuine 1€ and 2€ coins and the genuine 10, 20 and 50 cent coins are not magnetic.
- Real 1, 2 and 5 cent coins made of copper-coated steel are strongly magnetic.
- Counterfeit 1€ and 2€ coins, on the other hand, are either not magnetic at all or are strongly attracted by a magnet. Often the ring material of the counterfeit coins is also magnetic.



Unfit coins for circulation

- It is the role of the European Commission, through the national competent authorities of the Member States, to ensure the authenticity and quality of the euro coins in circulation.
- In this respect, it issues Regulations and Guidelines aiming at ensuring genuine and good quality cash circulation.
 - Regulation (EU) No 1210/2010 of the European Parliament and of the Council of 15 December 2010 concerning authentication of euro coins and handling of euro coins unfit for circulation
 - European technical and scientific centre (ETSC) – Guideline on the implementation of Regulation (EU) No 1210/2010 of the European Parliament and of the Council of 15 December 2010 concerning authentication of euro coins and handling of euro coins unfit for circulation.
- In the context of the recirculation of euro coins, each Member State is responsible for establishing the necessary procedures so that all euro coins undergo an authentication procedure.
- The euro coin recirculation activity should be performed by mechanical coin authenticity checking devices or performed manually by qualified professionals.
- During the process, the institutions involved in the coin processing must withdraw suspect or counterfeit coins from circulation, as well as the coins that do not meet the necessary conditions for remaining in circulation.

Unfit coins for circulation

■ What are unfit euro coins ?

- Euro coins unfit for circulation are all genuine euro coins that display defects or coins whose technical and identification characteristics (dimension, weight, colour, edge) have changed over a relatively long period of circulation or by accident, as well as those which have been deliberately altered by a process that could be reasonably expected to have the effect of altering them.
- Euro coins unfit for circulation cannot be made available to the public and must be handed over to Banque centrale du Luxembourg. The reimbursement or replacement of coins which have become unfit for circulation is subject to analysis by the Coin National Analysis Centre (CNAC), which is hosted at the Banque centrale du Luxembourg.

Unfit coins for circulation

- The European Commission has defined guidelines to be observed during the authentication process, in order to withdraw from circulation all euro coins that are damaged or manipulated, provided that the visual identification criteria has been identified. Each professional is responsible for the analysis and segregation of all coins that are visually unfit for circulation. Professional cash handlers must hand over unfit euro coins to Banque centrale du Luxembourg in accordance with the rules set out in Annex II of its Terms and Conditions¹.



Supporting tools

- Support tools such as the following can be used to help the verification of coins unfit for circulation:
 - **Reference coins catalogue** : set of images that display examples of the criteria defined to determine if a coin is unfit for circulation by the European Commission https://ec.europa.eu/info/business-economy-euro/euro-area/anti-counterfeiting/european-technical-and-scientific-centre-etsc_en
 - **Caliper** : useful for measuring the diameter and thickness of the coin
 - **Magnet** : allows verification of magnetic properties
 - **Magnifying glass** : enables the analysis of the surface in relief and the characteristics of the coin

Unfit coins for circulation

- Euro coins may be considered unfit for circulation for the following reasons :
 1. **Dirtiness** is the most subjective characteristic when determining if a coin should or should not be considered unfit for circulation. Euro coins that exhibit a significant degree of dirtiness randomly distributed across the surface to the extent that it compromises the identification of the denomination and security features, raising doubts as to their authenticity, should be withdrawn from circulation. Dirtiness may be due to the contact with different physical and chemical agents, such as humidity, soil, glue, paint, varnishes or any other element which might alter the surface of the coin.



Unfit coins for circulation

2. **Corrosion:** Euro coins which are, accidentally or deliberately, exposed to certain chemical agents undergo major visual changes, such as oxidation, corrosion, discoloration or other levels of physical deterioration. The severe change of the coin's surface raises doubts concerning its authenticity, and it is difficult to identify the detail in relief, namely the reverse and the obverse of the coin. Coins displaying this feature must be withdrawn from circulation.

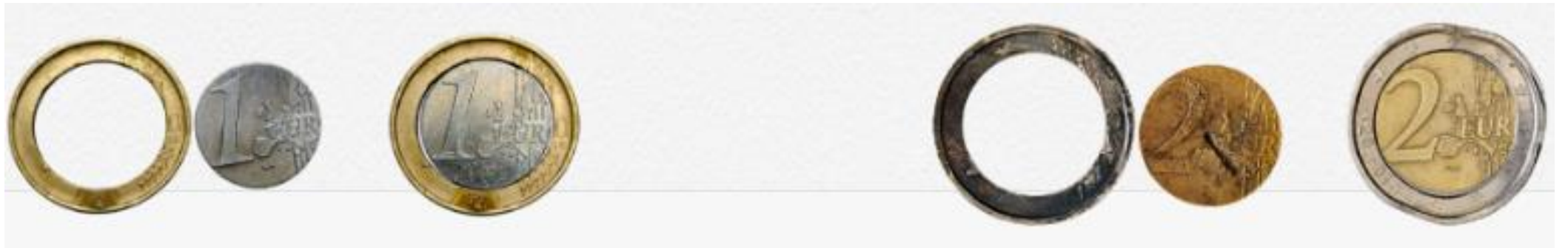


3. **Mechanical damage:** Coins damaged by mechanical processes or deliberate actions that result in significant changes in shape, size or other original technical specifications of the coin. The location or dimension of the mechanical damage is not relevant in this feature, thus any coin with this characteristic must be removed from circulation.



Unfit coins for circulation

- 4. Assembled coins** : A coin is considered assembled when different parts of the same denomination were joined, after mechanical manipulation that caused its separation. This feature is only present on the bimetallic 1 and 2€ coins. The assembled coin should always be considered unfit for circulation, and verification is needed to check if both assembled parts (core and ring) correspond to the same coin. On the 2€ coins the edge lettering and the outer ring should be analysed, so as to ensure the design matches the national side. On the 1€ coins the design of the outer ring should be analysed to ensure it matches the design of the national side.



Unfit coins for circulation

5. **Burnt coins:** Euro coins that by accident or deliberately have been exposed to heat sources causing changes on the surface. Coins from metal incineration and processing plants or from fires may be cleaned by third parties with a view to reintroducing them into circulation. The use of chemical agents or friction cleaning methods causes wear on the raised surface of the coin to give it a dull and discoloured appearance. The alteration of the raised surface creates doubts about its authenticity and it is difficult to identify the features and security features of the coin, so these coins should be withdrawn from circulation.



Unfit coins for circulation

6. **Mint defects:** The production process of minting a coin, from its conception to its distribution, is based on the highest quality standards. For this reason, every preparation and minting stage, as well as every raw material, is carefully monitored and controlled. However, during the production process and for various reasons unintentional irregularities, defined as manufacturing defects, may occur. Occasionally in the packaging process they can be put into circulation. Coins with this characteristic shall be withdrawn from circulation and sent to BCL for laboratory analysis.



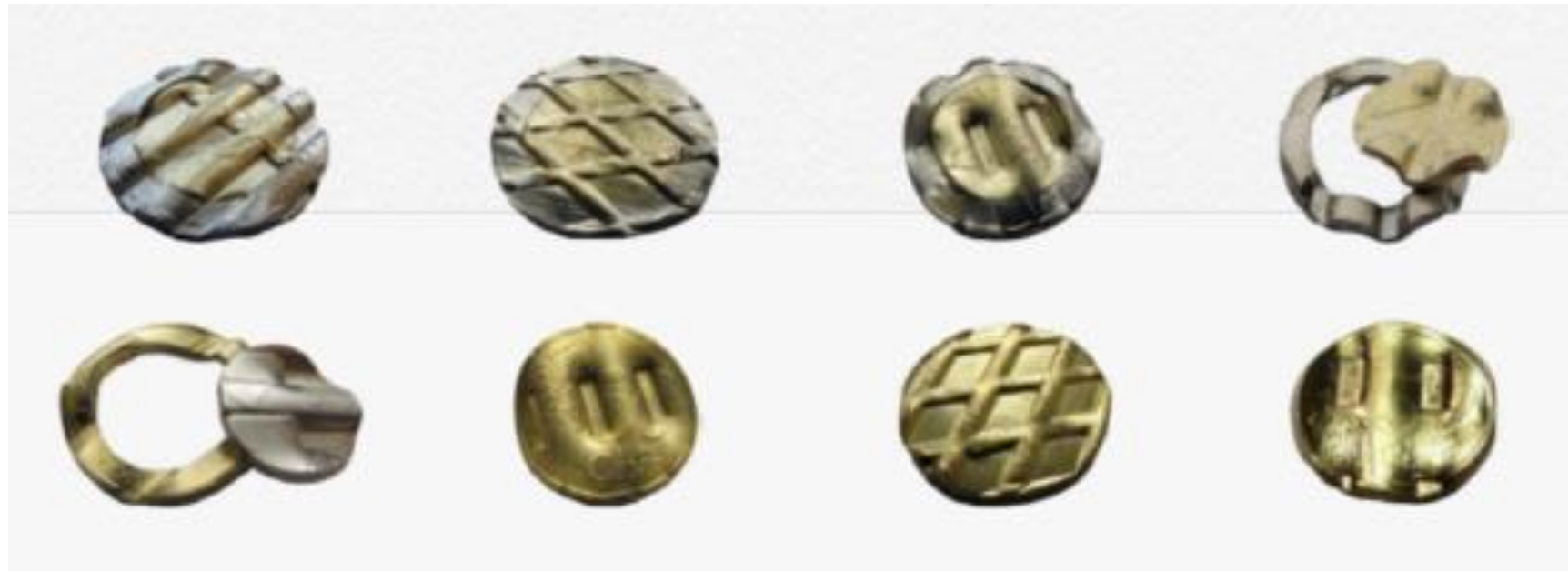
Unfit coins for circulation

7. **Manipulated:** The manipulation is an intentional alteration of the coin's surface, through paintings, stickers or coating. Coins altered for artistic purposes by applying colours to the motifs of the national sides or by placing stickers with different images may cause confusion among users as they are not officially issued by any Mint. Changing the surface of the coin compromises the identification of the features and security features, raising doubts as to their authenticity, and therefore coins showing this feature should be withdrawn from circulation.



Unfit coins for circulation

8. **Demonetised coins:** Member States should ensure that after withdrawal of unfit coins, they are destroyed by means of physical and permanent deformation, so that they cannot be put back into circulation or submitted for reimbursement. Specific patterns, such as wave deformation, diamond mesh, grooves and separation of the core and ring in bimetallic coins are used for the destruction of these coins. This type of “coins” when detected in circulation should be removed and sent for analysis to BCL.



Questions?

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