



The
Royal
Mint

aRMour[®]

Plated Steel Coins and Coin Blanks



The Royal Mint Making Money for Everyone™



The Royal Mint is the world's leading export mint with around 50 countries procuring their circulation coin and coin blank requirements from us each year.

As raw material costs increase, more and more countries are choosing electroplated coins and blanks, which offer significant advantages over homogeneous products.

aRMour® from The Royal Mint is a superior plating process suitable for coins and coin blanks. It offers a variety of benefits compared to other coin and blank products, including covert and overt security features, increased seigniorage, significant cost savings and exceptional wear-resistance which leads to a long lifetime in circulation. These qualities combine to give second-to-none cost of ownership, making aRMour the first choice for coins and coin blanks.

aRMour full-plate technology is available in Nickel-Plate, Copper-Plate and Brass-Plate, for mono-, bi- and tri-colour coins and blanks.

Full-Plate Technology

Full-plate technology is the internationally recognised and accepted standard for plated coins and coin blanks. Countries and Issuing Authorities across the world have adopted this method of plating, including:

- United Kingdom
- Eurozone
- USA
- China
- South Africa
- Russia

aRMour full-plate is a single layer of material, usually 25 microns, that is electroplated directly onto the steel core, which results in a very strong bond between the plated material and the steel core. aRMour coins and blanks have typical lifetimes of 25-30 years in circulation.

The ductility and composition make aRMour blanks the superior choice for striking high quality finished coins.

Nickel and brass full-plate coins and blanks can be recycled and the reclaimed metal sold on, so even at the end of their circulating life, or if the decision is taken to de-monetise, the coins and blanks can contribute to the cost of maintaining circulating coins or introducing new ones.

The Royal Mint works with approved third parties for the secure retrieval of legacy coins from circulation, and with customers to establish a mutually acceptable recovery programme. It is not possible to recover the materials used for dual- and triple-plated coins so this should be taken into consideration when evaluating cost of ownership.



aRMour[®] Plated Steel Coins and Coin Blanks

Copper-Plated Steel

A replacement for bronze, copper and other similar coinage materials, aRMour Copper-Plated Steel Coins and Coin Blanks are bronze/red in colour.



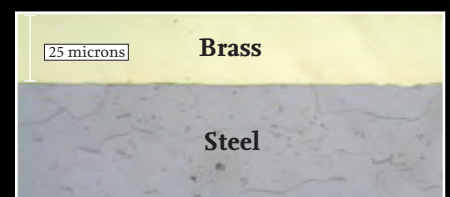
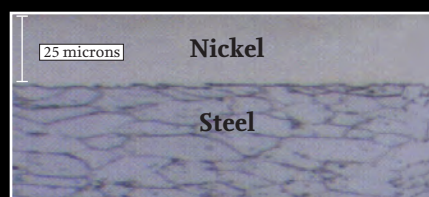
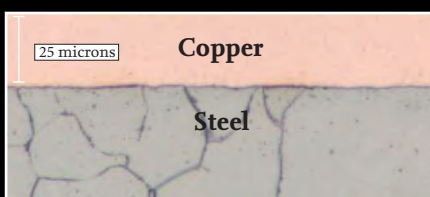
Nickel-Plated Steel

Silver/white in colour, aRMour Nickel-Plated Steel Coins and Coin Blanks have been designed to replace cupro-nickel or similar coinage materials.



Brass-Plated Steel

aRMour Brass-Plated Steel Coins and Coin Blanks are golden/yellow in colour and have been designed to replace homogeneous brass, nordic gold, nickel-brass, aluminium-bronze or other similar coinage materials.



aRMour Copper-, Nickel- and Brass-Plate is typically around 25 microns in thickness and as a result the coins and coin blanks usually have a circulating lifetime of 25-30 years. aRMour products can be supplied as struck coins or as coin blanks ready for striking.

Technical advice and consultation is available for the specification of coins and blanks, as well as design, tooling manufacture and packaging. The Royal Mint can provide expertise and recommendations; our technical team works with mints and central banks across the world to ensure that our customers receive the best possible coins and blanks for their requirements.

The Royal Mint is renowned for its first-class customer service from initial query through to delivery, and after-sales care from dedicated Account Managers gives customers full support throughout the currency procurement process.

For further information about aRMour Plated Coins and Coin Blanks from The Royal Mint, please contact us via the details overleaf.



The Benefits of aRMour®

Superior quality from the world's leading mint

The Royal Mint is the first choice supplier to around 50 countries every year, and uptake of aRMour Plated Coins and Coin Blanks has grown since their introduction in 1983.

Low cost manufacturing, lasting quality

Compared with homogeneous coins or blanks, aRMour Plated Coins and Coin Blanks result in significant cost savings and usually last 25-30 years in circulation.

High process yields

The aRMour plating process employs fewer steps than other plating techniques and offers very high process yields, with highly efficient and consistent quality across orders of millions of coins or blanks.

Proven quality and supply

The Royal Mint has a recognised track record of supply, quality and on-going technical support. Accreditations ISO 9001, ISO 14001, ISO 50001 and SA8000 demonstrate commitment to quality, environment, energy management and a safe workplace.

Superior wear and corrosion resistance

One of the key benefits of aRMour compared to other plated products for circulation coins and coin blanks is the superior wear resistance, which supports a long lifetime in circulation.

World class manufacturing capacities

Large-scale production facilities on a single secure site are capable of meeting our customers' capacity requirements. On-going capital investment ensures that increasing demand for aRMour products will not compromise quality or delivery.

A Wide Range of Security Features

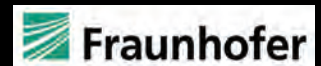
aRMour Coins can incorporate a superior range of security features that can be tailored to suit customers' needs and budgets. A wide variety of security options is available to deter counterfeiting activity.

From latent features and edge lettering, to beading and lettering within a groove, and many other possibilities, the diversity of security options available is far greater than that provided by other suppliers.

Comparison of Plated Coins and Coin Blanks

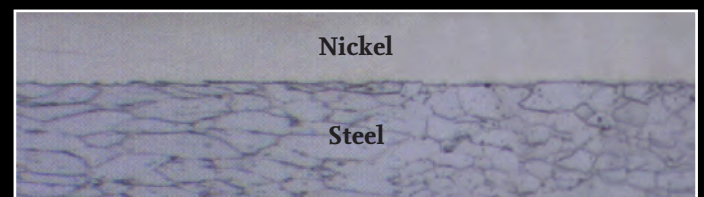
Fraunhofer is Europe's largest application-oriented research organisation and has more than 18,000 employees worldwide. Over a six-month period, Fraunhofer developed an independent coin wear test method and analysed hundreds of coins from all over the world. The key findings of Fraunhofer's research show that:

- All nickel coins wear at 1 micron per year in circulation, including multi-plate, dual-plate, full-plate and solid coins.
- Full-plate coins hold a longer circulation lifespan, as the plated layer is thicker than dual- and multi-plate coins.

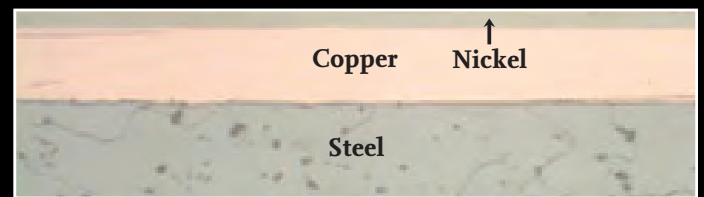


Comparison of Types of Plate

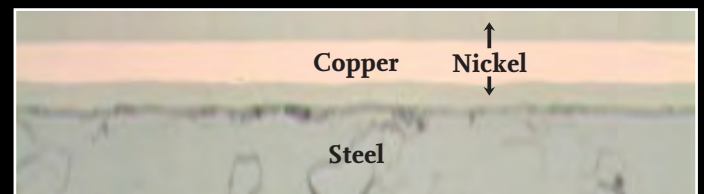
aRMour full-plate technology from The Royal Mint. One layer of nickel is electroplated directly onto the steel core, ensuring that the external layer is securely bonded. The thickness of the plate, typically around 25 microns, delivers a market-leading lifetime in circulation of 25-30 years.



Dual-plate technology combines a layer of copper that is electroplated onto the steel, and a layer of nickel is then added. In this situation, the thin layer of nickel can be just six microns, which will, on average, wear down to reveal the copper layer underneath within six years.



Multi-plate or triple-plate consists of three layers of plate, usually nickel on copper on nickel. As seen with dual-plate, and as Fraunhofer concluded, the thin top layer of nickel can wear at a rate of one micron per year, resulting in the coins looking 'rusty' and having a short lifetime in circulation.



Kenyan 1 shilling produced via the aRMour® process showing one circulated coin retrieved in September 2009 (left) and one uncirculated coin (right). Both produced in 2005.

Coins not shown to actual size.



Ethiopian 50 cent produced via the multi-plate process showing one circulated coin retrieved in September 2009 (left) and one uncirculated coin (right).

Both produced in 2004/2005. The circulated coin shows significant wear with the underlying copper layer showing through, which indicates a potentially short lifetime in circulation.



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