

Patches are Making a Splash

Banknote security is an undisputable must. But what are the developing trends in banknote security, and how are industry suppliers meeting these challenges?

In the 1990s, when surface-applied optically variable features (primarily holographic) were appearing on banknotes, the vast majority were patches. Over the years, they have been supplanted by stripes (along with windowed threads). Today, of the 245 current denominations with an applied stripe or patch with optically variable effects, 70% are the former, and 30% the latter. But of the 13 new banknotes issued in 2024 with a stripe or patch, it was more evenly split with seven featuring a stripe, and six a patch.

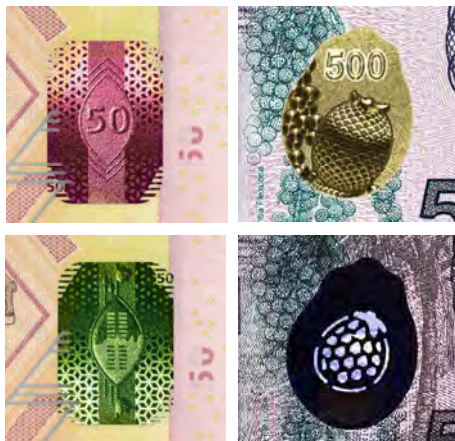
So is the pendulum beginning to swing back again? We had a chat with Clemens Berger, Chairman of the Management Board of Louisenthal, to get an insight on these trends.

He told us 'there is a strong and growing demand toward intuitive and attractive banknote security. We know that technological solutions at third and second level help protect banknotes from sophisticated counterfeiters. But for the public, to authenticate and stop counterfeits at first pass, Louisenthal believes security with inbuilt attraction is a must'.

He positions this into the company's long term perspectives: 'we see continually growing demand for innovation from our customers – we witness the evolution in security demand for micromirror technology with ColourShift. We also notice that, based on the trend for stripes, micromirror patches are becoming more prominent'.

These micromirror patches with ColourShift are unique to Louisenthal. 'With the

RollingStar® (RS) Patch, secure design and dynamics work hand-in-hand. Micromirrors beat the limitations of old-fashioned holographic patches or printed optical features. From a technological viewpoint, micromirrors plus ColourShift cannot be imitated'.



Left: Eswatini have RS patches. Right: Suriname varifeye® CC Patches.

The micromirror platform creates sophisticated security which combines with ColourShift, providing attractive and memorable results. Inherent in this, Louisenthal patches are a powerful package for design integration.

'We nicknamed this 'storytelling' on banknotes, as it enables central banks to project attractive and memorable features on banknotes, which encourage the public to check their banknotes'.

This storytelling was suitably expressed in Louisenthal's recent RS Patch housenote, exhibiting bright and attractive wishing stars from a German fairy tale, 'Star-Money'. Clemens indicated how the dynamic features provide intuitive recognition and authentication. He also pointed out that these are visible even in low light conditions. He further noted that issuers are attracted to such dynamics, and Kazakhstan and Eswatini have RS patches, whilst other issuers – including Suriname, Oman and Guatemala – have varifeye® CC Patches with secure windows behind the patch and ColourChange (CC) effects in reflection and transmission.'

This technology requires specialist methodology and properties, and Louisenthal has optimised production for Patches.

'You need application know-how for roll/roll and sheet application. Currency resilience starts with a reliable and proven manufacturing platform. Our patches are more attractive and more secure than others in the market, many of which are principally based on holography (and not so secure) or the colours don't switch'.

'Our patches are available in different sizes, shapes, with integrated windows (varifeye® CC patch) or without (RS Patch) and with or without demetallisation of the patch shape. The result is a secure patch which is very good to integrate in every banknote design and with the best potential for storytelling. In addition, patches also have a sustainable element to them, as the plastic carrier can have a 70% recycled plastic content'.

'Micromirror patches integrate perfectly into banknote design and have proven to emphatically support holistic banknote security', he concluded.

... Cash Awards Showcase Environmental Change

■ Biobanknote

Biobanknote has developed a process to take shredded unfit banknotes and turn it into a composted ring designed to be placed around newly planted trees.

The rings aids tree growth by improving soil stability, increasing organic matter content in the soil and increasing the ability to retain moisture by approximately 250%. They also increase microbial life and introduce microorganisms and mycorrhizae.

The composting of unfit banknotes requires little infrastructure and is a direct benefit whether used for crops or, as with BiobankMulch, growing trees. Biobanknote offers a service to evaluate banknotes to make sure that they are suitable within the environmental regulations of the country.

■ Banco de Portugal

The Banco de Portugal (BdP) was the only central bank submission. BdP has been working closely with the Banque de France and Casa da Moeda do Brasil on sustainability. Its submission provides details of how it is turning its commitment to achieving carbon neutrality by 2050 into action.

Energy. Since 2020 all its electricity comes from renewable energy and its Carregado site installed a photovoltaic powerplant in 2024, avoiding 510te of CO₂.

Circular economy. BdP started a project in 2023 to find more sustainable alternatives for the reuse/recycling of unfit shredded notes. It is working directly with companies and academia and ran a competition for students to give a second life to banknotes, along with a dedicated conference earlier this year.

Eurosystem coin swaps. BdP

pioneered the establishment of coin swap agreements between National Central Banks in the Eurosystem, reducing the need to produce new coins and reducing unnecessary coin destruction.

Less cash movement. It introduced a regulation to optimise the withdrawal and deposits of euro banknotes. The changes made reduced sorting volumes between 2022 and 2023 by 20%. In 2024 commercial institutions and CIT companies processed nine times more banknotes and 22 times more coins than BdP.

All bids showcase leadership, vision and commitment to the environment. There is much to be learnt from what has been done. Whoever wins, the quality of all of the submissions is first rate.