

Tradition on Banknotes

Linking design, security & functionality



Tradition on banknotes: linking design, security & functionality

Designing and developing banknotes is an exacting task that presents a number of challenges. This sample note from Orell Füssli Security Printing Ltd reflects the company's comprehensive experience in the field and combines appealing design with a high level of functionality. This specimen illustrates some of the best and simplest ways to verify whether a note is genuine and ensure maximum protection against counterfeiting. The obverse side of the specimen incorporates a number of innovative security features, which are described below.

1. Latent image with dual motifs

A two-dimensional latent image is a tried-and-trusted security feature of banknotes, and normally consists of a single motif. From a flat viewing angle, the image flips from positive to negative when rotated from 0 to 90 degrees. Orell Füssli Security Printing Ltd has further refined this microstructure, by adding a second motif that appears at the 45- and 135-degree positions between the starting and final positions. The process offers extremely high protection against counterfeiting by preventing reproduction using xerographic copying or scanner technology.

2. IR see-through register

This innovative security feature consists of two partial motifs printed in precise alignment on the obverse and reverse side of the banknote using the intaglio printing process. The partial motifs match up when viewed under transmitted infrared light. The high-precision see-through register underscores Orell Füssli Security Printing Ltd's commitment to top-quality printing.

3. Relief security screens

Conventional intaglio printing processes use variable line width or, in the case of cell screens, design elements to represent a subject such as a portrait as faithfully as possible. With the Relief security screen system, Orell Füssli Security Printing Ltd is adding a new dimension to the available range of intaglio printing. The system makes it possible to modulate not only line width, but also a free choice of the cell shapes. Thus the cells can be adapted to any object and becomes the image-drawing element in the result. Chiaroscuro effects make it possible to create a lifelike three-dimensional relief image.

4. TwinPerf

TwinPerf is a refinement of the MicroPerf element, combining the usual circular openings with elliptical perforations. Depending on the angle at which light passes through the openings, the viewer can see two different patterns. TwinPerf functions as an intangible optically variable device (OVD): the microperforation remains invisible when the banknote is viewed normally, but the pattern is clearly visible when it is held against the light. The alternate image appears when the note is tilted backwards.

5. Five-colour intaglio

The fifth intaglio colour can be used either to add a further colour to the note's design or to add a colour that the human eye perceives as identical to one of the others but exhibits different machine-readable characteristics. In the latter case, for example, a printed colour may be perceived as identical by humans but have different IR properties, providing enhanced security against counterfeiting.



TwinPerf: Micro-perforation perfectly integrated into the design



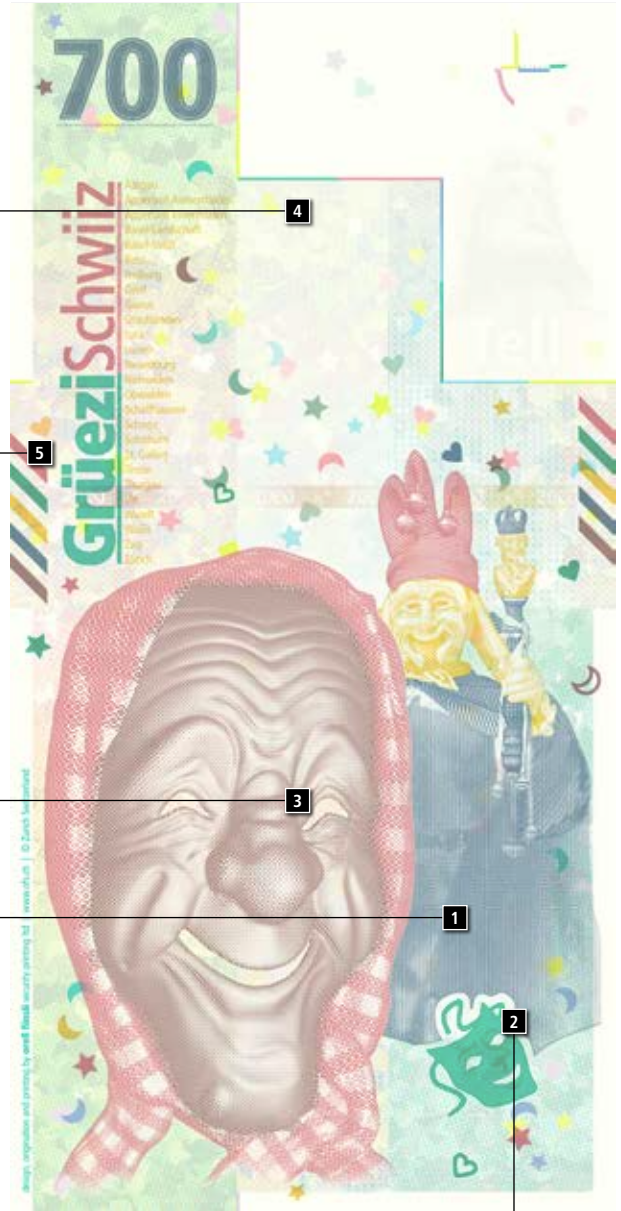
5-colour intaglio printing: for enhanced artistic expressiveness or greater security



Relief security screens: for maximum plasticity



Latent image with dual motif: ideal protection against copiers and scanners



IR see-through register: for maximum intaglio printing precision



Micro see-through register:
printed precision on both
sides



SPARK® colours change as
incoming light varies



Intaglio print: palpable
security



Microprint lettering: a simple
but effective security element



Numbering: makes each
individual note unique

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The functional security concept exemplified in Orell Füssli Security Printing Ltd's specimen banknote continues on the reverse side with further effective features. The note's durability is enhanced by varnishing both sides to protect against soiling and extend its circulation lifetime. This makes it more economical and yields environmental benefits.

1. Micro see-through register

Parts of a motif are precisely aligned on the obverse and reverse sides of the banknote. The fine microstructures reveal a full, clearly recognizable image only when held up to the light and viewed with a magnifying glass.

2. Tactility from intaglio process

The raised print that intaglio printing produces gives these elements outstanding tactility.

3. Microprint lettering

Offset-printed micro-lettering provides simple but effective protection against counterfeiting. It can only be read with a magnifying glass.

4. SPARK®

SPARK® produces a lively, dynamic interplay of colours, ranging from light to dark. The technology is based on optically variable magnetic ink, in which magnetic pigment flakes in the ink are specifically aligned during the printing process so that they reflect incoming light in different directions like tiny mirrors. Even under unfavourable lighting conditions, SPARK® is readily discernible as a direct, unmistakable indicator that a banknote is genuine.

5. Numbering

The two machine-readable numbers give each banknote its unique identity.

Dietzingerstrasse 3
CH-8036 Zurich
Switzerland

Phone +41 (0)44 466 77 11
Fax +41 (0)44 466 79 01

www.ofs.ch

By choosing Orell Füssli Security Printing Ltd you benefit in numerous ways

- Decades of experience and competence in printing banknotes
- Comprehensive support and advice, from the first draft to delivery of the banknotes
- Cutting-edge production technology and highly skilled personnel secure consistently high quality
- A choice of paper or polymer substrate – we supply whichever you prefer
- All banknotes produced by Orell Füssli Security Printing Ltd are printed in Switzerland
- Very personalised customer care is our philosophy

Orell Füssli's history began in Zurich in 1519. The company first produced paper securities in 1827. In 1911, Orell Füssli began working with the Swiss National Bank on the design and production of banknotes. This marked the beginning of the company's long experience as a printer devoted to quality and security. Orell Füssli Security Printing Ltd is a member of the Orell Füssli Group, which is based in Zurich and listed on the SWX Swiss Exchange stock market.