

General Information on the Hong Kong Ten Dollar Polymer Note

1) How are polymer notes produced?

Polymer notes are printed on a unique plastic substrate which is manufactured solely for the printing of banknotes and is not commercially available. It starts as a transparent film, and is then coated with layers of inks. During this coating process, areas are deliberately left transparent for the clear windows, and certain security features will be incorporated into the substrate at this stage.

The production of polymer notes comprises the following steps:

Step 1: Film Production

Specially formulated polymer granules are made into a clear, thin film through a unique bubble process.

Photo 1 – the polymer granules



Photo 2 – the bubble process



Step 2: Substrate Production

The polymer film is coated with various layers of ink incorporating the security features to become the polymer substrate, which is then cut into sheets for feeding into printing presses.

Photo 3 – a sheet of polymer substrate held against light



Photo 4 – cut sheets of polymer substrate



Step 3: Printing

The following printing processes are then applied:

- a) Offset – prints the background colours and images
- b) Intaglio – prints a heavy ink layer of the main and secondary design features to give a tactile or raised-print feeling
- c) Letterpress – prints the serial numbers.

Photo 5 – printing in progress



Step 4: Varnishing

The sheets are coated with a transparent and protective varnish for durability.

Photo 6 – varnishing machine



Step 5: Cutting, Inspection and Packing

The sheets are cut into single notes and inspected on a machine. Individual notes are automatically removed and destroyed if they are not up to the standards. The single notes are then packed for delivery.

Photo 7 – cutting of the notes



Photo 8 – quality control by machine inspection

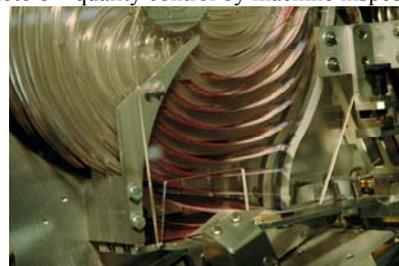


Photo 9 – bundling of single notes



2) What are the new security features?

On the \$10 polymer note, you can find the following security features which are unique to polymer notes:



Clear Window

A see-through window with a numeral 10.



Shadow Image of the Bauhinia Flower in the Clear Window

A watermark-like image of the bauhinia flower integrated into the clear window.



Numeral '10' Shadow image

A watermark-like image of the numeral 10 is visible when viewed with background light.



Colour Shift

The colour of the ribbon on the clear window changes between pink and purple when tilted or examined against light and dark backgrounds.

3) What are the other security features on the \$10 polymer note which can also be found on the purple \$10 paper note?

These include:



Enlarged Numeral

The numeral 10 has been enlarged and has a strong tactile effect.



See-through Picture

When the note is viewed with background light, the patterns on the front and back of the note align perfectly to show a complete picture of a horse.



Concealed Denomination

The numeral 10 appears when the note is tilted.



Reflective Band

A shimmering band showing images of the bauhinia flower and “HK10” when the note is tilted. This has been moved to the central part of the note.

4) What are the key properties of polymer notes?

The key properties are:

- a) Non-porous: They do not absorb moisture (e.g. water, oil and sweat) and thus do not stain or get dirty easily.
- b) Sturdy: The structure of the notes does not easily break down and the notes are difficult to tear.
- c) Temperature: They perform well in a full range of climatic conditions. For temperatures above 120°C, they will begin to shrink slightly.

5) Do polymer notes require different ways of handling?

Polymer notes can essentially be handled in the same ways as paper notes. As with paper notes, new notes sometimes stick together. This attraction will diminish when the notes are put into circulation. When opening a packet of new notes, we can separate the notes in the following ways:



Fanning



Shuffling



Tapping

6) Can polymer notes be folded?

Polymer notes can be folded. But we should avoid applying excessive pressure, which may damage the notes. To unfold the notes, lay them on a flat surface and apply slight pressure.

7) Is it difficult to hand-count polymer notes?

Not at all. As with paper notes, we may count polymer notes using the areas where strong tactility is found, such as the numeral 10 and the text “GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION” on the front.

Hong Kong Monetary Authority
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