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Banknote Paper

Cornerstone[®] and Edgestone[™]

Cost effective durability



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Banknotes are meant to be used and spent, but that means they will get folded, torn and dirty over time. Reducing the quantity of rejected and worn out notes, by increasing durability helps to reduce your replacement rates and to ultimately save money.

Cornerstone® and Edgestone™ tackle two of the most common factors for banknotes being removed from circulation – folded corners and tears to the edges.

Cornerstone uses watermark technology to strengthen the corners of the banknotes meaning that they are less prone to folding. Compared to a conventional banknote, stiffness is increased by on average 60%.

Licensed to many papermakers, and adopted by more than 60 countries around the world, Cornerstone is the most popular durability solution in the world.

Edgestone protects against tears by increasing the density of cotton fibres along the long edges of the banknote. This extra fibre increases the strength of the banknote and makes it harder for tears to occur and to propagate.

Measured by the TAPPI (Technical Association of the Pulp and Paper Industry) T470 test method, the only industry standard test for measuring the force required to initiate a tear, printed banknote paper is on average 30% stiffer with the addition of Edgestone.



Benefits

- Saves money with fewer banknotes being rejected for destruction due to corner folds or torn edges
- Excellent handling and printability of the paper as the additional watermarks provide especially flat ream profiles
- Improved appearance of banknotes in circulation
- Simple to adopt – no change required for cash processing machines or ATMs
- Minimal cost impact
- No impact on printing processes

Technical Information

Property	Impact of Cornerstone® & Edgestone™
Impact on paper weight (grammage)	Some impact due to increased density of protected areas – talk to us to understand more
Impact on paper thickness	None
Impact on physical resistance properties	Positive improvement to corner and edge stiffness
Impact on printing processes	None
Compatible with all security threads	Yes
Compatible with foil stripes	Yes
Compatible with cash processing machines	Yes – no modifications required
Compatible with ATMs	Yes – no modifications required

Contact

For more information on Cornerstone® and Edgestone™ or to find out more about our portfolio of features designed to enhance the durability of your banknotes, please contact us at info@portalspaper.com

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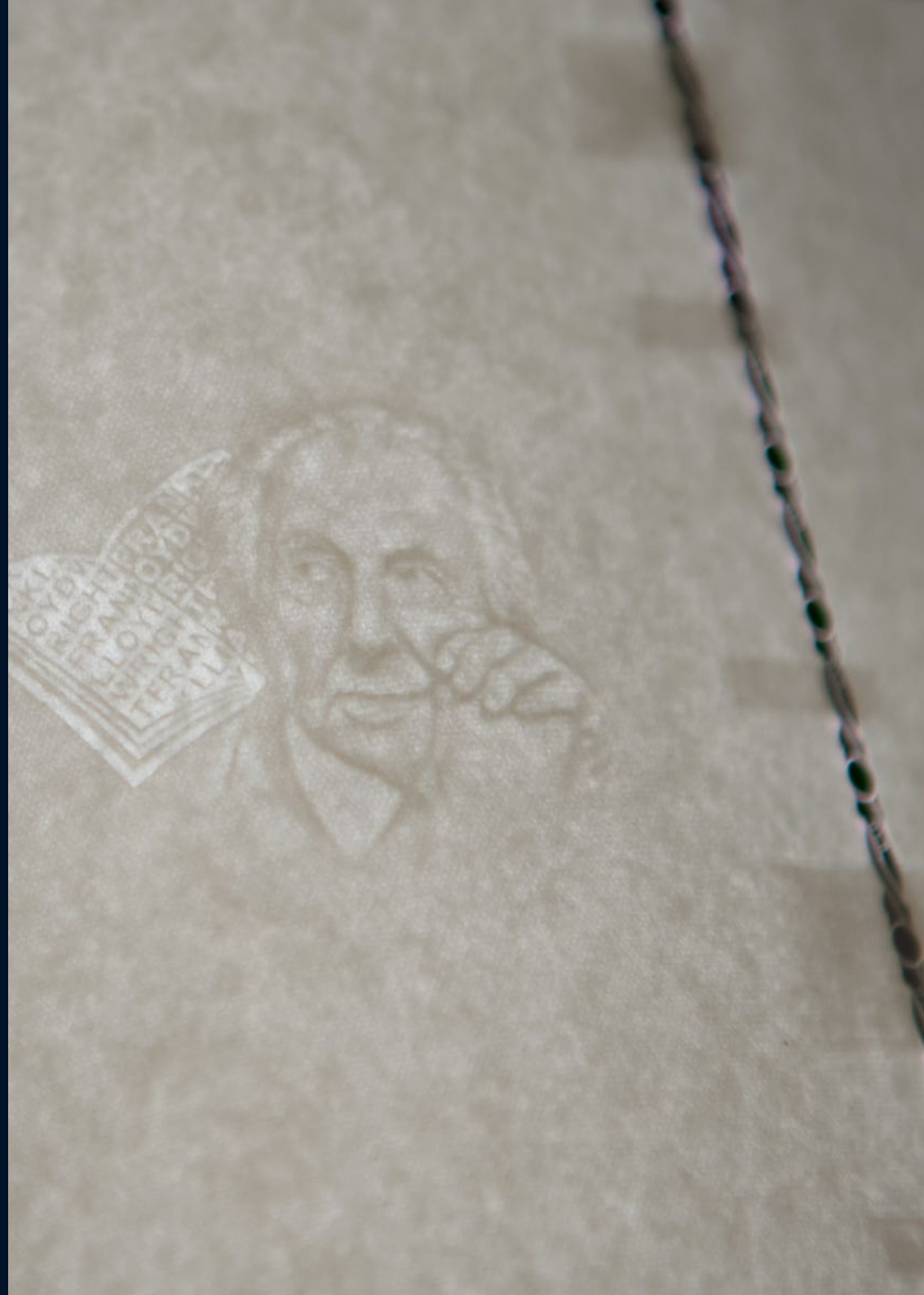
Banknote Paper

Textmark™

The first line of defence
against the counterfeiter



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Staying ahead of the increasingly sophisticated technologies used by the counterfeiter is essential.

With growing access to computers, digital imaging software and scanners, photocopiers and high quality printers, the levels of threat to secure documents is increasing.

Mould made watermarks are in many ways the perfect security feature – they are difficult to accurately replicate and they are widely understood and easy to inspect by the public.

Endorsed by Interpol, who recommend the use of mould made three dimensional multi-tonal watermarks, they are the security foundation of many banknotes issued around the world.

Textmark™ strengthens the protection of a traditional watermark by the addition of personalised bright and/or dark text in the watermark design. The watermark continues to be easy to see and simple to explain, but the underlying technology is complex, making it difficult for the counterfeiter to copy.

Benefits

- Very simple for the public to understand and authenticate
- Minimal cost impact
- Hard to replicate and counterfeit due to the complex design and manufacturing processes involved
- Simple to adopt – no change required for cash processing machines or ATMS
- Can be personalised, making every design unique
- No impact on printing processes

Technical Information

Property	Impact of Textmark™
Impact on paper weight (grammage)	None
Impact on paper thickness	None
Impact on physical resistance properties	None
Impact on printing processes	None
Compatible with all security threads	Yes
Compatible with foil stripes	Yes
Compatible with cash processing machines	Yes – no modifications required
Compatible with ATMs	Yes – no modifications required

Contact

For more information on Textmark™ or to find out more about our

portfolio of features, please contact us at info@portalspaper.com



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Banknote Paper

Platinum[®]

Cost effective
durability



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Banknotes are meant to be used and spent, but that means they will get folded, torn and dirty over time.

Reducing the quantity of rejected and worn out notes, by increasing durability helps to reduce your replacement rates and to ultimately save money.

Platinum® is a pre-print paper coating that improves the soiling resistance of banknote paper.

The coating protects the surface of the banknote from dirt ingress and the uptake of soil. Studies have shown that Platinum can extend banknote life by 30-50% dependant on circulation conditions.

Contact

For more information on Platinum or to find out more about our portfolio of features designed to enhance the durability of your banknotes, please contact us at info@portalspaper.com



Benefits

- Saves money with fewer banknotes being rejected for destruction due to soiling
- Improved appearance of banknotes in circulation
- Minimal cost impact
- Simple to adopt – no design change required and no change required for cash processing machines or ATMs
- No impact on banknote printing processes

Technical Information

Property

Impact on paper weight (grammage)

Impact on paper thickness

Impact on physical properties

Impact on printing processes

Compatible with all security threads

Compatible with foil stripes

Compatible with cash processing machines

Compatible with ATMs

Impact of Platinum®

Increase in grammage to allow for Platinum coating weight – talk to us to understand more

None

Some changes dependant on current specification – talk to us to understand more

If upgrading from uncoated paper then we can advise on the adoption of Platinum and considerations for printing

Yes – with the exception of uncoated lenticular threads

Yes

Yes – no modifications required

Yes – no modifications required

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Banknote Paper

Enigma[®]

Protecting banknotes
from the ultimate
security threat



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Counterfeiting undermines the credibility of both the currency and the Central Bank that issues it, not to mention defrauding the person who discovers they are holding a counterfeit note.

Whilst public security features, such as security threads and watermarks, offer a solid first line of defence, covert security features raise the security protection to the highest level.

Enigma® is a covert security material that is integrated into the paper. Formed of a combination of materials, the Enigma material is chemically engineered to create a bespoke signal - providing Central Banks with protection against the most sophisticated counterfeiting threat.

The technology remains a closely guarded secret but essentially the unique signature of the Enigma material can only be detected using specialist 'black box' technology detectors, only available to Central Banks.

This combination of materials and detectors gives Central Banks certainty that they can quickly screen large volumes of banknotes and guarantee to distinguish between genuine and counterfeit currency.

Enigma® is a registered trademark of De La Rue International Limited



Benefits

- Highly secure covert feature, only available for use in the banknote industry
- Machine readable
- Extremely durable
- Compatible with all other security features

Technical Information

Property	Impact of Enigma®
Impact on paper weight (grammage)	None
Impact on paper thickness	None
Impact on physical resistance properties	None
Impact on printing processes	None
Compatible with all security threads	Yes
Compatible with cash processing machines	Yes
Compatible with ATMs	Yes

Contact

For more information on Enigma® and to find out more about our portfolio of features, please contact us at info@portalspaper.com

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Banknote Paper

Optiks®

Three security
elements in one



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With growing access to the latest digital software, scanners and high quality printers, the threat levels to the security of banknotes is increasing.

Innovation when it comes to security features is therefore paramount in order to remain ahead of the counterfeiters and increase the security of your banknotes.

Optiks® combines three security elements in one to create a truly robust security feature. Combining a window and thread, Optiks can be easily identified and verified by the public, whilst the use of UV fluorescence also provides additional teller security.

Due to the unique way in which the window is formed in the paper and the thread is embedded within the paper substrate itself, Optiks is notoriously difficult to replicate.

With the largest window in the industry and the widest thread in circulation, it is one of the most innovative features available in the market.



Benefits

- Highly secure and hard to replicate
- Window and thread combination is quick to explain and easily recognisable

Technical Information

Property

Impact of Optiks®

Impact on paper weight (grammage)

Minimum of 100gsm required – talk to us to understand more

Impact on paper thickness

None

Impact on physical resistance properties

None

Impact on printing processes

None

Compatible with all security threads

Yes, can be combined with a second embedded thread

Compatible with cash processing machines

Yes

Compatible with ATMs

Yes

Contact

For more information on Optiks® and to find out more about our portfolio of features, please contact us at info@portalspaper.com

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Secure Window

The next generation
of security feature



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The innovation of security features is paramount when it comes to fighting the rising threat of counterfeiters.

As counterfeiters gain access to increasingly sophisticated technology, there is no doubt that the latest security features must continue to push boundaries to maintain the security of our currency.

Secure Window is the latest evolution of security features - offering premium security and endless design possibilities through the combination of a precision cut window and customised foil stripe applied over the window.

Secure Window is easy for the public to see and understand, whilst the technical complexity and customised design makes it incredibly difficult to replicate.



Benefits

- Simple for the public to understand and authenticate
- Can be personalised, making every design unique
- No impact on printing processes
- Simple to adopt – no change required for cash processing machines or ATMs.
- Extremely hard to replicate due to the technical complexity

Technical Information

Property	Impact of Secure Window
Impact on paper weight (grammage)	None
Impact on paper thickness	None
Impact on physical resistance properties	None
Impact on printing processes	None
Compatible with all security threads	Yes
Compatible with foil stripes	Not compatible with second foil stripe
Compatible with cash processing machines	Yes – no modifications required
Compatible with ATMs	Yes – no modifications required

Contact

For more information on Secure Window and to find out more about our portfolio of features, please contact us at info@portalspaper.com