

Feature Definitions and Benefits

Attack Method	Defense	Attribute	Description	Benefit / Caveat
Counterfeit: to create a copy of the original document to perpetrate fraud	Inhibit scanning, copying and digital photography, and make copies detectable	True watermark	Overt– An in-paper feature created by the paper machine altering fiber disposition and density during sheet formation	Will not scan or photocopy on ordinary devices; Photography reproductions are not visible in both transmitted and reflected light as originals Caveat: Recognition of the mark enhances security
		LineMark™	Overt– In-paper fiber disruption created on machine as paper is formed	Will not scan or photocopy on ordinary devices; Photography reproductions are not visible in both transmitted and reflected light as originals Caveat: Line patterns may be simulated if viewed in reflected light only
		Artificial watermark	Overt– Opaque printed image applied to finished papers in various patterns	Resists scan and photocopy on ordinary devices Caveat: Images may be duplicated by other printers
		Invisible fluorescent fibers	Covert– In-paper randomly placed fibers of various lengths and colors that are visible in UV light on both sides of the paper	Will not scan or photocopy in ordinary devices; White-light photography will not reveal the fibers Caveat: Single documents may simulate by print, but multiple documents would reveal print in the same place on multiple documents
		Visible colored fibers	Overt– In-paper; randomly placed fibers in various lengths and colors are included in paper finish and are visible on both sides of the paper	Complicates copying as fibers are fine and may not reproduce Randomness is lost on multiple copies of a single document Caveat: Can be simulated by print in a single document
		Planchette	Overt– Small pieces of paper or plastic that may be coated or colored. An in-paper feature that may be randomly distributed in the paper or limited to a specific area	Complicates copying as the resultant copy shows result on the surface of the paper where the feature is in the paper Special treatments on planchettes may include response to light and temperature enhancing value Caveat: Print or copy simulations may appear real to uneducated individuals
		Security threads	Overt– On-paper feature that inserts a fully embedded (like U.S. currency) ribbon like thread into the paper	Fully embedded versions don't copy on ordinary devices Visible presence or printed messages will not copy
Forgery: to remove or alter document information to perpetrate fraud	Make variable information hard to remove and make change attempts detectable	Toner adhesion coatings	Covert– Coatings applied to the finished papers	Dry toner images are more securely anchored to the paper making removal difficult Removal attempts are detectable by visible damage to the paper Caveat: Heavy ink coverage or certain low-cost toners may mitigate adhesion qualities
		Chemical sensitive stains	Covert– In-paper color indicators are added during paper making that react to chemicals	Bruise-like stains make contact with chemicals highly detectable Caveat: Single indicators work on limited chemicals. Multiple indicators should be used for better security
		Duplex colors	Overt– Fugitive chemical sensitive pastel color is applied to the sheet– usually to back of white paper	Complicates copying as transparency tends to be lost Detectable white spot reveals bleach contact Caveat: May be simulated by printing or other technique
		True watermark	Overt– An in-paper feature created by the paper machine altering fiber disposition and density during sheet formation	Offers clip and paste detection Caveat: Recognition of the mark enhances security
		LineMark™	Overt– In-paper fiber disruption created on machine as paper is formed	Offers clip and paste detection Caveat: Line patterns may be simulated if viewed in reflected light only

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Attempted Fraud via Document	Authenticate a document as an original	Artificial watermark	Overt– Opaque printed image applied to finished papers in various patterns	Validates presence of the mark when held at an angle away from the viewer in reflected light Distinctive pattern permits visual recognition and validation that the mark is the one that accompanies the document
		PenTick Plus™	Covert– An in-paper feature that uses a reactant pen in conjunction with a swiper pen to create a color mark that disappears in seconds	Allows for instant verification of the original paper Doesn't harm the document's legibility
		True watermark	Overt– An in-paper feature created by the paper machine altering fiber disposition and density during sheet formation	Distinctive mark permits visual recognition and validation that the mark is <i>the</i> one that accompanies the document Visibility in both reflected and transmitted light indicative of a true watermark
		LineMark™	Overt– In-paper fiber disruption created on machine as paper is formed	Visibility in both reflected and transmitted light indicative of LineMark™
		Invisible fluorescent fibers	Covert– In-paper randomly placed fibers of various lengths and colors that are visible in UV light on both sides of the paper	Documents viewed in black light will display random fibers indicating an original document
		UV dull	Overt– In-paper feature that reduces or eliminates brighteners from the paper lowering reflectance properties	Authentication possible by comparing originals to ordinary copy bond which is brighter Permits the use of light reactive security features