SECURE PASSPORT DESIGN WITH INNOVATIVE FILM SOLUTIONS

covestro

Makrofol® ID Platilon® ID Certevo® ID

INNOVATIVE PASSPORT CONCEPTS

Next generation passport authentication

Efficiency and convenience are major drivers for secure ID authentication in a complex, ever-changing world. Persistent and ever-envolving instances of ID fraud can put citizen's identification at risk. Secure authentication is threatened by document alteration, counterfeiting, or data tampering.

At Covestro, we are pioneering new ID films for passports. The goal is to satisfy the demand for more secure and counterfeit resistant identity documents. The result is a passport with **increased** durability and **new** advanced security features.

Our advanced materials offer:

· Increased durability for passports
· Easy integration of the latest anti-counterfeiting features
· Flexibility of passport booklet designs
· Improved passport manufacturing efficiencies

At Covestro, our passport concepts consider multiple security needs beyond the next decade. Many years of expertise and curiosity for innovative material solutions enable our customers to stay one step ahead of counterfeiters.

Makrofol® ID

For increased durability

Platilon® ID

For outstanding flexibility in passport booklet covers with abrasion resistance and protection of embedded electronics

Certevo® ID

Polymer film color-matched for passport booklet program and passport end page

Flexible manufacturing of various passport designs by using Makrofol® ID, Platilon® ID and Certevo® ID films


Passport data page
Makrofol® ID
Page 4-5
Hinge material
Platilon® ID
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Embedded electronics
Platilon® ID foam
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Passport cover and
end page – Platilon® ID &
Certevo® ID
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ENABLING SEAMLESS DESIGNS OF HIGHLY SECURE DATA PAGES WITH MAKROFOL® ID FILMS

Secure identity depends on the quality of a document and its resistance to forgery. Hence, state printers, card manufacturers and integrators are constantly working together with their designers, engineers, and technicians to develop even more secure generations of identification documents. By building more sophisticated superstructures from different layers and integrating the latest security features, they aim ahead of the counterfeiters.

In 1989, the world's first polycarbonate identity document came into circulation and since then, high-security identity documents have been built around polycarbonate (PC) films.

The advantages are clear. PC is the only material that combines:
- Durability
- Counterfeit resistance
- Good printability
- High receptivity to laser engraving
- Easy integration of security features

With a layered structure of polycarbonate films, fused together during a lamination process, a monolithic data page is obtained. The PC film layers become inseparable, which additionally makes security features more secure and permanent. PC documents can remain in use for 10 years and have the higher durability compared to alternative materials. Finally, manufacturing and personalizing a polycarbonate-based ID document is more cost effective, compared to other materials.

Data pages made from Makrofol® ID meet the high security standards for identification documents globally, enabling the integration of multiple security features whilst pushing boundaries in efficiency and design.

1

Makrofol® ID332 superlaser transparent film for increased contrast

- Increases the contrast of laser-engraved images at low laser power
- Minimizes the risk of the appearance of burn marks and gas bubbles
- Perfect sharpness of micro laser engraved features
- Incorporates forensic multi-layer-structured security feature

2

Makrofol® ID 4-4 thin white high opaque film for clear windows

- Enables the construction of multiple clear windows with complex shapes
- Makes punching and plugging obsolete, speeding up the manufacturing process
- Allows the implementation of single side or overlapping window constructions

3

Makrofol® ID349 optical variable material (O.V.M) for clear windows

- Color-shifting clear windows for rapid visible verification
- Highly intense UV fluorescent properties
- Incorporates security level 1 to 3

4

Makrofol® ID 1-4
transparent film
for bright holograms

- Maintains the brightness of refractive holograms during lamination
- Available as clear or clear laser-reactive film
- Offers excellent optical properties in clear windows
- The surface structure is polished / fine matte

5

Makrofol® ID298
antidust film
for advanced printing technology

- Achieves high printing speed at thin gauge films
- Reduces attraction of dust particles
- Minimizes the buildup of electrostatic charges
- Simplifies the handling of thin sheets

6

Makrofol® ID354
low fluorescence

- Consistent low fluorescence levels for ID documents
- Low fluorescence of the static and variable elements on the identification documents
- Enables consistent appearance of the invisible printed artwork
- Achieves level 2 security feature for raised laser engraved tactile characters

FLEXIBLE HINGE CONSTRUCTION

Product innovation in passport hinges provides higher security and simplifies the manufacturing process for polycarbonate data pages. Platilon® ID films provide excellent bonding properties when used in passport hinges.

As a result, the passport data pages made from Makrofol® ID polycarbonate cannot be delaminated from the Platilon® ID hinge without the destruction of components. The “fabric-like” properties of TPU results in a thin design and enables extreme flexibility and high tear propagation resistance.

Key benefits of Platilon® ID9144 film:

- High flexibility with tear propagation resistance
- Optimal printability
- Easy to process, convert and laminate
- Applicable for Level 1 and 2 security features


Makrofoi
INTERNATIONAL PASSPORT
Doe
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INNOVATIVE POLYMER FILMS ENABLE NEW PASSPORT COVER SOLUTIONS

Specialized TPU Films allow design freedom while improving tamper-resistance and durability

Identification documents made from select specialized polymers provides the highest security against counterfeiting. This is due to multiple, layered security features within select specialized polymers which are laminated under heat and pressure in a way that makes separation of the layers impossible without tamper-evident damage.

The same state-of-the-art concept used for passport data pages, involving layered and laminated security features, is now available for passport covers. New cover materials lead to a higher security level of passports by enabling embossing and embedding of security features.

These new concepts can also be used in conjunction with the manufacturing process for eCovers. The select specialized TPU polymers for eCovers require no adhesives and only a single lamination process to assemble. The covers can be produced with the existing equipment for document manufacturing.

New passport cover solution enables:

- Seamless integration of embedded and embossed security features in the passport booklets
- Color matching to the passport program by a synthetic interlayer
- Full flexibility in passport cover designs
- Excellent adhesion to hinge and data page
- High durability through monolithic polyurethane-based construction
- Easy recyclability due to pure thermoplastic polymer composition

Key benefits of Platilon® ID5255 film:

- High transparency and light fastness
- High abrasion, chemical, and tear resistance
- High flexibility
- Excellent bonding to Certevo® and other materials through lamination without adhesives

Key benefits of Certevo® ID film:

- Precisely color-matched to the requirements of the passport program
- Builds a secure mono-block structure with the transparent overlay Platilon® ID5255
- Protects security elements, inks, holograms, and metallic foils
- Deep and uniform color appearance
- High light fastness and durability
- Easy to recycle

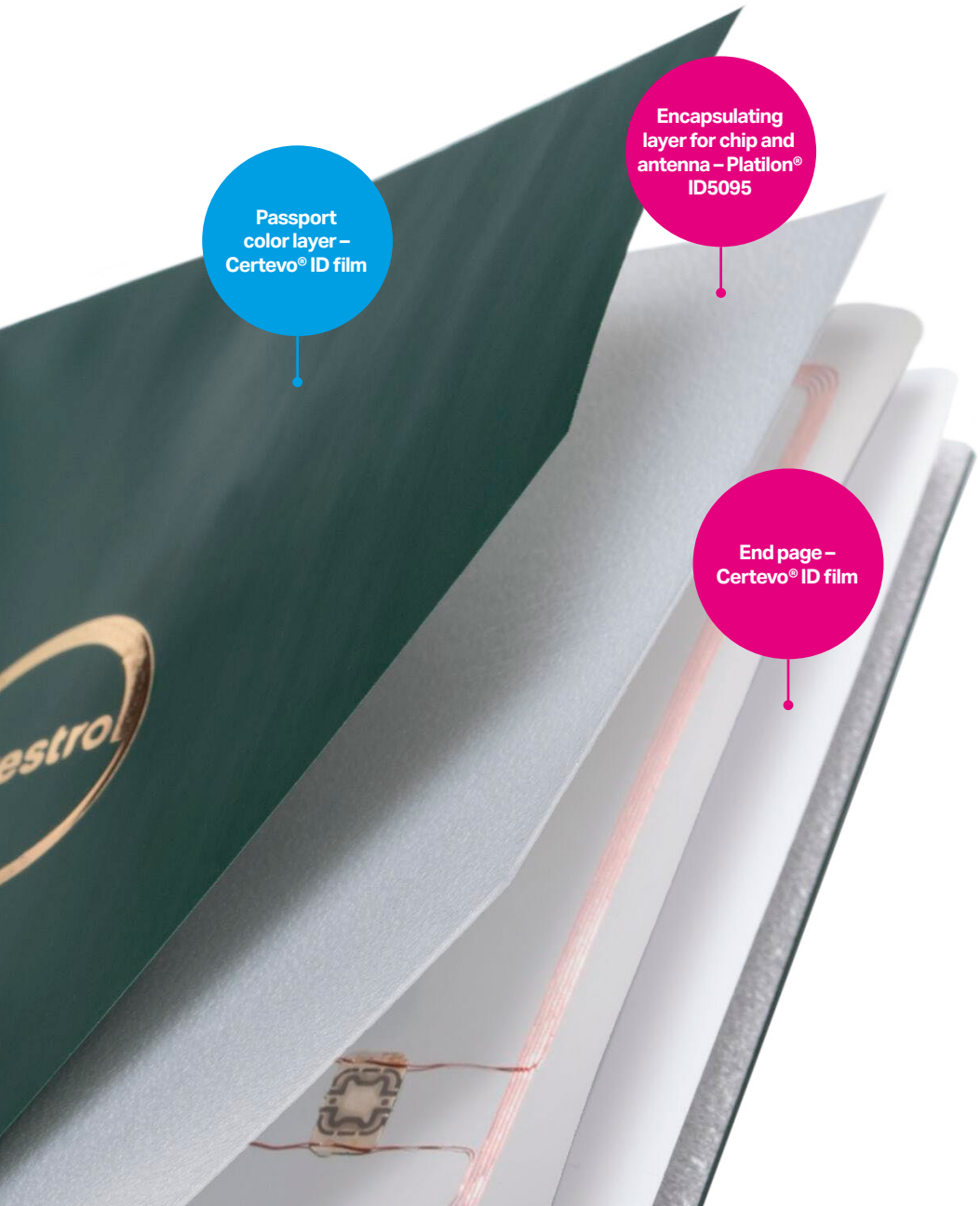
SAFE AND SIMPLE MANUFACTURING OF eCOVER

Single material solution enabling passport recycling

A re-engineered monolithic passport booklet using select specialized polymers is created without the use of adhesives.

A select specialized polyurethane foam layer encapsulates microchips and antennas without the need of a punching process, while also leveling the surface structure of the passport booklet cover to hide the location of the microchip.

The new passport eCover structure, combined with a polyurethane-based end page, provides a pure material solution that offers the potential for high-quality recycling.



Key benefits of Platilon® ID5095 foam:

- Easy integration of electronic components
- Bonding with various materials without adhesives
- Safe and simple embedding of electronic components
- Monolithic structure without adhesives

Key benefits of Certevo® ID end-sheet film:

- Excellent transfer of printing cylinder engraving to the printing substrate
- Intaglio and offset printable
- High tear resistance and flexibility
- High durability and longevity of printed graphics
- Polyurethane-based substrate contribute to high material purity
- High-accuracy blind embossable

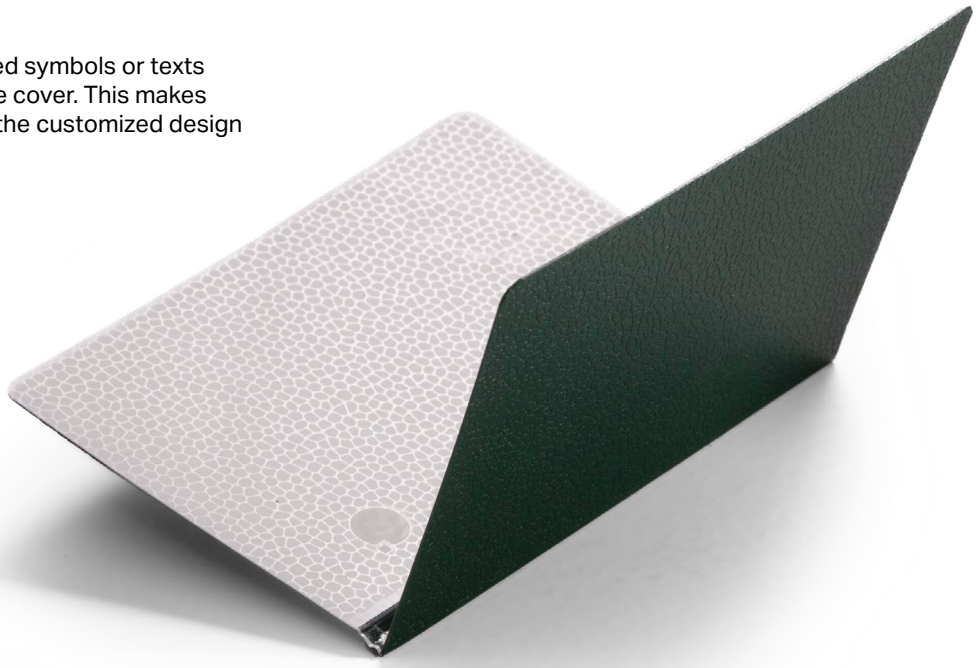
HIGH SECURE DESIGN OF PASSPORT BOOKLET COVERS

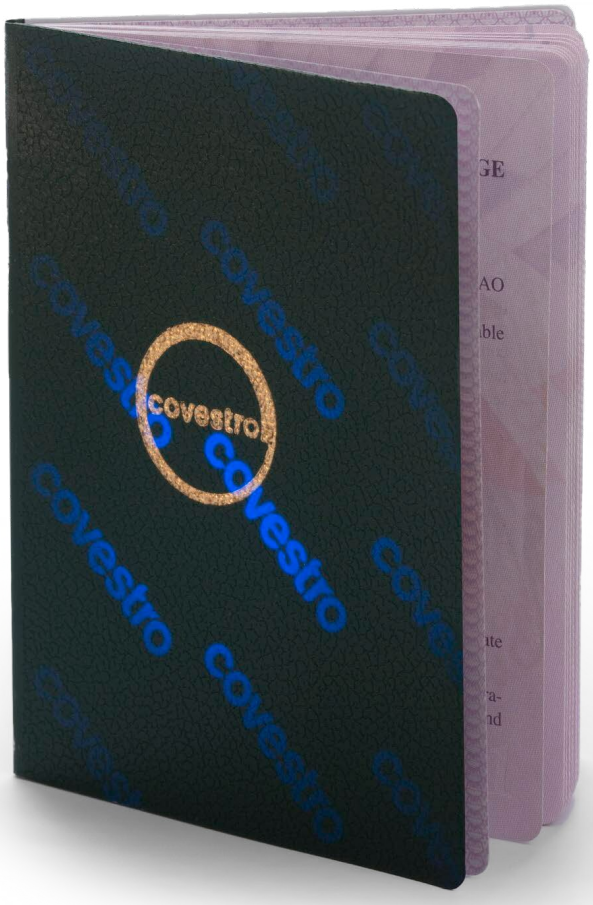
Single polymer material advancing laminated security features

Embedded security features and embossed symbols or texts (e.g., braille letters) can be integrated in the cover. This makes counterfeiting more difficult and elevates the customized design of the passport.

Embedded security features:

- UV fluorescence print
- Gold foiling cover
- Holograms
- Security inks
- Security thread





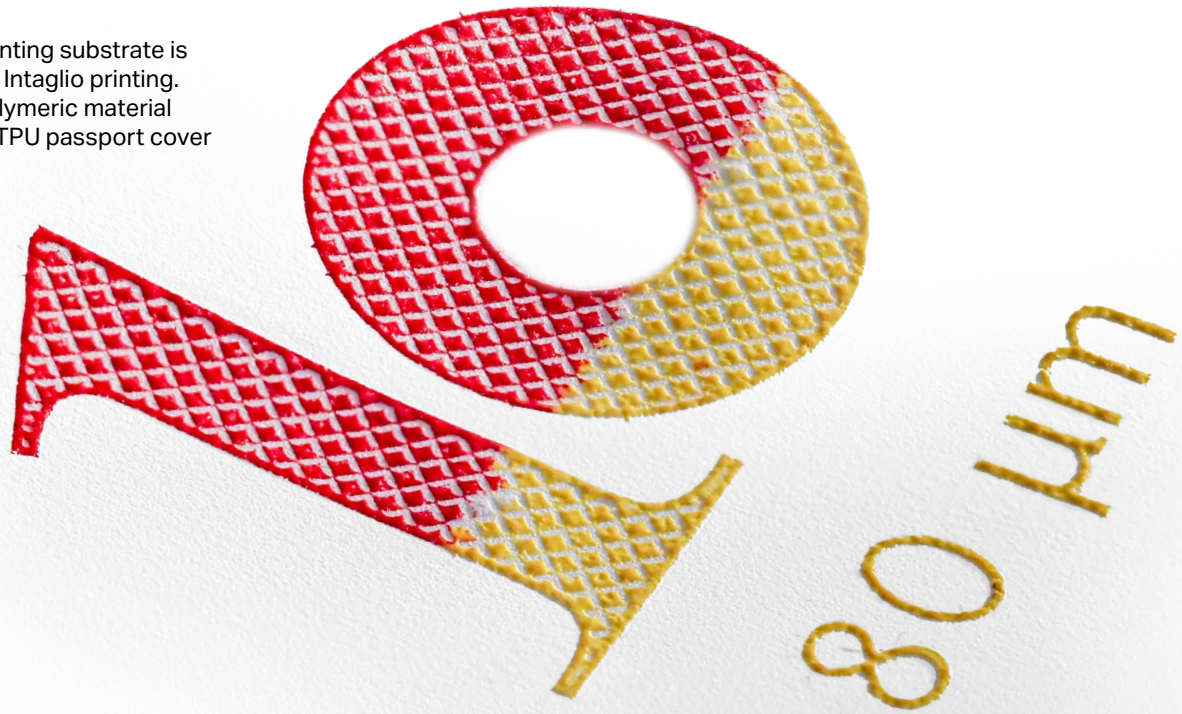
Embossed security features:

- Latent images
- Braille letters
- Macro-structured surface
- Tactile features

INNOVATIVE PASSPORT END PAGE SOLUTION

Polymer film suited for high tactile Intaglio printing

Polyurethane-based printing substrate is designed for offset and Intaglio printing. The use of the same polymeric material composition simplifies TPU passport cover recycling.



Printing and embossing:

- Excellent transfer of printing cylinder engraving to the printing substrate
- Intaglio and offset printable
- High tear resistance and flexibility
- High durability and longevity of printed graphics
- Polyurethane based substrate contributing to high material purity of recycled TPU booklet covers
- High accuracy of blind embossing

Scan to learn more about
Covestro Identification Landing Page

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