

Digital Product Passport Requirements: EU, US and Global Schemes

What's live, what's changed, and the system requirements to cover them

by **Hurricane**

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Executive Summary

The Digital Product Passport has moved from policy concept to operating infrastructure. The EU's DPP Registry went live on 20 July 2026, the first harmonised European DPP standards are in force, and the first mandatory passports, for batteries, arrive on 18 February 2027. In the US, there's still no federal DPP mandate, but Customs and Border Protection (CBP) now accepts Product Passport identifiers alongside entry data through its Global Business Identifier (GBI) pilot. China, Japan, India, the UK and the UN have each launched their own passport or traceability workstreams.

EU · REGISTRY	EU · BATTERIES	EU · FORCED LABOUR	US · UFLPA
20 Jul '26	18 Feb '27	14 Dec '27	+43
EU DPP Registry live	First mandatory passports	Forced Labour Regulation applies	Entities added to the Entity List

The developments that affect planning most directly:

- **EU Registry live.** Launched 20 July 2026 under Implementing Regulation (EU) 2026/1778. It indexes product identifiers, leaves passport data with operators, and validates customs commodity codes on registration.
- **Standards published.** Implementing Decision (EU) 2026/1736 references the first six CEN-CENELEC DPP standards. The final two followed in September 2026.
- **Sector deadlines.** Steel passports are expected from around 2028 and textiles from around 2029. Each delegated act, due between Q4 2026 and 2029, carries a transition period of at least 18 months.
- **New DPP routes outside ESPR.** The Toy Safety Regulation (EU) 2025/2509 and the Construction Products Regulation (EU) 2024/3110 carry their own passport obligations, and the forthcoming European Product Act is expected to add horizontal DPP provisions for CE-marked goods.
- **Green Claims Directive stalled.** The Commission announced its withdrawal in June 2025. Environmental claims now fall under the Empowering Consumers for the Green Transition Directive (EU) 2024/825, which applies from 27 September 2026.
- **US tariff basis reset.** The Supreme Court ruled on 20 February 2026 that IEEPA doesn't authorise tariffs. A temporary 15% global tariff under Section 122 followed from 24 February 2026, and importers may be able to recover IEEPA duties already paid.
- **Forced labour enforcement tightened.** DHS made the largest single expansion of the UFLPA Entity List on 31 July 2026, adding 43 entities. The EU Forced Labour Regulation applies from 14 December 2027.

The EU Scheme (ESPR / Digital Product Passport)

The EU Digital Product Passport is a mandatory digital record created under the Ecodesign for Sustainable Products Regulation, Regulation (EU) 2024/1781 (ESPR). It holds a product's identity, compliance, safety and sustainability information in a structured, machine-readable form. ESPR entered into force in July 2024 and applies in the EU and, under the Windsor Framework, in Northern Ireland.

ESPR is a framework. Passport obligations only bite when the Commission adopts a delegated act for a specific product group, and each act sets its own data fields, access rules and dates. Any business placing products on the EU market, or supplying components into EU-bound products, is in scope regardless of where it's based. Batteries sit outside ESPR: their passport comes from the Batteries Regulation (EU) 2023/1542, which is why they're first.

What the EU DPP requires

- A unique product identifier at model, batch or item level, as the relevant delegated act specifies
- A data carrier (QR code, Data Matrix or RFID) on the product, packaging or documentation, resolving to the passport
- Registration of the identifier, and customs commodity code where relevant, in the EU DPP Registry before the product is placed on the market
- Passport data hosted by the economic operator or a DPP service provider, with a backup copy held by a DPP service provider so the passport outlives the company that created it
- Differentiated access rights, so consumers, repairers, recyclers, market surveillance authorities and customs each see the data intended for them
- Information on materials, origins and substances of concern
- Compliance documentation, including declarations of conformity and technical documentation references
- User manuals, safety instructions and repair and disassembly information
- Lifecycle environmental data as each delegated act requires: carbon or environmental footprint, recycled content, durability and repairability scores
- Conformity with the harmonised DPP standards (EN 18216 and EN 18219 to EN 18223, with EN 18239 and EN 18246 to follow by implementing decision), with all data structured, machine-readable and based on open standards
- Interoperability with other EU systems, including customs, the European Chemicals Agency and, as proposed in the Environmental Omnibus, the SCIP hazardous substances database

Infrastructure status

The Registry. Article 13 ESPR required the Commission to set up the DPP Registry by 19 July 2026. It launched on 20 July 2026 with a testing environment, under Implementing Regulation (EU) 2026/1778, which entered into force on 6 August 2026. The Registry stores identifiers and registration data, and passport content stays with the operator or its service provider. Member States must appoint national administrators by 18 February 2027. The Registry can't yet accept battery registrations, because the battery semantic catalogue hasn't been finalised.

Standards. CEN-CENELEC Joint Technical Committee 24 has delivered the DPP standards series covering identifiers, data carriers, data storage and persistence, application interfaces, interoperability, access control and data authentication. The Commission referenced the first six in Implementing Decision (EU) 2026/1736 in July 2026. EN 18220 sets data carrier requirements and EN 18246 covers data authentication. GS1 Digital Link is a widely used route to compliance but it isn't mandated.

Service providers. A delegated act setting requirements for DPP service providers is scheduled for 2027. Until it's adopted, there's no certification regime for third-party passport hosts, so operators carry the due diligence on their providers.

Rollout timeline

The dates in the ESPR Working Plan 2025-2030 are for adoption of delegated acts. Article 4 ESPR sets a default of at least 18 months between entry into force and application, so practical compliance dates sit roughly 18 to 24 months after each act. Textiles, furniture and mattresses fall between 2029 and 2031 on that basis.

Product group	Legal basis	Delegated act (indicative)	Earliest passport obligation
Batteries (EV, LMT, industrial >2 kWh)	Batteries Regulation 2023/1542	Adopted	18 February 2027
Iron and steel	ESPR	Q4 2026	c. 2028
Construction products (e.g. cement)	CPR 2024/3110	From Q2 2027 (cement Q4 2027)	c. 2028-2029
Textiles and apparel (footwear excluded)	ESPR	Q3-Q4 2027	c. 2029
Aluminium	ESPR	Q3-Q4 2027	c. 2029
Tyres	ESPR	Q3-Q4 2027	c. 2029
Furniture	ESPR	2028	c. 2030
Mattresses	ESPR	2029	c. 2031

Product group	Legal basis	Delegated act (indicative)	Earliest passport obligation
ICT and energy-related products	ESPR	2026-2029	2028 onward
Toys	Toy Safety Regulation 2025/2509	Regulation adopted	By 1 August 2030

The Commission describes these dates as indicative, and the iron and steel preparatory work has already slipped. A mid-term review of the Working Plan is scheduled for 2028.

Related EU measures that feed the passport

- **Destruction ban on unsold goods.** From 19 July 2026, large enterprises may not destroy unsold apparel, clothing accessories and footwear, subject to the derogations in Delegated Regulation (EU) 2026/296. Medium-sized enterprises follow on 19 July 2030, and a standardised disclosure format applies from 2027.
- **Green claims.** With the Green Claims Directive stalled, environmental claims are policed through the Unfair Commercial Practices Directive as amended by Directive (EU) 2024/825, applying from 27 September 2026. Generic claims such as “eco-friendly” without recognised evidence are banned, so passport data is likely to become the evidence base for marketing claims.
- **Environmental Omnibus.** Proposed on 10 December 2025, it would fold the SCIP database into digital tools such as DPPs. Trilogue negotiations are reported to be difficult.
- **European Product Act.** The Commission has confirmed a package revising the New Legislative Framework and the Market Surveillance Regulation, with horizontal DPP provisions and digital labelling for CE-marked goods. Proposals were still awaited at the end of September 2026.
- **Customs reform.** Parliament and Council reached political agreement on 26 March 2026. The EU Customs Data Hub becomes mandatory for e-commerce importers from July 2028 and for all operators by 2034, and the €150 duty exemption for low-value consignments is being removed.
- **Toys at the border.** Under the Toy Safety Regulation, customs may release a toy only after confirming that its data carrier and commodity code match the registry, making a passport check a condition of customs release.
- **Supply chain duties.** The definitive CBAM period began on 1 January 2026, battery due diligence obligations were postponed to 18 August 2027, and the EU Forced Labour Regulation (EU) 2024/3015 applies from 14 December 2027. Each draws on the same provenance data a passport holds.

The EU scheme is sustainability and circularity-first, driven by the Green Deal. It demands environmental claims backed by evidence, and through the toy rules and customs reform it is moving the passport into border control.

The US Scheme (CBP / Altana Product Passports)

The US takes a different route: sector-specific federal rules, voluntary industry programmes and state-level experimentation, with no federal mandate comparable to ESPR. A de facto standard is forming at the border, though.

In October 2025, CBP selected Altana's AI-powered Product Passports to improve enforcement and speed trusted shipments. The passports run through CBP's Global Business Identifier pilot, where importers submit a Product Passport ID with their existing entry data, with no new filing channel. Once CBP has validated a passport, its identifier can be reused for later entries of the same product. Participation is voluntary. Altana reports that shipments previously prone to detention are clearing faster.

What the US model asks for

- A shareable digital record of a product's origin, built to streamline customs clearance
- Bills of materials and supplier data in a standardised, shareable format
- Multi-tier supply chain mapping to raw material level
- **Forced labour (UFLPA).** Documented proof that goods are free of forced labour inputs. DHS added 43 entities to the UFLPA Entity List on 31 July 2026, its largest single expansion, with aluminium, apparel, cotton and tomatoes most exposed. CBP issued updated operational guidance for importers in June 2026.
- **Tariffs and origin.** HTS classification and country-of-origin determination to raw material level. On 20 February 2026 the Supreme Court held that IEEPA doesn't authorise tariffs, invalidating the IEEPA duties. A 15% global tariff under Section 122 took effect on 24 February 2026 for up to 150 days. Section 232 and Section 301 duties remain, and importers need entry-level records to claim IEEPA refunds.
- **Low-value shipments.** The de minimis exemption was suspended for all countries from 29 August 2025, so every parcel now needs classification, origin and value data.
- Conflict minerals disclosure (Dodd-Frank Section 1502)
- Pharmaceutical serialisation and interoperable tracing under DSCSA
- Food traceability under FSMA Section 204, with the compliance date extended to July 2028

State level. California's SB 707 textile extended producer responsibility law required producers to register with a producer responsibility organisation by 1 July 2026, with programmes running from July 2028. New York and Washington have similar bills pending. These laws create demand for item-level material and end-of-life data, the same data an EU textile passport will need.

The US model runs on collaboration between importers, suppliers and CBP. Importers build a product catalogue, trace value chains with suppliers, and share passports with CBP to fast-track entry. Its priorities are trade security and forced labour: proving a clean supply chain and a correct tariff position, with sustainability secondary. Since February 2026, tariff volatility has turned the ability to rebuild an origin and duty position quickly into a cash-flow issue for importers, on top of a compliance one.

Key Differences

Dimension	EU	US
Legal status	Mandatory, product group by product group	Voluntary at federal level; mandatory sector rules (UFLPA, DSCSA, FSMA)
Primary driver	Sustainability, circularity, consumer information	Trade enforcement, forced labour, tariff accuracy
Audience	Consumers, repairers, recyclers, regulators, customs	CBP and commercial partners
Core data	Lifecycle environmental data, substances, repair information	Origin, bills of materials, supplier network, HTS codes
Infrastructure	Decentralised passports plus EU Registry	Vendor platform (Altana) linked to CBP's GBI pilot
Standards	Harmonised EN 182xx series, ISO/IEC 15459 identifiers	No mandated data standard; GBI uses entity identifiers
Enforcement point	Market surveillance, and customs for toys and reformed procedures	Port of entry: detentions, exclusions, penalties

For a company trading on both sides of the Atlantic, the overlap is larger than the differences suggest. Both schemes need the same multi-tier supplier map, material composition and origin evidence. The EU then adds environmental performance and lifecycle data, and the US adds tariff classification and forced labour attestation.

The EU set the template, and other governments are now responding, mainly through batteries first, then broader frameworks.

Jurisdiction	Status	What it means for exporters
United Kingdom	Call for evidence on “digital product records” ran 27 July to 21 September 2026; separate work on batteries, construction products, toys and low carbon industrial products	No GB mandate yet; EU DPP rules already apply in Northern Ireland
China	National DPP standards working group (SAC/SWG41) formed March 2026, secretariat at GS1 China; mandatory lithium-ion battery coding standard approved 31 March 2026	Battery coding from cell to system for goods sold in China, partly aligned with EU rules
Japan	METI’s Ouranos Ecosystem data-sharing framework; ABtC battery traceability platform live since May 2024, certified by METI as a public digital platform	Battery carbon footprint data exchange designed to meet EU Battery Regulation needs
India	Draft Battery Pack Aadhaar Number (BPAN) guidelines from the Ministry of Road Transport and Highways, January 2026	21-character ID per battery pack with lifecycle data uploaded to a national portal
South Korea	K-Eco Design and 3rd Basic Plan for Resource Circulation; EU-Korea Eco-Design Cooperation Forum, July 2025	No passport mandate announced; industry preparing for EU access
Australia	National Framework for Recycled Content Traceability consulted in 2023; industry pushing alignment with EU DPP	Recycled content traceability, likely to converge on EU-style data
Canada	Natural Resources Canada explored an EV battery passport with the Global Battery Alliance	Exploratory; no regulation
Switzerland and EEA	ESPR is EEA-relevant; Swiss exporters follow EU rules for EU sales	Practical alignment with EU requirements
United Nations	UN/CEFACT Recommendation No. 49, adopted July 2025, and the UN Transparency Protocol (UNTP)	Open, decentralised model for verifiable product and ESG data across borders

Two patterns stand out. First, batteries are the lead product everywhere, and each jurisdiction uses a different identifier: the EU’s battery passport ID, China’s national coding standard, and India’s BPAN. A battery maker serving all three needs an identifier mapping layer. Second, China’s working group and the UN’s protocol both offer alternative standards routes, so the cost of interoperability between passport regimes is likely to rival the cost of complying with any one of them.

Areas Requiring Special Consideration

Data content is only part of a passport programme. The areas below are where implementation programmes tend to stall, and each needs its own workstream.

Data confidentiality and trade secrets

Passports require disclosure of supplier identities, material recipes and costs that companies treat as confidential. ESPR's differentiated access rights help, but the operator has to decide, field by field, who sees what. Supplier contracts need clauses on data provision, permitted use and liability for errors.

Data quality, assurance and liability

A passport is a public statement. Under Directive (EU) 2024/825, inaccurate environmental data shown to consumers can be a misleading commercial practice. Programmes need data owners, validation rules, and a decision on which fields need third-party verification.

Security, authentication and anti-counterfeiting

EN 18246 addresses data authentication and integrity. Operators still need to protect against cloned QR codes, tampered RFID tags and spoofed passport URLs, and to manage key rotation and access logs over a product life measured in decades.

Persistence and business continuity

Passports must stay available for the period each delegated act sets, which can exceed the life of the vendor or the company. The ESPR backup copy requirement covers part of this, but exit plans, data portability between service providers, and archive formats need to be built in from day one.

E-commerce and marketplaces

Online sellers must make passport information available at the point of sale. The customs reform makes marketplaces responsible as importers for distance sales from 2028. Marketplace listing data, passport links and customs declarations will have to agree.

Customs integration

The toy rules make a matching passport and commodity code a condition of release. Customs is now a passport issue in the EU as well as the US, and HS code accuracy becomes a passport data quality issue on both sides of the Atlantic.

Regulatory overlap: collect once, use many times

CBAM embedded emissions, EUDR deforestation evidence, the EU Forced Labour Regulation, UFLPA, battery due diligence and CSRD reporting all draw on the same supplier and origin data. Separate data pipelines for each regulation are a frequent source of avoidable cost.

Supplier capability and SME burden

Most of the data sits with tier 2 and tier 3 suppliers, many of them small businesses in third countries. Programmes need simple capture tools, multilingual guidance and a plan for suppliers that can't or won't participate.

Circular economy actors

Repairers, resellers, refurbishers and recyclers are passport users with their own write needs: logging repairs, changes of ownership and end-of-life events. The access model has to cover parties with no contractual link to the brand.

AI and data provenance

Altana's approach uses AI to build supplier networks from trade data. Inferred data needs to be labelled as inferred, with confidence levels, and kept separate from data a supplier has attested. Regulators can be expected to ask which is which.

Consumer experience and accessibility

The consumer view needs plain language, the languages of each market of sale, and accessible design. A passport that satisfies a regulator but confuses a shopper misses half its purpose.

System Requirements: The Superset

Covering the EU, US and emerging regimes takes a federated, access-controlled, mutable record system with strong data governance, able to hold evidence, accept updates across the product's life and present different views to different authorities.

Identity and identifiers

- Assign and manage unique identifiers at model, batch and item level
- Attach data carriers (QR, Data Matrix, NFC, RFID) that meet EN 18220 and link them to the digital record
- Maintain a persistent product ID that survives ownership changes and maps across regimes: EU passport ID, GS1 keys, China battery codes, India BPAN, and CBP GBI entity identifiers
- Register identifiers and commodity codes in the EU DPP Registry and handle its validation responses

Supply chain traceability

- Map multi-tier supply chains to raw material level, covering intermediates and sub-suppliers
- Record the origin of each significant material or component with chain-of-custody logic (segregated, mass balance or book and claim)
- Capture and verify forced labour risk assessments by geography and supplier, screened against the UFLPA Entity List and the EU Forced Labour Regulation database
- Support pre-market submission to the EU Registry and pre-shipment submission to CBP

Product data management

- Store and version material composition, hazardous substances, substances of concern and SCIP data
- Capture environmental metrics using the methodology each delegated act prescribes: carbon footprint, recycled content, water use, energy consumption
- Record repairability, durability, expected lifespan, spare parts and disassembly information
- Maintain compliance documentation: declarations of conformity, test reports, safety data sheets, risk assessments
- Track unsold goods and their disposal routes for ESPR disclosure

Access control and data governance

- Role-based, tiered access so one passport can be presented to consumers, recyclers, partners, EU market surveillance or CBP, each seeing only what they need
- Field-level confidentiality controls and contractual data-use rules for supplier data
- Full audit trail on each data change, with version history and named authorship

Lifecycle update capability

- Mutable record for maintenance, repair, resale, recertification and end-of-life events after manufacture, including writes by third parties
- Workflows for missing supplier data and disputes
- Automatic flagging when a product change, new delegated act or tariff change requires a passport update

Interoperability and standards

- Conformity with the EN 182xx DPP series and ISO/IEC 15459 identifiers
- GS1 Digital Link supported as one of several permitted identifier routes
- API integration with the EU DPP Registry, and data sharing with Altana and the CBP GBI pilot
- Support for verifiable credentials and the UN Transparency Protocol, for cross-border trust without a central platform

Verification and anti-greenwash

- An evidence layer so each claim (recycled content, carbon footprint, substance-free) links to a document or certificate
- Support for third-party verification aligned with Directive (EU) 2024/825
- Clear labelling of attested, measured, calculated and AI-inferred data

Security and persistence

- Cryptographic signing and data authentication in line with EN 18246
- Anti-cloning controls for data carriers and monitoring of scan patterns
- Backup copies through a DPP service provider, data portability between providers, and archive retention for the required period

Tariff and trade compliance

- HTS and CN code classification at product level, kept consistent across passport, registry and customs declarations
- Country-of-origin determination with supporting documentation to raw material level
- UFLPA and EU forced labour screening and attestation workflows
- Duty scenario modelling and entry-level records to support refund claims and rapid reclassification
- Generation and submission of Product Passports to CBP before shipment

Scalability

- Cover the full product catalogue and onboard suppliers at scale, including those with limited technical capability
- Decentralised data architecture, as ESPR specifies, with central registry linkage
- Multi-jurisdiction configuration so a new regime adds rules and fields without a rebuild

Window	Priority actions
Now to February 2027	Battery passports live and registered; Registry test environment used; supplier data contracts updated; UFLPA and tariff records audited; IEEPA refund position reviewed
2027	Steel, construction and service provider delegated acts adopted: map product data against them; EU Forced Labour Regulation and battery due diligence go live; textiles, aluminium and tyre acts finalised
2028	Steel passports expected to apply; EU Customs Data Hub for e-commerce; California textile EPR programmes start; Working Plan mid-term review
2029 to 2031	Textiles, aluminium, tyres, furniture, mattresses and ICT passports; toys by August 2030

Outlook

The passport is becoming the shared data layer for trade compliance. The EU uses it for sustainability and, increasingly, border control. The US uses it for origin and forced labour. China, Japan and India are building battery-led versions with their own identifiers.

Companies that design one governed product record and present it differently to each authority will carry one cost base. Companies that build a separate system for each regime will carry several.

How Hurricane Commerce Can Help

Both passport regimes rest on the same trade data: accurate classification, origin, duty position, and screening of goods and parties before they move. That's the data Hurricane Commerce provides today, and it's the foundation for meeting EU and US passport requirements.

The **Global Trade Ecosystem (GTE)** gives compliance, logistics and commercial teams a single source of verified trade compliance data. The **Kona API** embeds the same capabilities directly into ERP, product information, order management and customs systems, so passport and declaration data come from one place.

- **HS and CN classification.** Consistent commodity codes across product records, EU Registry registrations and customs declarations, where a mismatch will stop toys at the EU border from 2030 and is likely to do the same for other product groups.
- **Duty and tax calculation.** Landed cost and duty positions that can be recalculated quickly as US tariff bases shift and the EU removes its low-value consignment exemption.
- **Restricted and prohibited goods screening.** Checks on products against destination-country rules before shipment, including CBP, CPSC and partner government agency requirements in the US.
- **Denied party screening.** Screening of buyers, sellers and supply chain parties, supporting the due diligence that forced labour rules on both sides of the Atlantic demand.
- **Data validation.** Checks on product descriptions and shipment data before they reach a declaration or a product record, so errors are fixed at source.

Hurricane continues to develop GTE and Kona in step with EU and US requirements as delegated acts, standards and CBP programmes mature. To discuss how Hurricane can support your compliance programme, contact your Hurricane Commerce account manager or visit hurricanecommerce.com.

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