

Handbook on EU Product and Environmental Compliance

Strategic Guide for Holistic Market Conformity, Product Safety, Packaging Ecology, Circular Economy, and Digital Proof of Compliance in the European Single Market

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Important Information for International Manufacturers, Importers, Software Architects, Supply Chain Managers, Trademark Owners, and Online Retailers (E-Commerce)

1. Introduction: The New, Multidimensional EU Compliance Model

The era in which regulatory product compliance in the European Union was dealt with by simply affixing a CE logo is permanently over. The EU is fundamentally transforming the European single market. The goal is a closed economic area that protects consumers from unsafe products while simultaneously enforcing the transition to a climate-neutral circular economy.

Today and in the future, compliance is no longer an isolated task of technical development. It is a multidimensional system that affects the entire lifecycle of a commodity: from the initial design draft (Eco-Design) and technical safety to the sustainability of the supply chain, digital pre-sales transparency in online retail, and the financial responsibility for recycling at the end-of-life stage.

This handbook provides a seamless, systematic overview of the six most important regulatory pillars (CE, GPSR, PPWR, EPR, ESPR, and DPP), precisely delineates them from one another, and demonstrates how they interlock in operational business.

CE	GPSR	PPWR	EPR	ESPR	DPP
Conformité Européenne	General Product Safety Regulation	Packaging and Packaging Waste Regulation	Extended Producer Responsibility	Ecodesign for Sustainable Products Regulation	Digital Product Passport
<i>Europäische Konformität</i>	<i>Verordnung über die allgemeine Produktsicherheit</i>	<i>EU-Verpackungsverordnung</i>	<i>Erweiterte Herstellerverantwortung</i>	<i>Ökodesign-Verordnung für nachhaltige Produkte</i>	<i>Digitaler Produktpass</i>

Why the delineation is crucial

CE, GPSR, PPWR, EPR, ESPR, and DPP are not isolated sets of rules, but rather interlock with one another. While CE and GPSR ensure product safety, PPWR and EPR extend this responsibility to packaging and disposal. ESPR and DPP go one step further, transforming the market toward data-driven, sustainable product responsibility.

Companies that understand these connections early on and implement them in a structured manner ensure not only regulatory compliance but also a sustainable competitive advantage in the European market.

2. The Regulatory Pillars in Detail (What, for whom, for what?)

2.1 CE Marking (Technical Conformity & Product Safety)

- **What is it?** A legally required conformity mark. By affixing it, the person placing the product on the market declares in a legally binding form that the product fully complies with all specific, harmonized European directives and regulations.
- **What does it apply to?** Exclusively to products that fall within the scope of application of at least one specific harmonized EU directive (e.g., electrical appliances under LVD/EMC/RED, machinery, toys, medical devices, construction products, personal protective equipment).
- **Who does it apply to?** To any economic operator who places these products on the market in the EU (manufacturers, importers, and distributors who market products under their own brand).
- **Core Requirement:** Conducting certified laboratory tests, creating an internal risk assessment, compiling the Technical Documentation (Technical File), and signing the EU Declaration of Conformity (DoC).

2.2 GPSR (General Product Safety Regulation – Regulation (EU) 2023/988)

- **What is it?** A universal, directly applicable EU law that functions as a regulatory safety net. It ensures that, without exception, every consumer product on the market is absolutely safe.
- **What does it apply to?** To all non-food consumer products (B2C goods). For products without a CE requirement (e.g., clothing, furniture), it applies fully; for CE-regulated products, it applies additionally (in particular regarding obligations in e-commerce and recall management).
- **Who does it apply to?** To the entire supply chain: manufacturers, importers, authorized representatives, distributors, and explicitly also to operators of online marketplaces.
- **Core Requirement:** Naming an economic operator address located within the EU (Responsible Person), creating a GPSR risk analysis even for non-CE goods, seamless traceability (batch numbers), as well as the display of all manufacturer data and warning notices in the online listing prior to purchase.

2.3 PPWR (EU Packaging and Packaging Waste Regulation)

- **What is it?** A directly applicable EU regulation intended to radically reduce the environmental impact of packaging and enforce its full recyclability.
- **What does it apply to?** To every type of packaging placed on the EU market, divided into primary packaging (sales packaging), secondary packaging (grouped packaging), and tertiary packaging (transport and e-commerce packaging).
- **Who does it apply to?** To all economic operators who provide packaged products in the EU (brand owners, importers, mail-order retailers, fulfillment service providers).
- **Core Requirement:** Compliance with "Design for Recycling" (classification into performance classes A-C; ban on class D/E from 2030), fulfillment of minimum PCR post-consumer recycled content quotas for plastics, strict compliance with the empty space ban (maximum 50% empty space for shipping boxes), and the application of harmonized EU waste sorting symbols.

2.4 EPR (Extended Producer Responsibility)

- **What is it?** A financial-policy principle regulated via national laws. Anyone who introduces a product to the market must bear the costs for its collection, sorting, and recycling in the respective country.
- **What does it apply to?** Divided into specific environmental streams: packaging (affects every physical commodity), waste electrical and electronic equipment (WEEE), batteries/accumulators, as well as (depending on the country) textiles, tires, or furniture.
- **Who does it apply to?** To the "first seller to place goods on the market" in the respective EU member state. Anyone who sells cross-border via e-commerce or dropshipping directly to end customers in another EU country is automatically deemed an EPR-obligated seller placing goods on the market there.
- **Core Requirement:** Registration with the respective national authorities in all 27 EU countries separately, concluding contracts with dual systems/take-back systems, and the continuous (monthly/annual) submission of quantity and weight declarations, including fee payment.

2.5 ESPR (Ecodesign for Sustainable Products Regulation – Regulation (EU) 2024/1781)

- **What is it?** The ecological framework law of the EU, which transforms the construction requirements of products from a pure energy efficiency check to a comprehensive sustainability check across the entire lifecycle.
- **What does it apply to?** To almost all physical goods in the EU single market. Excluded are only food and feed, as well as human and veterinary medicinal products. The precise criteria are activated step-by-step via product-group-specific "delegated acts".
- **Who does it apply to?** Primarily to manufacturers and importers who design the products and introduce them into the EU for the first time.
- **Core Requirement:** Eco-Design by Default – products must verifiably be constructed for longevity, easy repairability, easy disassembly, reusability, and freedom from hazardous substances. Large enterprises are also subject to a strict ban on the destruction of unsold textiles and new electronic goods.

2.6 DPP (Digital Product Passport)

- **What is it?** The fundamental, IT-based implementation tool of the ESPR. A decentralized, cloud-based, interoperable data ecosystem that provides product information digitally along the entire value chain.
- **What does it apply to?** To all products covered by the ESPR regulation (prioritized for batteries, textiles, iron/steel, electronics, chemicals, and plastics). Legal market access in the EU is technically impossible without a DPP.
- **Who does it apply to?** To manufacturers and importers (data provision and IT architecture), distributors (obligation to present it in the online shop), as well as software hosts (system reliability according to EU standards).
- **Core Requirement:** Generation of a globally unique identification number (UID), setup of a standardized API interface to the central EU registry, and the permanent affixing of a machine-readable data carrier (QR code or RFID chip) directly onto the product.

3. The Clear Delineation from One Another (Who does what?)

In order to avoid errors in compliance management, the fundamental separation between the systems must be understood:

Safety vs. Sustainability (CE/GPSR vs. ESPR):

CE and GPSR check whether a product is safe for humans at the moment of sale (protection against electric shock, burns, strangulation, or toxic emissions). The ESPR, on the other hand, checks whether the product is sustainable for the planet over its lifespan (resource efficiency, CO₂ footprint, circular recycling). A highly efficient, recyclable device (ESPR-compliant) can be banned if it has electrical defects (CE violation). Conversely, an absolutely safe device (CE-compliant) may be blocked if it is glued together in such a way that the battery cannot be replaced (ESPR violation).

Content vs. Container (ESPR vs. PPWR):

The ESPR focuses primarily on the inherent core of the product itself. The PPWR largely disregards the function of the product and exclusively regulates its container (the packaging).

Material Design vs. Financial System (PPWR/ESPR vs. EPR):

PPWR and ESPR are material and constructive regulations. They prescribe how objects must physically be composed and printed (e.g., mono-materials, pollutant limit values, durability). EPR, on the other hand, is a pure financing and reporting system. The EPR does not check design drawings, but instead demands registration numbers and money for the physical recycling of the resulting waste.

Physical Product vs. Digital Twin (ESPR vs. DPP):

The ESPR defines the legal environmental requirements for the physical commodity. The DPP is the digital reflection (the digital twin) that automatically provides the proof of these requirements.

4. How the Regulations Coincide and Interlock

In practice, these laws do not exist side by side, but interlock directly at critical interfaces:

The Merger in the DPP:

The Digital Product Passport becomes the central data hub. The classic CE Declaration of Conformity (DoC) loses its paper form and is integrated directly into the DPP as a digital data set. At the same time, material declarations according to REACH (GPSR/CE), packaging markings (PPWR), and EPR registration numbers flow into the data structure of the DPP as specific data points. A single scan of the QR code on the product delivers all proofs synchronously.

Eco-Modulation of EPR Fees through PPWR & ESPR:

In the future, national EPR take-back systems will no longer calculate their license fees flat-rate by weight. The so-called eco-modulation takes effect: Packaging that is classified into the best recycling class "A" according to PPWR, or a product that exhibits an extremely long lifespan according to ESPR, pays drastically reduced EPR fees. Anyone using poor materials will be hit with massive EPR penalty fees.

The E-Commerce Vise:

GPSR, PPWR, and EPR form an relentless unit in online retail. Marketplaces like Amazon use automated algorithms to check listings. A sales offer is deactivated Europe-wide in real time if even one of the elements is missing from the seller's backend: either the GPSR address of the responsible person, the country-specific EPR registration number for the packaging (PPWR), or the verified link to the digital product passport (DPP).

5. Product Requirements & Regulations

Regulation	What it is?	Physical features on the product	Distinction	When mandatory?	Who it affects?
CE	The CE marking indicates that a product complies with EU requirements for safety, health, and environmental protection and may be sold within the European Economic Area.	CE logo visibly affixed to the product, its packaging, or accompanying documentation.	Not a quality mark or voluntary certification, but a mandatory conformity marking.	Since the introduction of the respective EU directives or regulations, required before placing a product on the market depending on the product category.	Manufacturers, importers, and distributors, with primary responsibility resting with the manufacturer.
GSPR	EU regulation on general product safety for consumer products, including those not covered by specific regulations.	No uniform marking, but information such as manufacturer name, contact address, product identification, and where applicable, warnings must be provided.	Replaces the former General Product Safety Directive and applies in addition to specific CE requirements, not instead of them.	Mandatory in the EU from December 2024.	Manufacturers, importers, distributors, and online marketplaces.
PPWR	EU regulation aimed at reducing packaging waste and promoting recycling and sustainable packaging.	Markings related to material composition, recyclability, or reusability of the packaging.	Applies to packaging, not the product itself.	Will become mandatory in phases following entry into force of the regulation.	Manufacturers, distributors, importers, and entities placing packaging on the market.
EPR	A principle requiring producers to take responsibility for the entire lifecycle of a product, especially disposal and recycling.	Often no direct markings, but includes registration and licensing systems and possibly recycling symbols.	Not a single law, but a framework principle implemented through various national legislations.	Already established in many EU countries, varying by product category.	Manufacturers and importers, and in some cases distributors.
ESPR	EU regulation to improve environmental performance and sustainability of products across their entire lifecycle.	May include requirements for durability, reparability, energy efficiency, or material labeling.	Goes beyond energy consumption and covers a wide range of product aspects, not only energy-related products.	Introduced gradually for different product groups after entry into force.	Manufacturers and importers, and in some cases distributors.
DPP	A digital dataset containing information on a product's origin, materials, repair, and recycling.	Typically a QR code, NFC tag, or similar digital access point on the product or packaging.	Not just a physical label, but a digital information system.	Will be introduced progressively for specific product groups under the ESPR.	Primarily manufacturers, as well as importers, distributors, and recycling actors along the supply chain.

6. Practical Examples: What applies to whom and how do they coincide?

Practical Example 1: E-Bike (Complex Consumer Good)

CE Marking:

Mandatorily applies. The e-bike falls under the Machinery Directive/Regulation, the EMC Directive, and the RoHS Directive. It strictly requires laboratory tests regarding electromagnetic compatibility and electrical safety of the drive.

GPSR:

Applies additionally. Since it is a B2C consumer product, the addresses of the manufacturer and the EU responsible person must be affixed to the frame and stored in the online shop. An accident reporting system must be implemented.

PPWR:

The transport box of the e-bike and the protective foils must be volume-optimized. The empty space ban of maximum 50% must be respected, and the harmonized symbols (e.g., PAP 20 for corrugated cardboard) must be printed on the box.

EPR:

Triple obligation for the seller placing goods on the market. They must report the weight of the e-bike in the waste electrical and electronic equipment register (WEEE) of the destination country, register the lithium-ion battery in the national battery register, and license the shipping box with the packaging register.

ESPR & DPP:

Hits with maximum force. Via the specific battery act, the e-bike requires a fully functional battery passport. A fireproof QR code must be affixed to the battery housing. This provides the consumer with data on the state of health and provides workshops with protected disassembly instructions. The CE documentation is stored digitally in the passport.

Practical Example 2: Cotton T-Shirt (CE-free Consumer Good)

CE Marking:

Does not apply, as no specific CE directive exists for conventional everyday clothing (exception: protective clothing).

GPSR:

Applies fully as the primary safety law. The T-shirt must feature a sewn-in label with the name and postal address of the manufacturer/importer as well as a unique batch number (traceability in the event that pollutants are found). Cord lengths on children's clothing must be designed according to safety standards.

PPWR:

The plastic polybag in which the T-shirt is packed and the shipping bag of the online retailer must be reduced to the absolute minimum and bear the correct waste sorting symbol (e.g., LDPE 4).

EPR:

The seller placing goods on the market must financially license the plastic wrap and the shipping bag in the respective consumer countries. In addition, the textile EPR is taking effect step-by-step: disposal fees must be paid to the national textile registers based on the pure weight of the T-shirt.

ESPR & DPP:

The T-shirt is subject to the strict ESPR prioritization for textiles. The destruction of unsold returns is prohibited by law. A wash-resistant QR code must be attached to the T-shirt, leading to the DPP. This delivers the digital proof of fiber-to-fiber recyclability, water consumption in production, and REACH conformity (freedom from PFAS).

Practical Example 3: High-Quality Designer Wooden Shelf (Piece of Furniture)

CE Marking:

Does not apply (no specific CE directive for standard furniture without electrical components).

GPSR:

Applies as the main pillar. A documented risk analysis regarding stability and tipping safety (e.g., according to EN 12521) must be available. A mandatory, physical warning notice regarding wall mounting must be enclosed in the local language of the customer. The manufacturer address and model number must be permanently affixed to the underside of the shelf.

PPWR:

The foam corner protection profiles and the outer boxes must be designed as a mono-material or be easily separable. Artificial inflation of the box for visual enlargement in retail is prohibited.

EPR:

Licensing of the packaging material with the dual systems. In countries like France, the specific furniture EPR (Éco-mobilier) also applies, where the pure furniture weight must be reported and paid for.

ESPR & DPP:

Following the step-by-step rollout of the furniture acts, the wood must come from verifiably sustainable forestry. A QR code on the back of the shelf leads to the DPP, which declares the glues used (proof of compliance with formaldehyde limit values) and provides instructions for non-destructive disassembly and reuse.

7. Statutory Marking and Data Carrier Requirements

The physical implementation on the product and packaging follows an unyielding statutory tiered principle: directly on the product takes first place. Only if the commodity is verifiably too small or the surface is technically unprintable may the packaging or the instructions for use be utilized instead.

The marking elements must be designed to be smudge-, scratch-, and chemical-resistant. A legally compliant marking layout unites:

- The **CE logo** (at least 5 mm in height, true to proportions) – only if a CE obligation exists.
- The crossed-out wheeled bin – only for electrical appliances and batteries according to **EPR** specifications.
- Complete manufacturer and importer master data with a **serviceable postal address** (no P.O. Box, no pure URL).
- The **EU Responsible Person** with **postal address** and **email address** (mandatory for all non-EU manufacturers under the GPSR).
- Unique product **IDs** (model, batch, or serial number) for seamless traceability.
- Harmonized **PPWR** sorting pictograms on all packaging elements for waste separation.
- The machine-readable **QR code** (data carrier), which acts as a unique identifier (UID) to bridge the gap to the Digital Product Passport (DPP).

Systemic Standards – Your Strong Partner: Compliance Without Compromises

Legally Secure Market Access in the European Union Compliance Without Compromises

In global B2B trade and e-commerce, product safety, environmental responsibility, digital transparency, and certified company processes are the elementary prerequisites for successful and sustainable EU distribution. At the same time, the regulatory requirements within the European Economic Area are not only becoming more complex, but also significantly stricter and more comprehensive.

With new mandatory sets of regulations such as the General Product Safety Regulation (GPSR), Extended Producer Responsibility (EPR), the Ecodesign for Sustainable Products Regulation (ESPR), as well as the Digital Product Passport (DPP), the focus is shifting from pure product safety toward holistic lifecycle compliance. National market surveillance authorities and platforms are tightening their controls – both at the external borders and in digital trade.

In this dynamic regulatory environment, Systemic Standards acts as your expert, strategic anchor point. We translate bureaucratic hurdles into clear, legally secure processes and resolve the demanding requirements arising from GPSR, CE directives, EPR, PPWR, ESPR, DPP, as well as international ISO standards. Our goal is not only to make your market access in the EU smooth, but to effectively protect your company from liability risks, expensive customs holds, marketplace suspensions, and existence-threatening distribution bans.

Our Core Competencies

Targeted Solutions for Your Legally Secure Market Presence

To successfully and legally bring your products to the European market or to raise your quality management to the next level, we offer you tailor-made compliance services. From the initial technical pre-audit to long-term regulatory representation, our portfolio covers all critical pillars of modern product, environmental, and data conformity:

1. Strategic Liability Shielding & EU Representation

With the entry into force of Regulation (EU) 2019/1020, the GPSR (EU) 2023/988, as well as further regulatory requirements, an established economic operator is strictly required for the sale of almost all non-food products in the EU. Systemic Standards assumes this statutory role for you as an official EU representative. We cushion regulatory liability risks in external relations and establish the necessary foundation for GPSR, EPR, and future DPP conformity.

2. Implementation of EPR & EU Packaging Regulation (PPWR)

Extended Producer Responsibility (EPR) as well as the new PPWR place far-reaching requirements on the registration, take-back, recyclability, and labeling of packaging and products. Systemic Standards coordinates your EPR registrations Europe-wide, structures your quantity declarations, and ensures that your packaging and product streams comply with current and future regulatory requirements.

3. Preparation for ESPR & Digital Product Passport (DPP)

With ESPR and DPP, the EU is establishing a new standard for sustainable and data-based product conformity. Requirements regarding durability, repairability, material transparency, and CO₂ data are becoming an integral part of market access. We analyze your product structures, build resilient data models, and prepare your company early on for the mandatory introduction of the Digital Product Passport.

4. Preventive Avoidance of Import Hurdles and Supply Stops

Missing EPR registrations, incomplete DPP data, deficient technical documentation, or incorrect labeling are sufficient today to block supply chains. Our preventive document and compliance check addresses exactly this point: We review your documents holistically – technically, regulatorily, and on a data basis – and effectively prevent customs holds, marketplace suspensions, and damage to reputation.

5. Sovereign Interface to European Market Surveillance Authorities

In the event of official reviews, speed and professional competence are crucial. As your official representative, we handle professional communication with market surveillance authorities, system operators, and platforms. We manage deadlines, provide well-founded answers to inquiries, and actively defend your distribution status in the European market.

6. Conformity & Data Management with Long-Term Verification

The legislator prescribes a strict 10-year data retention period for economic operators regarding technical documentation and EU Declarations of Conformity (DoC) – calculated from the time the last product model was placed on the market. At the same time, the requirements for structured and available product data are rising in the wake of new regulatory mandates such as the Digital Product Passport (DPP) and the Ecodesign Regulation (ESPR). Systemic Standards ensures legally compliant, audit-proof, long-term archiving of all your proofs of conformity as well as future-proof data management. We thereby guarantee you a seamless, robust verification security that can be retrieved at any time for authorities, customs bodies, and claiming third parties – even years after the import.

7. ISO & Certification Readiness for Sustainable Business Success

A functioning management system is the key to global competitiveness. We lead your company purposefully to certification readiness. Through structured gap analyses, we uncover weak points and accompany your organization up to successful auditing – for example in quality management (ISO 9001), environmental management (ISO 14001), or in the risk assessment of machinery (ISO 12100).

Conclusion and Outlook

European product regulation has reached a level of maturity that no longer tolerates compromises or negligence. Anyone attempting to look at the systems in isolation or relying on unverified certificates from sub-suppliers in third countries will inevitably fail due to the automated control mechanisms of customs or the algorithms of e-commerce platforms.

The timely, proactive amalgamation of technical safety (CE/GPSR), packaging-ecological optimization (PPWR), financial safeguarding (EPR), and the establishment of digital data architectures (ESPR/DPP) is the only strategy to secure market access in Europe permanently. It protects your company from draconian penalties and transforms regulatory obligations into a real, measurable competitive advantage.

Prepare your product portfolio for the European single market. Contact us for a detailed comprehensive pre-audit.

Guide for the Holistic EU Compliance Pre-Audit

In order to verify the regulatory maturity of your products in a legally secure manner, the documents must be compiled structurally. Please submit these documents collectively (one separate email per product line) to info@systemic-standards.com

The following specifications and document categories are required for the audit:

- **Category 1: Product & Operator Master Data (GPSR):** Exact product description, intended use; high-resolution photos; complete address data of the manufacturer, the EU importer, and the responsible person located within the EU.
- **Category 2: Technical Documentation & CE:** Technical construction drawings; complete bills of materials (BOM); circuit diagrams; risk analyses (e.g., according to EN ISO 12100); already existing EU Declarations of Conformity (DoC).
- **Category 3: Lab Tests & Chemical Proofs:** Complete test reports from accredited laboratories (e.g., EMC, LVD, RED, RoHS, toy safety); seamless REACH conformity proofs regarding substances of very high concern (SVHC); food contact certificates, if applicable.
- **Category 4: Packaging & Material Data (PPWR):** Detailed listing of all packaging components used (weight in grams, precise material type such as PAP 20 for corrugated cardboard or LDPE 4); proofs of the PCR recycled content; mathematical documentation on compliance with the empty space calculation.
- **Category 5: EPR Registration Proofs:** Listing of all valid registration numbers for the utilized EU destination countries (WEEE for waste electrical equipment, batteries, as well as packaging registers such as LUCID in Germany or SYDERLOG in France) including the contracts with the respective take-back systems.
- **Category 6: Circularity & Service Concepts (ESPR):** Documentation on the contractual availability of spare parts and detailed repair instructions; intended duration of software or firmware updates (in years); already created life cycle assessments (LCA) or formal environmental product declarations (EPD).
- **Category 7: IT Infrastructure & ERP Systems (DPP):** Description of the ERP, PIM, or PLM software systems currently used in the company for technical analysis on how the automated, decentralized data provision for creating the Digital Product Passport (DPP) can be realized.
- **Category 8: Proof of Liability & Insurance:** Formal proof of active product liability insurance with territorial coverage for the entire EU region. A minimum coverage amount of €1,000,000 is a mandatory prerequisite for this; due to the complex obligations of the ESPR and the GPSR, €2,000,000 to €3,000,000 are strongly recommended.

Why Systemic Standards?

We do not believe in rigid bureaucracy, but in smart, systemic processes. We link deep legal and technical expertise with practical, economically sensible solutions for modern importers, manufacturers, and distributors. Whether it is a consumer good, complex electronics, or an industrial machine – we ensure that your products meet European safety standards not just on paper, but in actual daily practice.

Systemic Standards – Competence in Product Safety. Excellence in Compliance.

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