



Certification standard

Charger & cable

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I. GENERAL INFORMATION

Based on the EN45550 series of standards, and consistent with EN45552 and EN45554, the LONGTIME® specific standards specify elements relating to the study of the robustness, reliability and repairability of the associated product family.

All qualitative, semi-quantitative and quantitative data are derived from a research and consultation process, as required by current standards, and take into account bibliographical references (scientific studies, regulations, standards, etc.) and all stakeholders involved.) and all stakeholders, i.e.: marketers (manufacturers, importers, distributors), their suppliers and/or subcontractors, product experts (repairers, installers, professional testers), spare parts professionals, reconditioners, consumers, consumer associations, environmental associations and any other stakeholder who can contribute, subject to added value and the availability of networks and information.

LONGTIME® vision

This project is part of a dynamic social movement, with the aim of moving ahead of regulations. This label is made by citizens, for citizens. It provides the certainty that the product bearing the label is manufactured for long-term use, as desired by the majority of consumers, and that it is economically repairable.

LONGTIME® is a simple, powerful and effective tool, designed to inform consumers who are concerned about the overall impact of their purchases, as well as those who wish to acquire a product with a fair longevity/price ratio. It also aims to put the spotlight on manufacturers keen to offer products with an optimized lifespan.

Label objectives

The aim is to encourage a different kind of consumption, with a view to producing differently. Virtually all citizens would like to see a transformation of the consumer society, with a real paradigm shift in technical and economic thinking, in order to consume better and more sustainably.

As studies « [Modélisation et évaluation environnementale de produits de consommation et biens d'équipement](#) » and « [Évaluation environnementale et économique de l'allongement de la durée d'usage de biens d'équipements électriques et électroniques a l'échelle d'un foyer](#) » from the Agence De l'Environnement et de la Maîtrise de l'Énergie Française (ADEME) show, the ecological interest is major: in the space of a few decades, we have multiplied our consumption of raw materials to over 60 billion tonnes a year.

The label helps to preserve the planet's resources by making better use of them and reducing waste.

Intuitively, then, buying a product with an optimized lifespan encourages the rational use of our planet's resources, reduces over-consumption and helps us to move away from disposable and wasteful products. It's not a question of looking for "immortal" products, but rather of fighting against the short lifespan of products.

Impact of durability to Charger & cable

Extending the lifespan of chargers and cables by a few years can reduce the results of indicators in impact categories linked to upstream life-cycle phases.

In fact, the phase of Raw Material Extraction often has the highest environmental impact because of the energy and resource-intensive processes needed to extract metals (like copper and aluminum) and plastics for insulation. Mining and processing create significant emissions and mining waste.

Extending the lifespan and factors that must be considered:

- **Compatibility and software obsolescence:** If an older charger is incompatible with new fast-charging technologies or doesn't meet modern energy efficiency standards, extending its lifespan may be counterproductive. Newer models are often more efficient and reduce electricity consumption during charging.
- **Impact on energy efficiency:** Technological advances have made newer chargers more efficient, especially in standby modes where older models tend to waste more energy. As a result, keeping an outdated, less efficient charger in use could ultimately consume more energy than the production of a newer, optimized model. Older chargers typically have lower energy conversion efficiency, leading to higher energy losses. Newer models offer several improvements:
 - **Reduced standby power loss:** Modern chargers consume very little energy when not actively charging a device.
 - **Power optimization:** Standards like USB Power Delivery allow recent chargers to adjust voltage according to the charging needs, reducing unnecessary energy consumption.
 - **Faster charging:** This translates to less time plugged in for the same amount of energy transferred.

In conclusion, extending the lifespan of a charger helps reduce raw material usage and manufacturing impacts, but only if the charger remains technically compatible and energy efficient. For cables, durability is crucial, as frequent cable replacements lead to added environmental impact.

Fields of application

The label is applicable to various product families as long as there is an assembly of parts. LONGTIME® aims to cover domestic appliances, electronics, hand-held electrical appliances, furniture, leisure equipment, professional equipment, etc. The range of products is therefore very broad, but excludes automotive, textile (excluding leather goods), food, cosmetics and chemical products.

Reference system organization

The criteria are broken down into 3 main families and grouped into 9 categories. The criteria are presented as follows:

Criteria category

Criteria subcategory

Each of the 3 main criterion categories has sub-categories that allow us to refine the field. The reference system comprises a total of 9 sub-categories

1. Criteria number and name

Each criterion is identified by a number and a name corresponding to its specific theme. In all, there are 38 criteria.

Time marker

Associated with each criterion Cf table below

A time marker is assigned to each label criterion according to the classification shown in the table below:

Criteria TO	These criteria must be met to qualify for certification after the initial audit (year N).
Criteria T1	These criteria must be met by at least 70% at the time of the audit. Corrective action will be taken to achieve 100% compliance by year N+1.

CROSS-CUTTING CRITERIA

Criterion applicable to all product categories

❖ Product Specific Requirement (PSR)

Specific criterion whose scope is adapted to the product category of the standard.

Means of proof: Details of the means of proof required and/or relevant to the assessment of the criterion and its PSR.

Control system

Compliance with the standard's criteria is assessed by an independent, accredited inspection body.

Each criterion is assessed according to a compliant/non-compliant approach.

For more details on the control system used in the labeling process, click here:

<https://www.longtimelabel.com/conditionslongtime>

Standards and regulations

The standards and regulations cited in the standard are based on the most recent versions and/or equivalents published in the Official Journal of the European Union.

General mode of proof

A series of documents and administrative procedures are useful for establishing proof of compliance with various criteria:

- Visual inspection by mandated third-party auditor during in-situ audit

- › All European legislation applicable to the product family, in particular: technical specifications referred to in article 12, paragraph 5 of the [REGULATION \(UE\) 2017/1369](#) present in the European Commission's product conformity database (CE marking database), EMC, ROHS, WEEE, machine safety directives
- › Technical specifications for components, materials, coatings and internal or supplier processes
- › Quality certification and type 1 or 2 label (Iso 9001, Iso 14001)
- › Quality assurance
- › Test data
- › After-sales service data
- › Any documentation/software to support compliance, such as :
 - › Internal product data sheet
 - › Functional analysis tool
 - › Design study (function, materials, usage constraints)
 - › Performance and endurance testing
 - › Qualification phase and test
 - › Failure rate study
 - › Operating instructions
 - › Maintenance manual
- › Terms and conditions of sale

II. PRODUCT SCOPE DEFINITION

The chargers and cables repository is dedicated to devices used for powering mobile electronics, smartphones and digital products, and for data transfer between devices. These products are essential for maintaining device functionality by ensuring battery charge and enabling data connectivity.

Chargers convert electrical energy from an outlet into a compatible voltage and current, optimizing power delivery based on the device's requirements. Cables, typically with USB or USB-C connectors, facilitate the transfer of both power and data. Chargers and cables are constructed from various materials, including metals (copper, aluminum) for conductivity and plastics for insulation and durability, to ensure safety and user-friendliness.

The present document focuses solely on the products included in the study scope : chargers and cables used for power and data transfer.

Product scope

- › Charging cables/adapters All types of USB (A-C-micro)
- › USB cables of all types (A-C-micro) and lightning for charging and data transfer

Outside product scope

- › Wireless chargers (inductive)
- › Non-USB adapters and chargers
- › Charging stations, modular multi-port or specialized
- › Charging stations for portable devices
- › Vehicle and solar chargers
- › External battery chargers

In the rest of the standard, "**USB device charger and USB cable for charging and data transfer**" is replaced by "**charger and cable**".

III. PRIORITIZATION BY PARTY CATEGORY

This chapter details a typical nomenclature, representative of the target product group but not exhaustive. The various parts present in the BOM will then be prioritized by type of part.

Charger

- **Power Conversion**
 - Transformer
 - Rectifier Diodes
 - Switching Transistor
 - Capacitors
 - Inductors
 - IC Controller/Regulator

- **Safety and Protection**
 - Fuse
 - Surge Protector (Varistor)
 - Thermal Cut-off Switch

- **Connector and Output Interface**
 - USB-A/USB-C Output Port
 - Wiring Harness

- **Enclosure and Structural Components**
 - Plastic Housing
 - LED Indicator (Optional)

- **Sealing and stabilization of mechanical connections**
 - Sealing mechanism (O-rings, rings, lips, silicone, etc.)
 - Holding mechanism (screws, bolts, circlips, washers, adhesives, etc.)

Cable

- **Electrical Conductor**
 - Copper Wire (Power and Data Lines)
 - Ground Wire

- **Insulation and Shielding**
 - PVC or TPE Insulation
 - Braided Shielding (Copper or Aluminum)
 - Outer Sheath (PVC/TPE/TPU)

- **Connector Subassembly**
 - USB-A/USB-C Plug
 - Device Connector (Micro-USB, USB-C, USB-A, Lightning)

- **Strain Relief and Structural Components**
 - Strain Relief Boot

- Ferrite Bead (Optional)
- Cable Sleeves (Optional)

IV. PRIORITIZATION BY PART CATEGORY

Product housing

This covers all the parts used to protect the product's internal components from the outside world.

Charger

- **Enclosure and Structural Components**
 - Plastic Housing

Functional parts

Parts related to the operation or use of the product without additional features.

Charger

- **Sealing and stabilization of mechanical connections**
 - Sealing mechanism (O-rings, rings, lips, silicone, etc.)
 - Holding mechanism (screws, bolts, circlips, washers, adhesives, etc.)

- **Enclosure and Structural Components**
 - LED Indicator (Optional)

Priority parts

Parts that are functional but critical in the event of malfunction or breakdown (sometimes called critical parts).

Charger

- **Power Conversion**
 - Transformer
 - Rectifier Diodes
 - Switching Transistor
 - Capacitors
 - Inductors
 - IC Controller/Regulator

- **Safety and Protection**
 - Fuse
 - Surge Protector (Varistor)
 - Thermal Cut-off Switch

- **Connector and Output Interface**
 - USB-A/USB-C Output Port
 - Plug/connector to socket

Cable

- **Electrical Conductor**
 - Copper Wire (Power and Data Lines)
 - Ground Wire

- **Insulation and Shielding**
 - PVC or TPE Insulation
 - Braided Shielding (Copper or Aluminum)
 - Outer Sheath (PVC/TPE/TPU)

- **Connector**
 - USB-A/USB-C Plug
 - Device Connector (Micro-USB, USB-C, Lightning)

- **Strain Relief and Structural Components**
 - Strain Relief Boot
 - Ferrite Bead (Optional): Reduces electromagnetic interference, placed near one end of the cable.
 - Cable Sleeves (Optional): May be added to increase durability, such as braided nylon or fabric wraps.

Vulnerable parts

Parts exposed to a high rate of accidental user breakage.

- Not Identified

Consumable or maintenance parts

Consumable parts are those parts that need to be replaced more or less frequently, depending on the pattern of deterioration over the product's lifetime. Maintenance parts require regular servicing to keep the product in optimum working order.

- Not Identified

Aesthetic parts or accessories

Aesthetic parts that do not interfere with product operation. Elements that may be useful for the operation of an object or for adding additional functions without being part of it.

- Not Identified

V. CLASS OF REPARABILITY CRITERIA

1. Class system

The criteria in the "Repairability" family use a system of classes to prioritize the level of requirement for each type of part.

These classes range from A to E.

Class A represents best practice in reparability. The lower classes (B, C, up to D or E) reflect a decreasing level of relevance of practices, but should always be considered in relation to market practices.

The definition of classes is the subject of a study for each repository, in order to identify best market practices.

2. Disassembly depth of parts

The dismantling step count starts when the safety conditions for the user are met. A step is an operation leading to the removal of a part or a tool change. Example:

- › Remove cover by sliding with hand = 1 step
- › Remove cover by unscrewing 4 Phillips screws = 1 step
- › Remove cover by unscrewing 2 Phillips and 2 Torx screws = 2 steps

VI. EXPOSURE TO EXOGENOUS FAILURES

Definition

An exogenous failure refers to a defect or problem in the manufactured product that occurs due to external factors or conditions beyond the control of the manufacturer or producer.

As opposed to an endogenous failure, which is linked to internal problems (design, manufacturing, quality), an exogenous failure is generally the result of unforeseeable external circumstances (e.g. extreme environmental conditions, transport accidents, inappropriate handling by the end-user, component failures from third-party suppliers, etc.).

Managing exogenous failures in product manufacturing may involve implementing quality control measures, rigorous testing, supply chain management, warranties and return policies to deal with problems that may arise due to these external factors.

Exogenous failure criteria

User risk :

Reflects the ability to respect conditions of use in the face of the weight of the constraints of use.

Associated levels :

- **Low**: the user scrupulously respects the product's rules of use, particularly for quality and safety reasons.
- **Medium** : the user generally respects the product's rules of use
- **High** : the user rarely respects the product's rules of use

Product handling :

Reflects the possibility of false handling, shocks, falls.

Associated levels :

- **Low** : Not handled
- **Medium** : Handling without moving or dismantling
- **High** : Handling with moving or dismantling

Weather exposure :

Refers to exposure to rain, hail, frost, wind, sand, lightning, dust, salt spray...

Associated levels :

- **Low** : No exposure (indoors)
- **Medium** : Indirect exposure (hold, station concourse)
- **High** : Direct exposure (outdoors)

Definition of the different phases

- **Inactivity/Storage** : The product is not in use and is stored in a static environment. It remains disconnected from both power sources and devices, with no active functions being performed.

- Transport : The product is moved between locations, either in a protective case, bag, or other storage method. This phase involves physical handling but no functional use.
- Standby : The cable and charger are connected to a power outlet, but the other end of the cable is not connected to any device. The system is ready but idle.
- Connection to a power source : The charger and cable are plugged into a power outlet or another energy source. The connection establishes the flow of electricity into the system, preparing it for operation.
- Connection to a device : The cable is physically connected to a device, ensuring the interface is established for charging or data transfer.
- Disconnection : The cable and charger are unplugged from either the power source or the connected device. This marks the end of an active session of use.
- Charging product : The cable and charger are actively transferring electricity from the power source to the connected device, powering or recharging it.
- Data transfer : The cable is used to transmit data between two connected devices, ensuring communication or synchronization between them.

Phase	User risk	Product handling	Weather exposure	Overall risk
Inactivity/Storage	Low	Low	Low	Low
Transport	Medium	Low	Low	Low
Connection to a power source	Medium	Medium	Low	Medium
Connection to a device/Disconnexion	Medium	Medium	Low	Medium
Standby	Low	Low	Low	Low
Charging product	Medium	Low	Low	Low
Data transfer	Medium	Medium	Low	Low

Assessment of the overall risk of exogenous failure : **Low**

This product category is subject to a low risk of exogenous failure. The main exogenous failure risks for cables and/or chargers are as follows:

Inactivity/Storage - **Low**

- Material degradation: Prolonged exposure to extreme temperatures, humidity, or direct sunlight can weaken the cable's insulation or charger casing.
- **Mechanical stress: Coiling the cable too tightly or placing it under heavy objects can cause internal wire breaks or deformations.**

- › Corrosion: Exposure to dust or moisture during storage can lead to oxidation of connectors.

Transport - **Low**

- › Connector damage: Physical impact during transport (e.g., in a bag) can bend or deform connectors.
- › Cable strain: Twisting, pulling, or improper folding can lead to internal wire fractures.
- › Abrasion: Friction against rough surfaces in a bag or pocket can wear down the cable's outer insulation.

Connection to a power source - **Medium**

- › **Connector wear: Repeated plugging and unplugging can wear out connectors over time.**
- › Power surges: Sudden voltage spikes can damage internal components of the charger.
- › **Improper insertion: Forcing the plug into an incompatible or damaged outlet can cause physical or electrical damage.**

Connection to a device / Disconnection- **Medium**

- › Strain at joints: Stress on the cable near connectors (e.g., from bending or pulling) can lead to internal wire breaks or connector detachment.
- › Contact damage: Improper alignment or rough insertion into a device can deform or wear out the connectors.
- › Poor contact: Dirt or debris in the connector can cause overheating or intermittent functionality, reducing the cable's lifespan.
- › **Abrupt disconnection: Yanking the cable rather than pulling from the connector can strain or break internal wires.**
- › Connector damage: Rough handling during unplugging can loosen or deform connectors.
- › Cable tangling: Improper handling can lead to knots, which may damage the cable insulation or cause internal stress.

Standby - **Low**

- › Overheating: Chargers left plugged into power outlets for long periods may overheat due to continuous energy draw, reducing their lifespan.
- › Connector wear: Frequent plugging/unplugging without connecting to a device can accelerate wear on the connectors.
- › Dust accumulation: Exposed connectors can collect dust, increasing the risk of poor contact and overheating.

Charging product - **Low**

- › Overheating: Prolonged use or insufficient ventilation during charging can cause the charger or cable to overheat, potentially degrading components.
- › Insulation wear: High current flow over time may stress the cable insulation, leading to cracks or melting.

- Connector degradation: Continuous use under high electrical load can wear out connectors.

Data transfer - Low

- Electrical stress: Frequent transitions between charging and data modes can strain the cable's internal wiring.
- Physical wear: Continuous plugging and unplugging for data transfer increases connector wear.
- Insulation damage: Moving connected devices while the cable is in use can cause bending or twisting, which may damage the cable over time.

Particular importance must therefore be attached to raising consumer awareness of good product use and maintenance practices, and to the completeness of the documentation provided.

VII. LABEL CRITERIA

Reliability

Conception

1. Stress resistance

T0 Criteria

The producer identifies the functions of the product and its components, as well as the associated critical use constraints. He demonstrates sustainable design choices, optimized by reliability and/or repairability strategies.

General mode of proof supplemented by a set of data appropriate to the sub-criteria, including the application of product-related test standards:

- *In-warranty and out-of-warranty failure rates: The product must demonstrate failure rates below the industry average.*
- *Accelerated life testing. As the duration of the test is limited, scientific and robust projection calculations (acceleration factor) are used to extrapolate the results to the product's maximum total lifetime, demonstrating resistance to stress above the market sector average.*
- *The methodologies used can be based on general standards, on mandatory standards linked to safety directives and including elements of resistance to stress in use, or on voluntary standards.*
 - *EN 45552: General method for assessing the durability of energy-related products*
 - *EN 60721 : Classification of environmental conditions*
 - *IEC 60605 : Reliability testing of equipment*
 - *IEC 61123 : Reliability testing - Compliance test plans for pass rate*
 - *EN 61124 : Reliability testing - Compliance test plans for constant failure rate and constant failure intensity*
 - *EN 61649: Weibull analysis*
 - *EN 62506: Accelerated product test methods.*
 - *EN 62368-1: safety of information technology and communication equipment, including chargers.*
 - *EN 62680 Series: USB specifications, notably EN 62680-1-2, which applies to USB cables used for smartphones and other devices, including fast charging.*
 - *IEC60950 : Information processing equipment - Security*
- *Instruments used for testing: all instruments used for testing must be calibrated and a valid calibration report must be available. Calibration must be carried out prior to testing. Calibrations must be traceable to national standards.*

❖ Resistance to mechanical stress

- Shock and drop resistance of the charger :
 - Rotating random free fall test : resistance to 200 drops from a height of 0.5 meter onto a concrete surface.
 - Ball drop test : resistance to a drop of a 50 mm diameter and weighing 500 grams on the product from 0.3 metres high. Each product is impacted twice : on the

geometric center of the product and on the ultrasonic line of the product. The two impacts must be on the same surface.

- › Drop test: resistance to a drop from 1m to the Marble ground, each face for 1 drop, totally 1 cycle needs 6 drops. 2 cycles are required

Mode of proof: IEC 60068-2-31 - Environmental testing - Part 2-31: Tests - Test Ec: impact due to rough handling, test primarily intended for equipment

- › Twist resistance of the cable : resistance to 20 000 twisting cycles at $\pm 90^\circ$ with a 300g load applied to the cable. Lifting distance: 40cm~50cm and swing speed: 30 cycles/min

Mode of proof: IEC 60884-3-1 - Plugs and socket-outlets for household and similar purposes - Part 3-1: Particular requirements for socket-outlets incorporating USB power supply

- › Flex resistance of the cable : Resistance to 70,000 bending cycles at an angle of 60° with a weight of 300 g applied to the cable. Lifting distance: 40cm~50cm and Swing speed: 30 times/min.

Mode of proof: IEC60884-1-3 - Plugs and socket-outlets for household and similar purposes - Part 3-1: Particular requirements for socket-outlets incorporating USB power supply

- › Tensile Strength resistance of the cable : Resistance to 10 Kg pull applied for 60 seconds without cable breakage. Lifting distance: 40cm~50cm

Mode of proof: IEC60884-1-3 - Plugs and socket-outlets for household and similar purposes - Part 3-1: Particular requirements for socket-outlets incorporating USB power supply

- › Mechanical resistance of connectors of the charger and the cable : 10,000 insertion and withdrawal cycles without contact deterioration

Mode of proof: IEC 62680-1-3 - Universal serial bus interfaces for data and power - Part 1-3: Common components - Specification for USB Type-C® cables and connectors

❖ Resistance to thermal stress

- › Resistance to high or very low outdoor temperatures
 - › High-temperature resistance for charger and cable : storage for at least 48h at $\geq 60^\circ$ and $\leq -30^\circ$.
 - › Operating temperature for at least 4h $\geq 40^\circ$ and $\leq -20^\circ$
- › The charger features an equipment safety function.

Mode of proof: Test report with conclusive results

- › MIL-STD-810H - Method 501.7 - Hot Base (A2) and Basic cold (C1)
- › IEC 60068-2-2:B and IEC 60068-2-1:Ab/e

❖ Resistance to sealing stress

- Resistance to dust and foreign bodies and liquids of the cable and charger : protection class IP20

Mode of proof: Protection against ingress of particles and moisture must be indicated in the form of an IP code, corresponding to the levels defined in IEC 60529 - Degrees of protection provided by enclosures (IP code). Tests must be carried out without protective cover

❖ Resistance to electrical stress

- Compliance with safety and Electromagnetic Compatibility regulation standards
- Capacitors : Class B minimum (10,000 hours) or the applicant can demonstrate that the capacitors are designed for long-term operation in the following environmental conditions

Mode of proof:

- EN 55032 and EN 55035 : Electromagnetic compatibility of multimedia equipment
- IEC 62684 : Common external power supply (EPS) interoperability specifications with cell phones enabling data exchange
- EN 61558-2-16 : special rules and tests for switching power supplies

❖ Resistance to chemical stress

- Resistance of cable and charger to products likely to come into contact with them: engine oil, olive oil, hand cream, sunscreen SPF50, edible peanut oil, 75% alcohol, lipstick, liquid foundation, Artificial sweat - pH value 4.7.

Mode of proof: All accessible parts of the cable need to be tested. Chemicals are applied to the cable, wiped off after 72 hours, and an appearance judgment is made after 2 hours. No damage must be visible.

❖ Resistance to UV stress

- Resistance to UV exposure conditions likely to affect products:
 - UVA-340; Power: 0.89 W/m²/nm; Wavelength: 340nm
 - One cycle: 60°C, 8 hours of irradiation; then 50°C, 4 hours of condensation;
 - Total test 24 hours, 2 cycles

Mode of proof: IEC 60068-2-5 - Environmental testing - Part 2-5: Tests - Test S: simulated solar radiation at ground level and recommendations for solar radiation and ageing tests

General mode of proof

Production

2. Production line

T0 Criteria

The manufacturer has the processes in place to control and maintain consistently high manufacturing and assembly quality during the production phase.

- ❖ The main site(s) involved in the production of the product is/are certified to an international quality management standard.
 - Site involved in charger manufacturing ISO 9001
 - Site involved in cable manufacturing ISO 9001

Mode of proof: Annual quality control of the production site and its production line by a third party as a minimum. Demonstration of compliance with ISO 9001 principles by verification of quality procedures or equivalence with other certifications. For companies with more than 250 employees and for subsystems identified in PSR (in the case of subcontracting), ISO 9001 certification issued by an accredited third-party inspection body.

3. Logistics

T0 Criteria

The manufacturer reduces risks to the reliability of components and assemblies through efficient quality processes for managing supply, packaging, storage, handling and transport conditions.

- ❖ Inventory control and management
 - Periodic inventories are carried out, and in the event of non-compliance, a reminder is systematically sent out. The conformity of items and materials in stock is clearly identified, and non-compliant products are placed in dedicated areas.
 - Storage conditions for articles and materials are measured and controlled continuously or periodically, with specifications and control limits.
- ❖ Handling and transport procedures
 - Specific handling procedures are defined and controlled to avoid any deterioration of the product during delivery, handling and transport.
- ❖ Product traceability and protection
 - Exhaustive traceability makes it possible to identify and know the history of the product, including the components and documentation associated with its life cycle.
 - Genuine conformity checks on finished products are carried out before they are put into storage, and are formally described and validated by an independent authority.

General mode of proof

4. Supply chain

T0 Criteria

Within its value chain, the producer details the performance of its quality management linked to the reliability of its suppliers' goods or services in direct relation to its manufacturing phases.

- ❖ For companies with more than 250 employees and for subsystems identified in PSR (in the case of subcontracting), ISO 9001 certification issued by an accredited third-party inspection body.

Mode of proof: Annual quality control of the production site and its production line by a third party as a minimum. Demonstration of compliance with ISO 9001 principles by verification of quality procedures or equivalence with other certifications.

Quality control

5. Reliability plan

T0 Criteria

The producer provides a history of product versions and identifies the changes implemented to improve product durability.

- ❖ The manufacturer is able to demonstrate the following points:
 - Identification and monitoring of failures by the technical departments of the manufacturer or its subsidiaries, with supporting statistics
 - Documented reporting of failures according to structured and systematic processes to central departments (Technical/Quality/R&D)
 - Handling and processing of reports by R&D departments, with concrete modifications made to products to constantly improve their reliability and durability.
 - Tracking of modifications made, and statistical measurement of their impact to attest to the effectiveness of the improvements made.

Mode of proof: demonstration of quality management to the appointed inspection body during the on-site audit.

6. Breakthrough technology

T0 Criteria

The producer provides information on the share of breakthrough technology embodied in the product, and identifies the functions associated with it. He demonstrates the reliability of this technology, all the more so if it concerns a primary function.

General mode of proof

7. Breakdown rate

T1 Criteria

The producer tracks actual failure rates and/or indicators by product part in order to monitor product reliability at least until the last unit of the model concerned has been put on the market.

- ❖ Particular attention will be paid for the following parts :

Charger :

- **Connector and Output Interface**
 - USB-A/USB-C Output Port
 - Plug/connector to socket

Cable

- The failure study enables the producer to determine whether the failure is related to the insulation or to the combination of electrical conductor and connectors.

General mode of proof

User information

8. Product identification

T0 Criteria

The producer uses a method that allows unequivocal identification of the product and its version by interested parties in order to maximize maintenance and failure management processes.

- ❖ Applicable for the charger / Not applicable for the cable.

General mode of proof

9. Completeness of usage information

T0 Criteria

The manufacturer publishes a manual detailing the product's use and care instructions, and provides the user with a maintenance plan. This information, which is also available online, must be exhaustive and relevant in order to reduce exogenous failure rates and encourage responsible use.

General mode of proof

10. Usage information format

T1 Criteria

The manufacturer publishes a clear, simple and accessible user and maintenance manual (font size, vocabulary, language and print quality), so that it can be easily understood by end-users.

- ❖ The service manual should be available for anyone to read, free of charge.

General mode of proof

11. Prolonged immobilization

T0 Criteria

The manufacturer identifies the risks of failure associated with prolonged product downtime. He informs the end user of the conditions of use necessary to prevent these risks.

- ❖ Not applicable.

General mode of proof

Repairability

In this certification standard, the products studied are the cable and the charger as two separate products. Given the price of these parts, and the complexity of repairing them if they malfunction, the emphasis is strongly on reliability, since a malfunctioning cable or charger will be replaced, not repaired, which explains why several reparability criteria are not applicable.

Technical reparability

12. Disassembly of parts

T0 Criteria

The disassembly depth is adapted to the category of product parts and the disassembly time is consistent with the type of profile normally capable of carrying out the process.

- Class A: ≤ 3 steps and less than 1 minute
- Class B: between 4 and 6 steps and less than 3 minutes
- Class C: between 7 and 9 steps and less than 5 minutes
- Class D: between 10 and 15 steps and less than 10 minutes

❖ Not applicable

General mode of proof

13. Part fasteners and connectors

T0 Criteria

Fasteners and connectors have removability and reusability characteristics appropriate to the category of product parts. A system is in place for locating these non-visible fasteners.

- Class A : Removable and reusable
- Class B : Removable but non reusable
- Class C : Neither removable nor reusable

❖ Not applicable

General mode of proof

14. Tools

T0 Criteria

The tools required for repair and/or disassembly must be suitable for the category of product parts.

- Class A: repairs feasible without the use of tools, with tools supplied or with [basic tools](#)
- Class B: repairs feasible with tools specific to the product family

- Class C: repairs feasible with other commercially available tools
- Class D: repairs feasible with proprietary tools
- Class E: repair not feasible with any existing tool

❖ Not applicable

General mode of proof

15. Working environment

T0 Criteria

Product-specific repair scenarios are carried out in a working environment adapted to the product part category.

- Class A: use environment
- Class B: workshop environment
- Class C: production environment

❖ Not applicable

General mode of proof

16. Competence level

T1 Criteria

The level of technical skill required to carry out a repair is consistent with the category of parties involved.

- Class A: Novice skills
- Class B: Generalist skills
- Class C: Expert skills
- Class D: Manufacturer or approved expert
- Class E: Impossible to achieve with existing skills

❖ Not applicable

General mode of proof

17. Spare parts interface

T0 Criteria

The various parts of the product and their connection interfaces are standardized to meet the reparability expectations of the product family.

- Class A: Standard part with standard interface
- Class B: Standard or proprietary part with standard interface
- Class C: Proprietary part with non-standard interface

Types of parts	Class
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Charger	A
Cable	A

- ❖ Serialization practices are prohibited.
- ❖ The product complies with the EN/IEC 63002:2007 standard.

General mode of proof

Organizational reparability

18. Spare parts availability time

T0 Criteria

The availability time for spare parts is at least equal to the expected service life of the product category and its individual parts. The availability period is measured from the time the last unit of the model concerned is put on the market.

- Class A: Long-term accessibility
- Class B: Medium-term accessibility
- Class C: Short-term accessibility
- Class D: No information on the duration of accessibility

- ❖ Class A : Compatible cable and charger must be available for 8 years

General mode of proof

19. Accessibility of spare parts to target audiences

T1 Criteria

The producer ensures the availability of spare parts for the target groups normally suited to the category of parts..

- Class A: Accessible to end users
- Class B: Accessible to independent repair service providers
- Class C: Accessible to service providers approved by the manufacturer
- Class D: Accessible only to the manufacturer

Types of parts	Class
Charger	A
Cable	A

General mode of proof

20. Terms and conditions for the sale of spare parts

T1 Criteria

The manufacturer details the terms of sale of its spare parts. They reflect the product nomenclature and are not sold as a group, unless justified by coherent and verifiable design, calibration and/or economic reasons.

- ❖ The following replacement parts must be sold individually :
 - Charger
 - Cable

General mode of proof

21. Spare parts prices

T1 Criteria

The value of a spare part may not exceed a maximum percentage of the recommended selling price excluding VAT. A tolerance is allowed for parts whose PRU exceeds the specified percentage.

- ❖ Not applicable

General mode of proof

22. Shipping costs for spare parts

T1 Criteria

The producer delivers the spare parts at the actual cost of shipping and preparation, or offers alternative solutions that reduce the cost of receiving the parts.

General mode of proof

23. Spare parts delivery times

T1 Criteria

The manufacturer demonstrates its ability to supply spare parts to interested parties within 5 working days.

General mode of proof

24. Documentation of failure scenarios

T1 Criteria

The manufacturer makes available relevant information and instructions for resolving failure scenarios and/or implementing the maintenance plan.

These are also adapted to the product category and target audience groups. The minimum duration of information availability is specified below.

- Class A: Accessible to all without restriction
- Class B: Accessible to independent repair service providers
- Class C: Accessible to repair service providers authorised by the manufacturer
- Class D: Accessible to the manufacturer only

Documentation	Class	Documentation availability time
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Technical manual with instructions for resolving failure scenarios (e.g : what to check if the charger is not working properly)	A	8 years
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General mode of proof

25. Support for fault diagnosis

T0 Criteria

The producer communicates information and/or deploys diagnostic support mechanisms to help identify failure scenarios.

- Class A: Intuitive interface
- Class B: Coded interface with public reference table
- Class C: publicly accessible hardware/software interface
- Class D: Proprietary interface
- Class E: Impossible, whatever the type of interface

❖ Not applicable

General mode of proof

Scalability

26. Reset settings and passwords

T0 Criteria

In the event of repair or transfer to a third party, the product's user data management processes enable secure, high-performance reuse.

❖ Not applicable

General mode of proof

27. Software

T0 Criteria

The manufacturer ensures that the original performance of its product is maintained when updating the operating system and/or firmware, and differentiates between evolutionary and corrective updates. Users are informed of the consequences of updates, and their consent is required.

❖ Not applicable

General mode of proof

Quality of after-sales service

28. Internal failure resolution policy

T1 Criteria

In the event of product failure, the manufacturer pursues a policy of repair or reconditioning rather than replacement, unless repair is more expensive than replacement, taking into account the wishes of users.

General mode of proof

29. Service contact

T1 Criteria

The producer demonstrates that the opening of a SAV file does not exceed 2 working days.

General mode of proof

30. Return services

T0 Criteria

The manufacturer provides end-users with return services adapted to the product category and consistent with its distribution network, regardless of the status of warranties.

- Class A: Complete return options
 - Class B: Basic return options
 - Class C: No return option
- ❖ Class B: If financially viable, basic return service with minimum return conditions by post or distribution/collection point

General mode of proof

31. Return condition

T0 Criteria

The return of the original packaging cannot be demanded for the repair of the product, as long as it is packaged and protected as much as it could have been at the time of purchase.

General mode of proof

32. Useful product

T1 Criteria

In its network, and for product categories considered "highly useful", the manufacturer minimizes the repair process time until the product is returned to the end-user.

- ❖ Not applicable

33. Warranty time

T0 Criteria

The warranty period with presumed anteriority of defect may not be less than 24 months.

- ❖ Minimum 3-year warranty.

General mode of proof

34. Warranty exclusions

T0 Criteria

In its general warranty conditions, the manufacturer does not introduce any abusive exclusion(s) with regard to the normal use of the product.

Examples of abusive exclusions identified:

- ❖ Surface micro-scratches
- ❖ Dust marks

General mode of proof



By having a type 1 ecolabel certification for its product, the manufacturer automatically validates compliance with all the Life cycle category criteria.

Mode of proof: Type 1 certification in accordance with the standard ISO 14024

35. Health, safety and environmental protection

T0 Criteria

With regard to human health, the safety of people and installations, and environmental protection, the manufacturer proves that it is taking action at a level that complies at least with the requirements of European directives 2011/65/EU and (EC) No 1907/2006 on the restriction of the use of certain hazardous substances in equipment, and/or action to preserve the ecosystems that are most affected.

Mode of proof: For products distributed in geographical areas potentially covered by regulatory prerogatives establishing requirements similar to the European market in terms of limiting the use of certain hazardous substances in EEE, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary.

General mode of proof

- ❖ The final assembly manufacturer of the product is certified to an international environmental management standard.

Mode of proof: ISO 14001 certification issued by an accredited third-party inspection body.

- ❖ Life Cycle Assessment (LCA) : The characteristics of the product and the manufacturer's practices result in a minimum **class C** among the classes listed below.

Requirements	Class					
	A	B	C	D	E	F
The product's LCA is critically reviewed by a third party. The review report must include at least : <ul style="list-style-type: none"> - The number of years of experience in the field of LCA/PCF - Number of carbon footprints reviewed - Number of carbon footprints completed 	x					
The product LCA is based on the specific product mode.	x	x				
The product LCA is based on the product's family of models, but not the specific product model			x	x	x	
The full LCA report including all assumptions is publicly available and based at least partially based on real material data (Full Material Declarations)	x	x	x			
Concrete actions are taken to reduce the impact of the most impacting phase(s) of the life cycle	x	x	x	x		

- ❖ [Fair mined material and/or recycled material](#) : The characteristics of the product and the manufacturer's practices result in a minimum **class D** among the classes listed below.
 - › Class A : 40% minimum of weight
 - › Class B : 35% minimum of weight
 - › Class C : 30% minimum of weight
 - › Class D : 25% minimum of weight
 - › Class E : 20% minimum of weight
 - › Class F : <20% minimum of weight

Mode of proof: proof of origin of materials used to make the product

- ❖ All flame retardants and halogenated substances used in the product comply with the EU 2011/65/EU (RoHS) directive and associated regulations. In addition, the use of Hexabromocyclododecane (HBCDD) is totally prohibited.

Mode of proof: for product groups and geographic distribution sectors potentially covered by regulatory prerogatives establishing requirements for limiting the use of certain hazardous substances in electrical and electronic equipment, proof of compliance with these regulatory requirements will be used as evidence in meeting the SPRs of this criterion where necessary.

36. Energy and/or environmental performance

T0 Criteria

To reduce the impact of energy consumption or pollution emissions, the manufacturer demonstrates the environmental and/or energy performance of its products.

It proves that it is taking action at a level that complies, as a minimum, with the prerogatives of European directives and/or regulations (EU) 2009/125/EC (including its implementing measures) on the eco-design of energy-related products and (EU) 2017/1369 (including delegated regulations) on the energy labeling of products if the product claiming the LONGTIME® label is concerned.

Mode of proof: for products distributed in geographical areas potentially covered by regulatory prerogatives establishing requirements for energy efficiency, eco-design and energy labelling similar to the European market, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary.

General mode of proof

- ❖ The product is compliant with european eco-design requirements and regulation.

Mode of proof: Compliance with Regulation (EU) 2019/1782 - eco-design requirements for external power supplies, covering energy efficiency in standby mode and when in use.

- ❖ Each final assembly plant manufacturing the product with an annual energy consumption exceeding 1 GWh is certified to ISO 50001.

Mode of proof: ISO 50001 third-party certification.

37. Equipment end-of-life management

T0 Criteria

As part of the management of end-of-life equipment, the manufacturer proves that it deploys actions for the collection, recovery and effective treatment of used products according to a level of requirement that complies at least with the prerogatives of European directives 2012/19/EU of July 4, 2012 on waste prevention and treatment depending on the target product group.

- ❖ Identification of the materials of product parts that are mainly made of plastic and weigh more than 5 grams.

Mode of proof: compliance with ISO 11469 and ISO 1043-1-2-3-4 standards.

- ❖ Extended Producer Responsibility (EPR) and reuse, refurbishment and/or recycling of parts and products : the characteristics of the product and the manufacturer's practices result in a minimum **class B** among the classes listed below, if the solution is financially viable for the end user.

Class A	For the main markets (> 10% of sales of certified product) where certified products are sold, the brand owner provides a take back scheme which demonstrably promotes
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	and puts into practice reuse and/or refurbishment of parts and products, as opposed to recycling only, while being legally compliant with applicable EPR regulations
Class B	For all markets where certified products are sold and where EPR regulations apply, the brand owner participates in accredited EPR schemes or provides a reuse/recycling scheme which fulfills the requirements to be exempted from participation in EPR schemes. In all markets without EPR regulations, the brand owner provides voluntarily a take back possibility involving accredited reuse/recycling facilities, when it makes environmental sense
Class C	For all markets where certified products are sold and where EPR regulations apply, the manufacturer participates in accredited EPR schemes or operates a reuse/recycling scheme which fulfills the requirements to be exempted from participation in EPR schemes (legal compliance)

Mode of proof: In geographic distribution areas covered by regulatory prerogatives establishing product collection and recycling requirements, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary. Use of EPR and/or reuse/recycling facilities certified to internationally accredited standards (R2, e-Stewards, EN50625 or equivalent)

General mode of proof

38. Packaging management

T1 Criteria

As part of the fight against waste production, the manufacturer is making efforts to eliminate the proportion of non-recyclable plastic waste from its packaging through :

- ❖ At least 95% of the weight of packaging waste consists of recycled and/or recyclable and/or reusable materials
- ❖ Manual separability of non-reusable and non-valorizable packaging components weighing more than 25 grams in a single component.
- ❖ Product packaging must not contain lead (Pb), cadmium (Cd), mercury (Hg) or hexavalent chromium (Cr6).
- ❖ Plastic packaging material must not contain halogens bound to organic substances.

Mode of proof: Composition and characterization of packaging.

General mode of proof

VIII. TERMS AND DEFINITIONS

Depending on the sector, specific definitions for different product categories (parts, functions, etc.) may be added to the recurring definitions below.

Actual failure

Failure that is effectively linked to a malfunction of the product and not to an exogenous problem (e.g. unpowered socket, incorrectly connected power cable, poorly locked lid, etc.).

Adaptable or compatible spare part

These are parts that can be adapted to several models and brands of the same product, more or less faithful copies of original parts that are not manufactured to the original manufacturer's specifications and are not sold in the original manufacturers' packaging.

After-sales service file

An After Sales Service File is a record documenting the handling of a customer request or issue following the purchase of a product. It includes all relevant information about the customer interaction, the issue reported, steps taken to resolve it, and any communication between the customer and the company. In cases where customer support teams manage the initial contact, the file may be passed on to the after-sales service team for further handling when needed, ensuring that all necessary actions are taken to resolve the issue.

The response time for handling such requests does not exceed an average of duration described in [criteria 33](#). There may be flexibility for periods of high demand (e.g., during product launches or holidays) that are justifiable in relation to market practices.

An automated email confirming receipt of the request is not considered sufficient for compliance to [criteria 33](#).

AMDEC / FMEA

Tools for Failure Mode and Effect Analysis / Analyse des Modes de Défaillance, de leurs Effets et de leur Criticité.

Breakthrough technology

A technology that introduces a major advance over existing solutions or practices. It is distinguished by its significant impact on performance, functionality or efficiency, and can change standards or redefine an industry. Unlike incremental improvements, a breakthrough technology often disrupts the market or the field of application, offering substantial benefits or opening up new possibilities. This can apply to both hardware and software innovations.

Circular economy part (CEP)

PIEC are second-hand goods within the meaning of art. L. 321-1 of the French Commercial Code, and cannot be universally defined, but are defined on a case-by-case, sector-by-sector basis.

For the time being, CEIPs are defined in consumer law for the following sectors: automobiles, household appliances, electronics, motorized DIY and gardening tools, sports and leisure equipment and motorized personal transport devices.

For household electrical and electronic equipment, art. R. 224-30 code de la consommation states: "For the application of article L. 224-109, parts from the circular economy are understood to be components and elements resulting from an operation of preparation with a view to their reuse" where article 541.1.1 defines "preparation with a view to reuse" as any operation of control, cleaning or repair with a view to recovery by which substances, materials or products that have become waste are prepared in such a way as to be reused without any further operation.

Competence level

Solving a failure scenario may require skills such as the ability to identify and locate the failure, access the affected area in the product, handle the appropriate tools, and manage any risks associated with the product, the environment and the operator. Depending on the level of technical skill required to carry out the repair, several levels are defined:

- **Novice:** When no specific repair experience or qualifications are required to carry out the failure scenario resolution process.
- **Generalist:** When the resolution of a scenario is not achievable by a novice, but can be achieved by a person with general knowledge of basic repair techniques and necessary safety measures
- **Expert:** When a scenario cannot be solved by a novice or generalist, but can be solved by people with specific expertise or experience related to the product group in question.
- **Manufacturer:** When the resolution of a scenario is not feasible by a novice, generalist or expert, but can be performed by the manufacturer or a person specifically trained and accredited by the manufacturer.
- **Unfeasible:** When a scenario cannot be solved by any of the defined profiles.

Compostable packaging

Container designed with materials capable of decomposing naturally under the action of micro-organisms present in the composter to become a natural or organic component of the substrate.

Criticality

The criticality of a failure refers to the importance or impact of this failure on the correct operation of a product. It is assessed on the basis of the severity of the consequences the failure could have, particularly in terms of safety/costs, and the frequency of occurrence.

Data management process

Refers to the set of practices and procedures put in place by an organization to collect, store, process, protect and manage the personal information of individuals using their products.

Disassembly depth

Corresponds to the sum of the steps required to access each part individually and to separate it from the equipment, with a view to its replacement.

Electrodomestic

Product powered by electrical energy and intended for domestic use only.

EOS

An acronym for Electrical Overstress, meaning an undesirable state of electrical overload that could lead to product damage or failure.

Expected service life

Period during which the user expects the product to perform as intended.

Experienced tools

Tools that require skill to use and whose cost can be a barrier (torque wrench, soldering iron, etc.).

External source parts

Parts external to the manufacturer's production facility, sourced from an identified supplier.

Fair Mined Material

Fair Mined Material refers to raw materials used in the device for which the manufacturer can credibly demonstrate active efforts to improve at least one of the following aspects during the extraction stage: working conditions, workers' income, or environmental protection. This means that the manufacturer is committed to ethical practices by ensuring better labor conditions, fair compensation for workers, and/or implementing measures to minimize environmental impact in the sourcing of these materials.

Full Material Declarations

Full Material Declarations (FMD) in the context of a Product Life Cycle Assessment (LCA) refer to comprehensive and detailed disclosures of all materials and substances used in a product. This includes a complete list of every material, chemical, and component that makes up the product, along with relevant information about their quantities, sources, and potential environmental or health impacts.

General-purpose tools

Common, general-purpose tools available to the general public in standard distribution and as specified in the EN 45554 tool list: screwdrivers (slotted head, cross-head, 6-lobe internal screws), wrenches (hexagon socket, combination wrenches), pliers (universal, half-round nose, diagonal cutting, multi-socket, vice, for stripping and crimping terminals), pry bar, tweezers, steel-headed hammer, universal knife (cutting pliers with retractable blade), multimeter, voltage tester, soldering iron, glue gun, magnifying glass.

High-utility product

A product that is used very frequently and which, in the event of failure, causes a significant disruption to day-to-day management: refrigerator, washing machine, boiler/water heater, telephone, computer, hob, etc.

HS

Out of order; corresponds to the end of the functional state.

IOT

Internet of Things; this function refers to the ability to connect a product to the Internet for additional remote control and/or regulation functions.

Manual

Comprehensive guide or instructional resource that provides detailed information on how to use, operate, maintain, or assemble a product, system, or process. It can take various forms, including printed booklets, digital documents (such as PDFs), illustrated tutorials, or video instructions. Its purpose is to offer clear, step-by-step guidance to users, ensuring they can correctly and efficiently engage with the product or service it accompanies.

No use

Corresponds to a state of non-operation of the device.

Non-recyclable packaging

Packaging that cannot be effectively recovered, recycled or reused after use.

O.S

Operating System is a set of programs that direct the use of a computer's resources by application software.

Permanent assembly

This is an assembly of components forming a single part or component of a product, which cannot be disassembled without destroying or altering its intended use.

To remove the connection between two assemblies or parts, it is necessary to deform, degrade or destroy at least one of the parts forming the assembly. Examples: welding, crimping, clinching, stamping, gluing and adhesives.

Primary data or information

Information directly measured or collected by the professional in one or more installations representative of the professional's activities.

Product/part unit cost price (PRU)

Understood as the sum of the price of the parts making up a product/of the components of a part.

Professional tools

Tools requiring special knowledge or conditions of use, and whose acquisition cost represents an investment.

Professional user

Means any natural or legal person, to whom a product has been made available for use in the course of their industrial or professional activities

Proprietary tool

A specific tool, not commercially available, belonging exclusively to one party or company, by virtue of which its use by another party (end user, customer, repairer) involves copyright, a license and/or a cost.

PSR

"Product Specific Requirement, corresponds to the criterion specifications applicable to the types of equipment specified within the scope of the standard.

Reconditioned part

A second-hand product or spare part, within the meaning of Article L. 321-1 of the French Commercial Code, may be qualified as a "reconditioned product" or be accompanied by the term "reconditioned", provided the following conditions are met:

- The product or spare part has undergone tests on all its functionalities in order to establish that it complies with legal safety requirements and the use to which the consumer can legitimately expect it to be put.
- If necessary, the product or spare part has undergone one or more operations to restore its functionality. This intervention includes the deletion of all data recorded or stored in connection with a previous use or a previous user, before the product or part changes ownership."

Recyclable material or product

Characteristic of a product, packaging or associated component that can be taken from the waste stream by available processes and programs, and which can be collected, processed and put back into use as raw materials or products.(based on ISO 14021).

Recycled material or product

Product or material that is manufactured entirely or partially from recovered or reused materials, diverted from the waste stream after their initial use. These materials have undergone a transformation process, such as mechanical, chemical, or other forms of recycling, to be reintroduced into the production chain for creating new products or materials.

Recycling excludes the direct reuse of products or components without prior transformation and focuses on reducing the use of new raw materials.

Regular maintenance

Maintenance recommended by the manufacturer to keep the product in optimum working order.

Removable fastener

Corresponds to an original fastening system which can be removed during disassembly without damaging the product, but which cannot be reused during reassembly (e.g. plastic clamp, rivet).

Replacement or spare part

A replacement part is a separate part intended to replace a defective or degraded part having the same or a similar function of a good in operation; (Source: Annexes to the European Regulations laying down ecodesign requirements in accordance with Directive 2009/125/EC).

Return conditions for a repair process

- Complete returns conditions: special arrangements are in place to encourage the return of the product for a repair process, whether to the manufacturer, a partner or a repairer: free shipping, home pick-up, free replacement product during the repair process, free repair. These special arrangements are available both under warranty and out-of-warranty.
- Basic return conditions: users wishing to repair their product have the option of returning it for repair, but there are no special arrangements in place to facilitate this process (charges, etc.).
- No return solution: the end-user has no way of returning the product to the manufacturer or one of its partners for repair.

Reusable packaging

Container designed to be used over and over again, reducing the need for disposable packaging.

Reusable fastener

Corresponds to an original fastening system removed during disassembly without altering the product, and which can be reused during reassembly (e.g. screws, clips).

Reused parts

To date, there is no official definition of "re-use parts", but a definition of "re-use" provided in Article L. 541-1-1 of the French Environment Code, which defines it as follows:

Reuse: "an operation by which products or components that are not waste, are used again for a use identical to that for which they were designed".

Selling price of a spare part

Deduction of delivery costs: The principle adopted is to calculate without including transport or delivery costs. If these costs are included in the pricing of the general sales conditions, it is the responsibility of the producer or importer to deduct them for the calculation of the ratio. Specifically, for the price of spare parts, two methods are possible for deducting transport or delivery costs: individually for each part on list 2 or as a flat rate (in absolute value or as a percentage). The same applies to the price of new equipment.

Spare part(s) included in a set: If one or more parts are included in a set offered for sale or any other inseparable sub-assembly of parts, the price of the relevant part is the price of that sub-assembly.

Parts not managed by the producer or importer: If parts from list 2 are not managed by the producer or importer, the price of the parts to be considered is the price listed in the supplier's general sales conditions at the time of the index calculation.

Product options with the same reference: If options are offered for the same reference and do not affect the technical characteristics, then the price ratio calculation should be based on the price of the spare parts and the price of the most common version of the product concerned.

[Criterion 25](#) is established by calculating the ratio between: the ex-tax price of the spare part and the ex-tax price of the relevant equipment model, where each price is understood as the ex-tax price from the current price list at the time of the certification process and listed in the general sales conditions of the manufacturer or importer, or in any other relevant contractual document if not available.

If a manufacturer or importer has, for the parts or equipment concerned, several price lists depending on the different categories of distributors or sellers, the prices used for the index calculation are those from the price list that accounted for the highest share of the manufacturer's or importer's turnover for the type of parts or equipment concerned during the last closed fiscal year.

Serialization

Practice by which the manufacturer limits the use of spare parts to only those original parts that it approves, in particular by means of software.

Example: associating the serial numbers of a product's components with the product's overall serial number.

Spare part

A spare part is a distinct part that is an integral part of a product, essential to fulfill its primary function. It is not supposed to be replaced as part of normal use of the product, but may be replaced following accidental damage, long-term wear and tear, premature wear due to incorrect use or maintenance, or misplacement. In such cases, the spare part is exchanged for a replacement part.

Spare parts interface

Refers to the way in which parts connect or integrate with the existing components of a product. Depending on the type of part and the type of interface used to connect them, a classification is established: A standard part is a component, a part, manufactured to recognized specifications and standards, commonly used and compatible with various products or systems.

- **Standard part with standard interface:** Designates a standard part, manufactured according to recognized specifications and standards, commonly used and compatible with various products or systems, and whose connection or interaction with other components, devices or systems is based on standardized or widely used and accepted specifications.
- **Standard part with proprietary interface:** Refers to a standard part, manufactured according to recognized specifications and standards, commonly used and compatible with various products or systems, and whose connection or interaction with other components, devices or systems is based on specifications specific to a particular manufacturer or company.
- **Proprietary part with non-standard interface:** Refers to a non-standard part, exclusive to a product or company, usually produced in-house or under license. This type of part may have unique specifications that make it incompatible with other

products or brands. In addition, it may be designed with a specific connection to other components, devices or systems, also based on specifications specific to a particular manufacturer or company.

Step (disassembly)

Operation leading to part removal or tool change.

Sub-assembly

A set of inseparably connected components that form a block and perform a function. The sub-assembly may be separate from the product.

Example: Soldered motor and electronic board

Usage stress

This corresponds to the forces applied to the part.

Used parts

Used goods are goods which, at any stage of production or distribution, have come into the possession of a person for his or her own use, by the effect of any act for valuable consideration or free of charge, or have undergone alterations which do not allow them to be offered for sale as new (Source: Article L321-1 of the French Commercial Code).

Waste

Any substance or object, or more generally any movable asset, which the holder discards or intends or is required to discard. (Source: Directive n°2008/98/CE of November 19, 2008 on waste)

Working environment

When solving failure scenarios, a number of different working environments can be identified.

- **Operating environment:** Corresponds to the environment in which the product is used and does not express any specific requirements relating to the working environment for the resolution of failure scenarios.
- **Workshop environment:** Corresponds to an environment which does not require a production environment (class C), but where failure resolution scenarios cannot be carried out in the operating environment.
- **Production environment:** Corresponds to an environment necessary for the resolution of failure scenarios which is comparable to that in which the product was manufactured.

IX. BIBLIOGRAPHICAL RESOURCES

This paragraph lists the main bibliographical resources used to draw up the sector reference guide, which are likely to evolve according to the target product groups.

- [EN 60335-1 COMPIL 15 Household and similar electrical appliances - Safety - Part 1: general requirements](#)
- [EN 60384-14 Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed interference suppression capacitors and their connection to the power supply](#)
- [Standard EN 45552 General method for assessing the durability of energy-related products](#)
- [Standard EN 45554 General methods for the assessment of the ability to repair, reuse and improve of energy-related products](#)
- [DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment](#)
- [Regulation \(EC\) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals \(REACH\)](#)
- [DIRECTIVE 2012/19/EU on waste electrical and electronic equipment \(WEEE\)](#)
- [Delegated Regulation \(EU\) 2019/2015 supplementing Regulation \(EU\) 2017/1369 as regards energy labelling of light sources and repealing Delegated Regulation \(EU\) No 874/2012](#)
- [DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment \(WEEE\)](#)
- <https://www.consumerreports.org/electronics-computers/chargers/which-charging-cables-last-longest-a2032406624/>
- https://www.usb.org/cable_connector

X. VERSION UPDATE

Version number	Date of release	Summary of action	Editor
Standard V2_Charger & cable	03/2025	Editing the final version	François belin

Standard V2_Charger & cable	01/2025	Draft editing and consultation	François belin
Standard V2_Charger & cable	11/2024	Opening the editing process	François belin

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