LONGTIME®

Certification PSR

Semi-automatic espresso coffee machine

Summary

I. INTRODUCTION

Based on the standards of the EN 45550 series and consistent with the EN 45552 and EN 45554 standards, the specific LONGTIME® standards specify elements relating to the study of the robustness, reliability and reparability of the associated product family.
All qualitative, semi-quantitative or quantitative data comes from a research and consultation process, as required by current standards, and takes into account bibliographic references (scientific studies, regulations, standards, etc.). .) and all stakeholders; namely: 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 all stakeholders able to provide assistance subject to added value and the availability of networks and information.
The definition of prerequisites in terms of quality, energy thresholds, pollutant emission thresholds, classification of parts as well as the definition of the thresholds present in the accessibility scales come from the analysis of the consultations carried out and taking into account the best eco-design practices available on the market.
The specific LONGTIME® standards are revised every 3 years at the latest.

Vision of LONGTIME®

This project is part of a dynamic of societal movement with the desire to move ahead of regulations. This label is made by citizens, for citizens. It provides certainty that the product carrying the label is manufactured for long-term use, as desired by 80% of consumers, and that it is economically repairable.

LONGTIME® is a simple, strong and effective tool, created to inform the consumer actor concerned about the overall impact of their purchases, but also the consumer wishing to acquire a product with a fair longevity/price ratio. It also tends to bring to the forefront manufacturers keen to offer products with an optimized lifespan.

Label objectives

This approach involves encouraging different consumption, therefore aiming to produce differently. Almost all citizens want a transformation of the consumer society with a real change in the technical-economic paradigm in order to consume better and more sustainably.

The ecological interest is of course major, on a global scale we have increased our consumption of raw materials in just a few decades to now exceed 60 billion tonnes per year. The label influences the preservation of planetary resources, through better use of them and the reduction of waste.

Intuitively, therefore, obtaining a good with an optimized lifespan promotes reasoned use of our planet's resources, reduces overconsumption and allows us to move away from disposable items and waste. It is not a question of looking for “immortal” products but of fighting against the too short lifespan of products.

Extending the lifespan of a semi-automatic electrodomestic coffee machine by a few years can reduce the results of life cycle impact category indicators which mainly depend on the production phases occurring before the use phase. .
In other impact categories, the benefit of extending the lifespan will largely depend on the energy efficiency of the replacement product, knowing that the average lifespan of semi-automatic electrodomestic espresso coffee machines is estimated at 10 years and that the improvement in energy efficiency is of the order of 2 to 3% per year.

Fields of application

The label is applicable to different product families as long as there is an assembly of parts. LONGTIME® tends to cover domestic, electronic, portable power appliances, furniture, leisure equipment, professional equipment, etc. The range of products is therefore very vast but excludes automobiles, textile products (excluding leather goods), food, cosmetics and chemicals.

Organization of the certification PSR

The criteria are broken down into several categories and the presentation of the criteria follows the following diagram:

Criteria category

The criteria are grouped into 11 main categories

Criterion number and name

Each criterion has an identification number in I.X.X format and a name allowing its theme to be defined.

Requirement level (KO/Major/Minor)

See table below

TRANSVERSE CRITERION

Criterion applicable to all product categories

- Spécification ou Product Specific Requirement (PSR)

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

Means of proof

Details of the means of proof required and/or relevant for the evaluation of the criterion and its PSRs

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A level of requirement is assigned to each label criterion according to the classification indicated in the table below:

KO	These criteria must be respected to qualify for labeling after the initial audit (year N).

Major	These criteria must be respected at least 80% during the audit. They will lead to the implementation of corrective actions to reach 100% by year N+1.
Minor	These criteria must be respected at least 50% during the audit. They will lead to the implementation of corrective actions to reach 80% by year N+1 and 100% by year N+2.

Control system

The assessment of compliance with the benchmark criteria is carried out by an approved and independent inspection body.
Each criterion is assessed using a compliant/non-compliant approach
More details on the control system in the labeling process available on the LONGTIME® labeling conditions online.

Standards and regulations

The standards or regulations cited in the reference system use the most recent versions and/or equivalences published in the official journal of the European Union.

II. DEFINITION OF THE PRODUCT SCOPE

The “Electrodomestic semi-automatic espresso coffee machine” standard is dedicated to household appliances designed to prepare espresso coffee by combining automation and manual user intervention. Electrically powered only, these machines are equipped with a water tank, an independent heat source and a percolator requiring the addition of previously ground coffee. Some products come with a built-in bean grinder. These machines use pressure brewing technology to deliver one or two cups of espresso coffee through automation of all stages of espresso making and using pressure brewing technology. The partial automation of these machines allows personalized control of the preparation process while maintaining ease of use.

Product scope

- Semi-automatic electrodomestic coffee machine (percolator) without grinder
- Semi-automatic electrodomestic coffee machine (percolator) with grinder grinder

Outside the product scope

- Automatic electrodomestic espresso coffee machine
- Pod espresso machine
- Professional coffee or espresso machine (CHR, Tertiary)
- Filter coffee machine (drip)
- Coffee urn

In the rest of the repository, “ **Semi-automatic electrodomestic coffee machine**" is replaced by **“Semi-automatic coffee machine”**.

III. NOMENCLATURE OF PARTS

List of parts representative of the target product group but not-exhaustive.

- **Machine body assembly**
  - Frame
  - Pedestal, support, base
  - Feet
  - Façade
  - Control panel
  - Hood, covers, trim panels (front/rear, side, upper/lower)
  - Side supports

- **Control assembly (start-up, settings, programs, etc.):**
  - Control button, (tactile, mechanical)
  - Program selector, timer
  - Switch

- **Electrical and electronic assembly**
  - EEPROM type read only memory
  - Switch, switch
  - LEDs, indicators (diodes)
  - Connection cables
  - Phase terminal block
  - Relay
  - Coffee machine On-Off button or switch
  - Power supply cable
  - Anti-parasitic coils
  - Power electronic cards
  - Electronic control card(s) or module(s)
  - Electronic display card(s) or module(s)
  - Electric motor(s) capacitor(s) (starting, permanent)
  - Analog or digital display (display)
  - Management, regulation of the water heating system with temperature probe (CTN type) or thermostat
  - Position or safety sensor or contactors (Hall effect sensor type, microswitch, micro switch, etc.)

- **Hydraulic assembly:**
  - Water reservoir
  - Water tank filter
  - Limescale filter / Anti-scale magnet ring
  - Water tank valve
  - Water tank status indicator(s) (presence, level)
  - Hose(s)
  - Nozzles (coffee, frother, hot water, milk, etc.)
  - Anti-burn rubber for steam tube

- Drain board (structure) / Drip tray
- Drip tray status indicator(s) (level, presence)
- Heating module for cup warmer (PTC)
- Water pump (bracket, shock absorber)
- Flow meter
- Thermoblock / Boiler / Heating circulating pump (resistance, Klixon type thermostat)
- Electro Multiway Valve

- **Brewing unit assembly**
  - Percolator machine support
  - Percolator
  - Mechanical valve
  - Pressure indicator system

- **Grain grinder assembly**
  - Coffee bean tank cover (including gasket)
  - Coffee bean container
  - Grain mill wheels
  - Crusher transmission or drive mechanism
  - Grain grinder electric motor
  - Grinder adjustment button (grinding fineness)
  - Step by step contactor (grind adjustment)

- **Sealing assembly of mechanical and hydraulic connections**
  - Seals (black, green, orange)
  - Other sealing mechanisms (O-ring, flat, conical, lips, silicone, etc.)

- **Maintenance and stabilization assembly of mechanical and hydraulic connections**
  - Fitting (brass, Bakelite)
  - Agraphe
  - Other stabilization mechanisms (spring, spacer, bearing, etc.)
  - Other holding mechanisms (screws, bolts, circlips, etc.)
  - Translation mechanism (slides)

IV. ACCESSIBILITY SCALE

The accessibility scale has 3 levels and aggregates data related to repairability; notably :

- The dismantling depth of the part in number of steps
- Dismantling time in minutes
- The level of skill required to complete the task
- The tools needed for the process

A	≤ 3 steps | ≤ 5 mins | any user | consumer tools

B	≤ 7 steps | ≤ 12 mins | experienced user or repairer | general public tools, experienced public tools
C	≤ 10 steps | ≤ 20 mins | experienced user or repairer | general public tools, experienced public tools, professional tools

The scales indicated in the table above are orders of magnitude not to be exceeded but these thresholds can be limited more precisely in the criteria calling for accessibility scales.

By respecting all the appropriate safety instructions, the count of the disassembly steps starts when the product is still connected to the networks.

V. EXPOSURE OF PRODUCT TO EXOGENOUS FAILURES

Definition

An exogenous failure of a manufactured product refers to a defect or problem that arises due to external factors or conditions beyond the control of the manufacturer or producer. Unlike endogenous failure, which is related to internal design, manufacturing or quality problems, exogenous failure is usually the result of unforeseen or unexpected external circumstances. (Example of causes of exogenous failure: extreme environmental conditions, poor compliance with transport conditions, inappropriate handling by the end user)

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 the conditions of use in the face of the weight of the constraints of use. Related levels:

- Low : the user scrupulously respects the rules for using the product, particularly for reasons of quality and safety
- Medium : the user generally respects the rules for using the product
- High : the user may not respect the rules for using the product due to a difficult context of use

System mobility :

Translates the hazards linked to the movement possibilities of the system (fixed environment, moving environment: movement in a vehicle for example). Related levels:

- Low : Few hazards (fixed or stable environment)
- Medium : Moderate hazards
- High : Strong hazards, great variability (transport by car, etc.)

Product handling :

Reflects the possibility of false handling, shocks, falls. Associated levels:

- Low : Not manipulated
- Medium : Handling without moving or dismantling
- High : Handling with movement or disassembly

Exposure to bad weather :

Reflects exposure to rain, hail, frost, wind, sand, lightning, dust, salt fog, etc. Associated levels:

- Low : Zero exposure (inside home)
- Medium : Indirect exposure (hold, station hall)
- High : Direct exposure (outdoor)

Phase	User risk	System mobility	Product handling	Exposure to bad weather	Overall risk
Inactivity	Medium	Low	Low	Low	Low
Ignition Extinction	Low	Low	Low	Low	Low
Machine preparation	Low	Low	Medium	Low	Low
Extraction	Low	Low	Low	Low	Low
Cleaning	Medium	Low	Medium	Low	Medium

Assessment of the overall risk of exogenous failures - Low

The main risks of exogenous failures for this product category mainly result in:

- **Phase Inactivity**
  - In the inactivity phase, the product is exposed to surges in the electrical network
  - Given the presence of a hydraulic circuit, the equipment is exposed to the risk of scaling in the event of prolonged inactivity

- **Machine Preparation Phase**
  - The main risk is a fall of the water tank when filling or a fall of the percolator

- **Cleaning Phase**
  - Use of unsuitable detergent
  - Using a scaling method that is too aggressive
  - Poor compliance with servicing and maintenance instructions with deadlines that are too far apart

This product category is subject to a low risk of exogenous failures. Semi-automatic coffee machines must therefore be tested in order to test their robustness in the face of normally foreseeable constraints of use.

These reliability elements are described in the Design chapter, I.1.1. State of the art and technical solutions. In order to minimize the risk of degradation due to limescale, particular importance must also be given to the manuals allowing servicing and maintenance described in the User information chapters of the Documentation chapter.

VI. ELIGIBILITY

Candidate commitment

The candidate's eligibility in a quality certification process must be consistent with their existing values and strategies.
The company has not been accused or found responsible (information/material evidence, subpoena), of ethical violation, of commercial practices clearly contrary to quality and ethics (practice of planned obsolescence, industrial espionage, fraud -tax) or major environmental impact over the last 10 years where considerable and appropriate efforts have been put in place to: repair the damage caused, prevent it from happening again, reduce their impacts.
The manufacturer has all the necessary rights over the products and is the sole holder of property rights of any kind over the products, including in particular the designs, patents and trademarks relating thereto.
The products are not subject to any dispute of any nature whatsoever from any third party.
The products are not likely to harm public order or good morals, to provoke protests from third parties, or to contravene the legal provisions in force.
For the marketing of the products, the manufacturer agrees to its obligations and strictly complies with all legal provisions (directives, regulations, standards, laws) relating to the protection of human health, safety and the protection of the environment prevailing in the geographic areas of product distribution and in relation to its product categories. For the European Economic Area, products must therefore obey European legislation and be in compliance with the “CE” marking for the products concerned.

VII. LABEL CRITERIA

Environmental performance and/or energy mandate

PR.1. Protection of health, safety and environment

Criterion Prerequisites

Within the framework of respect for human health, the safety of people, installations and protection of the environment, the producer proves that he deploys actions according to a level of requirements compliant at least with the prerogatives of the European directives 2011/65/EU and (EC) No 1907/2006 relating to the limitation of the use of certain dangerous substances in electrical and electronic equipment where necessary.

Method 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 dangerous substances in the EEA, proof of compliance with these regulatory requirements will be used. method of proof in compliance with the PSR of this criterion if necessary.

- The materials of semi-automatic coffee machines intended to come into contact directly or indirectly with foodstuffs, including water, are compatible with food use and comply at least with Regulation (EC) No 1935/2004.

Method 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 dangerous substances in the EEA, proof of compliance with these regulatory requirements will be used. method of proof in compliance with the PSR of this criterion if necessary.

- Water tanks made of plastic comply with the requirements of Regulation (EU) No 10/2011 and ban the use of Bisphenol A.

Method of proof: Composition of the tank assessed by the inspection body mandated during the audit based on the technical data of the materials.

- For large companies (workforce > 5,000 people), the main site(s) involved in the production of the product have(s) a certification linked to an international environmental management standard.

Method of proof: ISO 14001 certification delivered by an accredited third-party inspection body.

- The manufacturer reduces the proportion of non-recoverable plastic waste in its packaging thanks to:

- 95% minimum by weight of all recycled and/or recyclable and/or reusable packaging waste
- Manual separability of non-recyclable packaging components weighing more than 25 grams into single components for non-reusable packaging

Method of proof: Composition and characterization of packaging

PR.2. Energy and/or environmental performance

Criterion Prerequisites

As part of reducing the impacts linked to energy consumption or pollution emissions, the producer demonstrates the environmental and/or energy performance of its products.
It proves that it deploys actions according to a level of requirements consistent, at a minimum, with the prerogatives of the European (EU) directives and/or regulations 2009/125/EC (including its implementing measures) on the ecodesign of energy-related products and (EU) 2017/1369 (including delegated regulations) on energy labeling of products if the product claiming the LONGTIME® label is concerned.

Method of proof: For products distributed in geographical areas potentially covered by regulatory prerogatives establishing requirements in terms of energy efficiency, eco-design and energy display similar to the European market, proof of compliance with these requirements regulatory requirements will serve as a method of proof in compliance with the PSR of this criterion if necessary.

- The semi-automatic coffee machines are equipped with an energy management system resulting in a maximum consumption of 0.5 Watt:
  - An automatic extinguishing device
  - And/or a deep sleep device
  - And/or a mains switch accessible to the user

- Semi-automatic coffee machines with a “keep warm” function have a device to deactivate this function automatically and must not consume more than 35W before deactivation.

- Semi-automatic coffee machines, when not in use, have maximum consumption equivalent to:
  - Maximum 1 Watt when it provides information (time, water temperature, error code)
  - Maximum 2 Watts per IOT

Method of proof: Eco-design measures assessed by the inspection body mandated during the audit. Technical specification present in the Product Database relating to conformity and containing the technical documentation referred to in Article 12(5) of REGULATION (EU) 2017/1369

- The energy consumption of devices eligible for the label complies with a minimum energy class A and respects the median consumption threshold for the class: 65 kWh/year.

Method of proof: The energy class and consumption per hour must be determined according to standard EN 60661:2014

- Semi-automatic coffee machines have an effective incentive mechanism (indicator) for maintenance and descaling for the user, taking into account the hardness of the water.

- The manufacturer clearly informs the user about the usage scenario(s) to minimize the energy consumption of the machine and explains the differences in consumption between the different operating modes (ready to operate, deep sleep, complete shutdown, etc.). .).

Method of proof: Eco-design measures assessed by the inspection body mandated during the audit.

PR.3. End of life management of equipment

Criterion Prerequisites

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

Method of proof: In geographic distribution areas covered by regulatory prerogatives establishing product collection and recycling requirements, proof of compliance with these regulatory requirements will serve as a mode of proof in compliance with the PSRs of this criterion if necessary.

Conception

I.1.1. State of the art and technical solutions

Criterion KO

The manufacturer identifies and records in a technical sheet the constraints on the use of the product and its different parts. It justifies reliable and qualitative design choices and technical solutions with regard to these constraints.

General methods of proof of the criterion: All of the following methods of proof can be used to validate the sectoral sub-criteria identified in this criterion.

Visual inspection by a third-party auditor mandated during the on-site audit supplemented by a set of data appropriate to the sub-criteria:

- *CE marking database*
- *Type folder*
- *Supplier quality data (technical specification sheet, ISO 9001:2015, certification(s), quality assurance(s), etc.)*
- *Qualification and performance test data (external/internal). Conclusive tests for accelerated lifespan or aging, wear, endurance, resistance to limit conditions.*
- *Any documentary/software element to support compliance such as:*
  - *Internal product data sheet*
  - *Specifications, characteristics and technical data relating to the material*
  - *Functional analysis tool*
  - *Design study (operation, materials, usage constraints)*
  - *Performances et tests d'endurance*
  - *Phase and qualifying test*
  - *Study of breakdown rates*
  - *Quality commitment (commercial guarantee)*
- *Rate warranty and non-warranty failure rates: The product must demonstrate failure rates lower than the market sector average*
- *Tests concerning the product family specifically, based on mandatory application standards linked to safety directives and including elements of resistance to use constraints:*
  EN 60335-2-14 and amendments (Domestic and similar electrical appliances Safety Part 2-14: Particular rules for kitchen machines).
- *Tests concerning the product family and/or its components specifically, based on voluntary application standards*
- *EN 60335-2-15 (Domestic and similar electrical appliances - Safety - Part 2-15: special requirements for liquid heating appliances.*
- *EN 60661:2014 Methods for measuring the fitness for purpose of electric coffee makers for domestic use*
- *EN 60068-2-38 (resistance of components to temperature and humidity)*

❖ **General resistance to operating and environmental conditions:**

- Conclusive durability of ferrous, non-ferrous materials at the operating conditions below. More particularly for the parts, percolation unit, hydraulic system, internal mobility elements, fixing system:
  - Hot water
  - Humidity
  - Food residue
  - Dust

- Protection of subassemblies and internal components and fixing systems against attacks (dust, coffee residue, humidity, water, etc.)
  - Protection of electrical or electronic components
  - Sizing and choice of components adapted to the risks of attacks
  - Product design and/or selection of waterproof or attack-resistant components (watertight compartment, optimization of the location of sensitive components, components insensitive to oxidation, etc.)

Method of proof:
- *Characterization of processes and coatings by technical data, wear and aging tests.*
- *Compliance with the IP index adapted to the constraints of use defined in standard EN 60529.*
- *Resistance of the product to environmental and use constraints: MIL-STD-810 type*

❖ **Durability of electronic components**
- Durability of capacitors (permanent, startup): Class B minimum (10,000 hours)
- Reliability of position sensors (Hall effect sensor recommended)
- Thermal regulation (ventilation & cooling) and effective protection against overheating (ventilation, spacing, heat sink, etc.) of temperature-sensitive components (power components, capacitors)
- Sealing of electrical and electronic contacts ensured by product design or by design elements compatible with the objectives of promoting repairability
- Robust control modules with high resistance to repeated handling

Mode of proof :
- *Characterization parts and processes by technical data, wear and aging tests.*

❖ **Durability of the hydraulic system:**
- System resistance hydraulic pressure and heat constraints
  - Hose materials and sizing adapted to thermal and mechanical constraints (pressure) according to their functions and locations
  - Seals adapted to thermal (hot water) and/or mechanical (pressure) constraints depending on their functions and locations
- Fastening elements adapted to thermal and mechanical constraints (pressure)
- Robust hydraulic system with increased wear resistance of priority components
  - Heating system (thermoblock, boiler, heating circulator)
  - Water pump
  - Flow meter
- Protection of priority components from the risk of overheating (intensive use, crusher blocking)
  - Thermal management by safety element
  - Cooling mechanism such as cooling fan or heatsink

Method of proof: Characterization of materials and components, by technical data, quality certificate, wear and aging test. Vibration test according to NF EN 60994.

❖ **Durability of the brewing unit:**
- Resistance of the brewing unit to humidity and heat

- Durability of the coffee group (percolator and machine support)
- Resistance of the coffee group (percolator and machine support) to wear by friction/rubbing
- Durability of the grain mill (only for equipped machines)
    - Robustness of grinding wheel materials and drive system
    - Reliability of electric motors and its components (starting capacitor)
    - Protection of the electric motor from external attacks with consistent protection class
    - Protection of electric motor(s) (grain grinder motor) taking into account the risk of overheating (intensive use, grinder blocking)
        - Thermal management by safety element
        - Cooling mechanism such as cooling fan or heatsink

Method of proof: Characterization of materials and components, by technical data, quality certificate, wear and aging test.

❖ Management of exogenous failures:
- Protection of the system against the risk of severe scaling
    - Filter upstream of the hydraulic circuit
    - Maintenance indicator
    - Descaling or maintenance program
- Protection against risks of spills (type overflow, end of extraction, cleaning cycle, etc.)

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

❖ Specific measures in favor of reparation:
- Prohibited serialization practices
- Intuitive failure mode diagnostic interfaces

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

I.1.2. Production

Major criterion

The manufacturer has processes enabling it to control and maintain constant quality of manufacturing and assembly in production.

❖ The main site(s) involved in the production of the product own(have)) standard quality assurance, via so-called serial certification, linked to international quality management and management standards from a system and product point of view.

- Site involved in the production of electronic cards
- Site involved in the production of water pumps
- Site involved in the production of boilers / Thermoblock
- Site involved in the production of grain mill for equipped products

Method of proof: ISO 9001 certification or equivalent certification. For companies with more than 250 employees, ISO 9001 certification is delivered by an accredited third-party inspection body. Demonstration of compliance with the principles of ISO 9001 by verification of quality procedures or by equivalence in other certifications.

I.1.3. Consumable parts and accessories

Major criterion

Consumable parts, accessories and parts requiring regular maintenance comply with accessibility scale A.

❖ Accessibility scale limited to 3 steps and 5 minutes

Consumable parts : parts intended to be replaced, subject to wear during use of the device.

- **Hydraulic assembly**
  - Water tank filter
  - Limescale filter / Anti-scale magnet ring

Maintenance parts : elements requiring maintenance at regular intervals recommended in order to keep the product in optimal operating condition.

- **Hydraulic assembly**
  - Water reservoir
  - Drain board (structure) / Drip tray

- **Brewing unit assembly:**
  - Percolator

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

I.1.4. Security elements

Criterion KO

The replacement and/or rearming of product and/or user safety elements is provided by the manufacturer. These elements respect accessibility scale B.
These are all the active and passive parts necessary to protect against risks associated with the use of the product.

❖ Accessibility scale limited to 10 steps and 15 minutes

- **Electrical and electronic assembly**
  - Management, regulation of the water heating system with temperature probe (CTN type) or thermostat
  - Position or safety sensor or contactors (Hall effect sensor type, microswitch, microswitch...)

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

I.1.5. Vulnerable parts

Criterion KO

Vulnerable parts include parts exposed to a high rate of accidental user breakage. The replacement of these parts complies with accessibility scale B.

- Accessibility scale limited to 5 steps and 15 minutes

Not identified according to the definition of the LONGTIME® standard or already broken down into other types of parts

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

I.1.6. Non usage

Minor criterion

The manufacturer identifies the consequences of non-use of the product and must inform the consumer in the recommendations for use of the minimum use necessary for the proper functioning of the product.

- Applicable: Product family sensitive to non-use in the event of prolonged immobilization and more particularly to the risk of scaling
  - Hydraulic circuit assembly

- Consistent duration from which non-use is defined: 15 days

I.1.7. Unproven technology

Criterion KO

The manufacturer provides information on the unproven technology in its product. It must provide the means implemented to guarantee its reliability or ensure that the normal use of the product does not depend on this technology.

- IOT function

Method of proof: Real-time demonstration to the inspection body mandated during the on-site audit.

I.1.8. External source parts

Minor criterion

The manufacturer records external source parts purchased and/or subprocessed. It must provide information relating to their origin and quality.

- Particular attention will be paid to the following elements:
  - Flow meter
  - Water pump
  - Capacitor(s)
  - Chaudière / Thermoblock

Method of proof: Supplier certification and demonstration of quality management to the inspection body mandated during the on-site audit or 10-year manufacturer quality commitment.

I.1.9. Reliability plan

Minor criterion

The manufacturer provides its own FMEA, FMEA or internal audit and identifies the changes implemented to improve the reliability and/or repairability of the product. Corrections or improvements already made to the product are indicated.

I.1.10. sub-assembly

Major criterion

The product design must only use subassemblies on technical justification or proof of reliability.
Without technical justification, the subassemblies must be subject to a standard reconditioning and/or exchange route where the manufacturer demonstrates the economic interest for the user.

Scalability

I.2.1. Software

Major criterion

The manufacturer ensures that the original performance of its product is maintained during OS updates. without a time limit. The manufacturer identifies and records the means it uses to monitor the maintenance of these post-upgrade performances.

Traceability

I.3.1. Study and failure rate

Minor criterion

The manufacturer provides breakdown rates and/or indicators enabling the reliability of the product to be monitored at least until the last unit of the model concerned is placed on the market.

❖ Particular attention will be paid to the following failures:

- **Hydraulic failure**
  - Pump (unprimed, damage to internal pump seal, worn ball, power supply)
  - Damaged pipes or hoses (cut, scaled, bent, mechanical property of unsuitable hoses, dimensioning too low)
  - Faulty flow meter
  - Sealing defect (unsuitable seal properties or too low sizing)

- **Thermal regulation failure**
  - Faulty temperature sensor (CTN)
  - Faulty boiler or resistance
  - Faulty electronic control card

- **Electronic failure**
  - Short circuit (electronic board, component, printed circuit)
  - Electronic display card or HS card component
  - Failure of the control device (buttons, touch system, electronic card, programmer)

I.3.2. Identification number

Minor criterion

The manufacturer uses an identification number or method on each product.

Method of proof: In geographic distribution areas covered by regulatory pre-rotations establishing identification requirements, proof of compliance with these regulatory requirements will serve as a mode of proof in compliance with the PSRs of this criterion if necessary.

Disassembly

II.1.1. Product packaging

Criterion KO

Brings together all the product's covering parts (cover type) to protect the internal components from the outside.
The body of the product is removable and allows access to internal elements while respecting accessibility scale B. Permanent assemblies are prohibited unless the nature or use of the product justifies it.

❖ Accessibility scale limited to 5 steps and 10 minutes

- **Machine body assembly**
  - Frame
  - Pedestal, support, base
  - Feet
  - Façade

- Control panel
- Hood, covers, trim panels (front/rear, side, upper/lower)
- Side supports

❖ Non-justifiable, unauthorized permanent assembly.

❖ In case of assembly by clips, verification of the quality of the clips and the availability of location information.

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

II.1.2. Access to functional parts

Major criterion

Parts related to the operation or use of the product.
Access to functional parts cannot exceed accessibility scale C.

❖ Accessibility scale limited to 15 steps and 20 minutes

- **Ensemble order (start-up, settings, programs, etc.)**
  - Control button, (tactile, mechanical)
  - Program selector, timer
  - Switch

- **Electrical and electronic assembly**
  - EEPROM type read only memory
  - Switch, switch
  - LEDs, indicators (diodes)
  - Connection cables
  - Phase terminal block
  - Relay
  - Coffee machine On-Off button or switch
  - Power supply cable
  - Anti-parasitic coils

- **Hydraulic assembly**
  - Water tank valve
  - Water tank status indicator(s) (presence, level)
  - Hose(s)
  - Nozzles (coffee, frother, hot water, milk...)
  - Anti-burn rubber for steam tube
  - Float drip tray
  - Drip tray status indicator(s) (level, presence)
  - Heating module for cup warmer (PTC)

- **Brewing unit assembly**
  - Pressure indicator system

- **Grain grinder assembly**
  - Coffee bean tank cover (including gasket)
  - Coffee bean container
  - Grinder adjustment button (grinding fineness)
  - Step by step contactor (grind adjustment)

- **Maintenance and stabilization assembly of mechanical connections**
  - Other stabilization mechanisms (spring, spacer, bearing, etc.)
  - Other holding mechanisms (screws, bolts, circlips, etc.)
  - Translation mechanism (slides)

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

II.1.3. Access to priority parts

Major criterion

Functional parts but characterized by proven criticality in the event of a malfunction or breakdown (sometimes called critical parts).
Access to priority rooms complies with accessibility scale B or has been the subject of a reliability plan.

❖ Accessibility scale limited to 10 steps and 15 minutes

- **Electrical and electronic assembly**
  - Power electronic cards
  - Electronic control card(s) or module(s)
  - Electronic display card(s) or module(s)
  - Analog or digital display (display)
  - Electric motor(s) capacitor(s) (starting, permanent)

- **Hydraulic assembly**
  - Water pump (bracket, shock absorber)
  - Flow meter
  - Thermoblock / Boiler / Heating circulating pump (resistance, Klixon type thermostat)
  - Multi-way solenoid valve

- **Grain grinder assembly**
  - Grain mill wheels
  - Crusher transmission or drive mechanism
  - Grain grinder electric motor

- **Brewing unit assembly**
  - Percolator stand
  - Mechanical valve

- **Sealing assembly of mechanical and hydraulic connections**
  - Seals (black, green, orange)
  - Other sealing mechanisms (O-ring, flat, conical, lips, silicone, etc.)

- **Maintenance and stabilization assembly of mechanical and hydraulic connections**
  - Fitting (brass, Bakelite)
  - Agraphe

❖ The fixings of the different priority parts of the product having both a function must be removable and reusable (Class A standard EN 45554)

In the event that the fixing system cannot be reused, it must be supplied with the replacement part to allow resolution of the failure or maintenance scenario.

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

II.1.4. Sub-assembly connectors (internal parts)

Major criterion

The connectors of the replacement subassemblies must not interfere with the repair of the product.

❖ All connector fixing elements must be at least removable (class B standard EN 45554).

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

II.1.5. Batteries

Criterion KO

The manufacturer provides a solution for replacing the batteries of autonomously operating devices.

❖ Non applicable

II.1.6. Disassembly tools

Major criterion

Disassembly of the product does not require a proprietary tool, apart from regulatory justification.

❖ No regulatory justification identified

❖ List of tools in accordance with the list in table A2 of standard EN 45554 and supplemented with basic tools specific to the target product group

- Extractor of bearings and/or bearings that may exist in electric motors or transmission systems
- Joint extractor

❖ Tolerance allowed for proprietary tools provided on request at no cost additional with the spare part.

Method of proof: Visual inspection and real-time demonstration to the inspection body mandated during the on-site audit.

Documentation

II.2.1. Exploded diagram

Major criterion

The manufacturer makes available to users, directly or indirectly via its partners or its network, diagram(s) or exploded view(s) of the product as well as a nomenclature of the parts and subassemblies of the product.

II.2.2. Exploded diagram

Minor criterion

The manufacturer references and delivers more specific exploded views to help identify and name a part.

II.2.3. Fault code

Major criterion

User and repairer fault codes must be present in the respective documentation and/or accessible on the manufacturer's website.

II.2.4. Repair Manual

Minor criterion

The manufacturer makes the information necessary for repairing the product accessible to repairers OR must justify economically viable alternatives for the end user.

❖ All documents necessary for resolving failure scenarios must be exhaustive and accessible (Class A Table A.10 of standard EN 45554) for all professionals in the sector and as a priority:
  - A disassembly diagram or exploded view
  - A technical instruction manual for resolving failure scenarios
  - A list of necessary repair and testing equipment
  - Component and diagnostic information (such as theoretical minimum and maximum values for measurements)

- Wiring and connection diagrams
- Error and diagnostic codes (including manufacturer-specific codes, if applicable)
- Instructions for installing relevant software and firmware, including reset software
- Information on how to access data relating to failure incidents if they are recorded in the product

Method of proof: Visual inspection and real-time demonstration to the mandated inspection body during the documentary audit or on-site audit.

II.2.5. Troubleshooting software packages

Minor criterion

The fault diagnosis software packages must be free of rights after the full warranty period with regard to the end date of manufacture of the product.

Spare parts

II.3.1. Nomenclature

Major criterion

All spare parts or subassemblies are uniquely named and coded to facilitate identification and ordering of parts.

II.3.2. Availability time

Criterion KO

The manufacturer commits in its General Terms and Conditions or via commercial communication to the availability of spare parts or replacement parts for the product for a minimum of 5 to 10 years from the placing on the market of the last unit of the model concerned. The minimum availability time required is determined in the sectoral appendix.

- Availability of spare parts 10 years minimum (Class A - Long-term accessibility; Table A9 according to standard EN 45554)

Method of proof: Mode of proof: Demonstration to the mandated inspection body during the documentary audit or on-site audit (general conditions of sale).

II.3.3. Supply time

Minor criterion

For functional parts or sub-assembly, the manufacturer has a minimum reserve to meet the probability of demand for said part OR justification for a procurement process within identical deadlines.

II.3.4. Price of spare parts

Major criterion

The terms and conditions for purchasing spare parts are detailed (average price, distribution network, etc.). The manufacturer makes every effort to limit the total price of functional parts to the maximum recommended selling price excluding tax of the product.
The value of one of these functional parts cannot exceed the set percentage of the maximum recommended selling price excluding tax of the product.

- Percentage set at 25%. A tolerance is allowed for parts whose PRU would exceed 20%.
- All replacement parts must be accessible.

Method of proof: Visual inspection and real-time demonstration to the mandated inspection body during the documentary audit or on-site audit.

II.3.5. Price of delivery costs

Minor criterion

The manufacturer delivers the spare parts at actual shipping and preparation costs or offers alternative solutions reducing the cost of receiving the spare parts.

After-sales service under warranty

II.4.1. Contact du SAV

Minor criterion

The maximum time for opening an after-sales service file must not exceed 2 working days.

II.4.2. Support

Major criterion

The manufacturer provides the end user with an after-sales service network in line with its direct distribution network.

II.4.3. Repair policy

Major criterion

Repair must take precedence over replacement.

Out-of-warranty after-sales service

II.5.1. After-sales service network

Minor criterion

The user is provided with the means to facilitate the repair of his product outside of warranty. To support the product to be repaired, the manufacturer must provide the user with the benefit of its distribution and repair network.

Free long-term warranty

III.1.1. Warranty time

Criterion KO

The warranty period with presumption of prior history of the defect is determined in the sectoral annex. This time cannot be less than 24 months.

- 24 months minimum

Method of proof: Demonstration to the mandated inspection body during the documentary audit or on-site audit (general conditions of sale).

III.1.2. Warranty conditions (beyond the legal conformity period)

Major criterion

For product categories considered to be “highly useful”, the manufacturer provides for the provision of a replacement item to the user during the period of downtime of the product for repair.

- Product not considered of much use

III.1.3. Disclaimer of warranty

Major criterion

The warranty exclusions must not be excessive with regard to the normal conditions of use of the product. They will be defined in the sectoral annex.

- Warranty exclusions that may be identified as unfair:
  - Microrayuresurface(s)
  - Trace of limestone

Method of proof: Demonstration to the mandated inspection body during the documentary audit or on-site audit (general conditions of sale).

III.1.4. Assignment of Warranty

Major criterion

The manufacturer sets up a transferable guarantee system.

III.1.5. Original package

Minor criterion

Return of the original packaging cannot be required for warranty coverage.

Use and care instructions

III.2.1. Usage information provided

Major criterion

The manufacturer delivers with the product a notice with advice on use and maintenance of the product. This information must be exhaustive and relevant in order to reduce the exogenous failure rate.

- The manufacturer clearly makes the user aware, via the instructions and/or its website, of responsible use of the device.
  - Maintenance with particular emphasis on the concept and importance of descaling
  - Use
  - Valorization of consumables
  - Repair

Method of proof: Visual inspection and real-time demonstration to the mandated inspection body during the documentary audit or on-site audit (physical and/or digital instructions for use).

III.2.2. Usage information provided

Major criterion

The use and maintenance advice booklet is clear, simple and accessible (adapted font size, vocabulary, language and print quality), so as to be easily understandable by end users.

III.2.3. Access to information

Minor criterion

Information relating to the use and maintenance of the property must be available in digital version on simple request or freely accessible on the manufacturer's website.

VIII. TERMS AND DEFINITIONS

Depending on sectoral standards, definitions specific to different product categories (parts, functions, etc.) can be added to the recurring definitions below.

AMDEC / FMEA
Tools allowing the Analysis of Failure Modes, their Effects and their Criticality / Failure Mode and Effect Analysis.

Permanent assembly
It is a set of components forming a single piece or part of a product and cannot be dismantled without destruction or alteration of the use for which it is intended.
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, bonding and adhesives.

Constraint of use
It corresponds to the forces which apply to the part.

Criticality
The criticality of a failure refers to the importance or impact of this failure on the proper functioning of a product. It is evaluated according to the severity of the consequences that the failure could cause, particularly in terms of safety/costs, and the frequency of occurrence.

Actual failure
Failure which is actually linked to a malfunction of the product and not to an exogenous problem. (e.g. power outlet not powered, power cable not properly connected, lid not properly locked, etc.)

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

Seasonal energy efficiency for space heating
The ratio (Ns), expressed as a %, between the space heating demand for a designated heating season, covered by a heating device, and the annual energy consumption required to meet this demand.

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

Compostable packaging
Container designed with materials capable of decomposing naturally under the action of microorganisms present in the composter to become a natural or organic element of the substrate.

Reusable packaging
Container designed to be used multiple times, reducing the need for disposable packaging.

Non-recoverable packaging
Refers to a type of packaging that cannot be effectively recovered, recycled or reused after use.

Regular maintenance
Maintenance recommended by the manufacturer to keep the product in optimal operating condition.

Working environment
When resolving failure scenarios, several working environments may be listed.

EOS
Acronym for Electrical Overstress reflecting a state of undesirable electrical overload likely to lead to damage or failure of the product.

Step (disassembly)
Operation leading to the removal of a part or a tool change.

Espresso
Espresso coffee is defined as an infusion obtained by percolating hot water under pressure through a compacted cake of roasted ground coffee, where the energy of the water pressure is expended in the cake via the percolator (Illy et al ., 2005).

Reusable attachment
Corresponds to an original fixing system removed during disassembly without altering the product and which is reusable during reassembly (e.g. screws, clips).

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

HS
Out of service ; corresponds to exiting the functional state.

Spare parts interface
Refers to how parts connect or integrate with 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 according to recognized specifications and standards, commonly used and compatible with various products or systems.

IOT
Internet of Things or internet of objects; This function corresponds to the fact of being able to connect your product to the internet in order to obtain additional remote control and/or regulation functionalities.

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

Non usage
It corresponds to a non-operating state of the device.

O.S
Operating System, or operating system, is a set of programs that direct the use of a computer's resources by application software.

“General public” tools
Common tools, for general use, available to the general public in traditional distribution and as specified in the EN 45554 standard tools list: screwdriver (slotted head screw, cruciform, 6 internal lobes, wrench (hexagon socket screw, mixed), pliers (universal, half-round nose, diagonal cutting, power strip, vice, for stripping and crimping terminals), pry bar, tweezers, hammer with steel head, utility knife (cutting pliers with retractable blade), multimeter, voltage tester , soldering iron, glue gun, magnifying glass.

“Experienced Audience” tools
Tools requiring skills to use and whose cost can represent a barrier (torque wrench, soldering iron, etc.).

“Professional” tools
Tools requiring specific knowledge or conditions of use and whose acquisition cost represents an investment.

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

External source parts
Parts external to the manufacturer's production body, coming from an identified supplier.

Unit cost price “PRU” of a product/part
Understood as the sum of the price of the parts making up a product/components of a part.

“Great utility” product
A very frequently used product which, in the event of a breakdown, causes a significant disruption in day-to-day management: refrigerator, washing machine, boiler/water heater, telephone, computer, hob, etc.

Disassembly depth
Corresponds to the sum of the steps allowing individual access to each part and detaching it from the equipment, with a view to its replacement.

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

PSR
“Product Specific Requirement” corresponds to the criterion specifications applicable to the types of equipment specified within the scope of the framework.

Serialization
Practice by which the producer limits the use of spare parts to only original parts that he approves, in particular by software means.
Example: associate the serial numbers of the components of a product with the overall serial number of the product.

Subset
Set of connected components inseparable from each other which form a block and provide a function. The subassembly can be separated from the product.
Example: Motor and welded electronic card

Disruptive technology
Technology whose operation brings an innovation or a major technological advance compared to previous ones and whose reliability has not yet been fully proven over time.

IX. THANKS

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