

# Ecodesign and energy labelling

## Supplier guideline



## Smartphones, other mobile phones, cordless phones and slate tablets

*Smartphones, other mobile phones, cordless phones and slate tablets are subject to ecodesign requirements, while (only) smartphones and slate tablets are subject to energy labelling requirements. The requirements apply to all products placed on the EU/EEA market.*

### Ecodesign and energy label

The EU sets ecodesign and energy labelling requirements for energy-related products to promote energy efficiency and reduce energy consumption. Over the past 25 years, an increasing number of products have become subject to such requirements, and from the 20<sup>th</sup> of June 2025, smartphones, other mobile phones, cordless phones and slate tablets (in this guideline named "tablets") are also covered by some of these requirements.

*This guidance will help you gain a quick overview of the new requirements. The complete set of requirements is described in the regulations:*

- **The Ecodesign regulation: (EU) 2023/1670**
  - Sets minimum energy and resource efficiency requirements, such as battery endurance, scratch, water and drop resistance, reparability, recyclability, system updates, etc., and information requirements.
- **The energy labelling regulation: (EU) 2023/1669**
  - Specifies tools to guide consumers to more energy-efficient and durable products. This includes the energy label, the product information sheet, information on the [EPREL](#) database, etc.
  - Encourages manufacturers to develop new, more energy-efficient and durable products.

### Which products are in scope?

Ecodesign requirements apply to smartphones, other mobile phones, cordless phones and tablets, whereas energy labelling requirements apply only to smartphones and tablets.

*Products out of scope:*

- Smartphones and tablets with a flexible main display which the user can unroll and roll up partly or fully (so-called rollable smartphones).
- Smartphones for high security communication.
- Mobile phones designed to be worn on the wrist (so-called smart watches or wearable mobile phones).

### EPREL

EPREL stands for European Product Registry for Energy Labelling and is a database for all products with an energy label. All smartphones and tablets, for which units of these are placed on the market after the 20<sup>th</sup> of June 2025, must be registered in [EPREL](#).

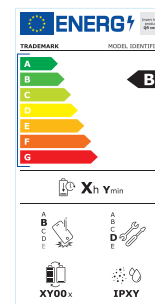
### Ecodesign requirements *in brief*

*The ecodesign regulation sets requirements for energy and resource efficiency, as well as for information. These include requirements related to:*

- Availability of a defined range of spare parts and repair/maintenance instructions with specified content for both professional repairers and end-users.
- Maximum delivery time and indicative price of spare parts.
- Ease of disassembly into components and materials.
- Product durability in relation to drops, screen scratches, and exposure to dust and water.
- Operating system upgrades, data deletion, transfer of functionalities after use, and a provision ensuring that software updates must not degrade product performance to the point where the product no longer complies with applicable legislation.
- Provision of the technical documentation.
- Information for end users on a free-access website on e.g. content of critical raw materials, battery endurance, etc.

### Energy labelling requirements *in brief*

The energy labelling regulation requires that smartphones and tablets are supplied with a printed energy label, and that specific information is provided in a product information sheet. Smartphones and tablets will have to display information on their energy efficiency, battery longevity, reparability, protection from dust and water and resistance to accidental drops.



(EU) regulation 2023/1670

## Which requirements will apply?

The requirements concern resource efficiency and information.

## Spare parts requirements

### Minimum requirements for mandatory spare parts

From one month after the date of placement on the market until at least seven years after the date of end of placement on the market, at least the following spare parts, including required fasteners if not reusable, shall be available to professional repairers and end users:

**Table 1: Minimum requirements for mandatory spareparts**

| Spare parts (mandatory)                                                                                                                 | Smartphones, tablets and other mobile phones | Cordless phones |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------|
| Battery or batteries (only to professional repairers)                                                                                   | ■                                            | ■               |
| Battery compartment cover                                                                                                               | —                                            | ■               |
| Back cover or back cover assembly, if to be fully removed for replacement of the battery                                                | ■                                            | —               |
| Protective foil for foldable displays                                                                                                   | ■                                            | —               |
| Display assembly                                                                                                                        | ■                                            | —               |
| Charger, unless the device complies with article 3 (4) of <a href="#">Directive 2014/53/EU</a>                                          | ■                                            | —               |
| SIM tray and memory card tray, if there is an external slot for a SIM tray or memory card tray                                          | ■                                            | —               |
| Charger unless the base-station is equipped with the USB Type-C receptacle, which should remain accessible and operational at all times | —                                            | ■               |
| Mechanical display folding mechanism                                                                                                    | —                                            | ■               |
| Charging cradle                                                                                                                         | —                                            | ■               |

### Minimum requirements for spare parts, when present

If the following parts are present in a product, the same requirements for them apply as above, but only for availability to professional repairers:

**Table 2: Minimum requirements for spare parts**

| Spare parts (when present)                | Smartphones, tablets and other mobile phones | Cordless phones |
|-------------------------------------------|----------------------------------------------|-----------------|
| Front- and/or rear-facing camera assembly | ■                                            | —               |
| External audio connector(s)               | ■                                            | ■               |
| External charging port(s)                 | ■                                            | ■               |
| Mechanical button(s)                      | ■                                            | ■               |
| Main microphone(s)                        | ■                                            | ■               |
| Speaker(s)                                | ■                                            | ■               |
| Hinge assembly                            | ■                                            | —               |
| Mechanical display folding mechanism      | ■                                            | —               |
| Display assembly                          | —                                            | ■               |

Please note that a spare part must not be a component made up of multiple spare parts. However, there are a few exceptions (please find more information in [Annex II](#)).

### Fastener

‘Fastener’ means a hardware device or substance that mechanically, magnetically or by other means connects or fixes two or more objects, parts or pieces. Find more information in [Annex I](#) of the regulation.

### Batteries

can be made available as a spare part only to professional repairers (i.e. not to professional repairers and end users):

- After 500 full charge cycles, the battery has, in a fully charged state, a remaining capacity of at least 83 % of the rated capacity.
- The battery endurance in cycles: After 1.000 full charge cycles, the battery has, in a fully charged state, a remaining capacity of at least 80 % of the rated capacity.
- The device meets:
  - IP67 rating (mobile phones and smartphones),
  - IP42 rating (tablets).

### Free access website

It is your responsibility to ensure the availability of a freely accessible website containing the following information:

- List of spare parts.
- Procedure for ordering spare parts.
- Indicative pre-tax prices at least in euro for spare parts, fasteners and tools.

### Access to repair and maintenance information

No later than one month after the product has been placed on the market, you must provide professional repairers with access to repair and maintenance information.

You may choose to do this via a freely accessible website, or by a website requiring authentication of the professional repairer.

For the latter, the following requirements do apply:

- Professional repairers can register on the website to request access to the information.
- Before providing the information, you have the right to require that the professional repairer has:
  - The technical competence to do the repair;
  - Liability insurance.
- No later than five working days after receiving a request, you must either reject or accept it. A rejection must include a clear justification.
- Registration itself must be free of charge, but you are entitled to charge reasonable and proportionate fees for access to the information.
- If you accept the request, you must provide access to the information no later than one working day afterwards – including for equivalent models or models in the same product family.

The information must be sufficiently detailed to enable the replacement of spare parts. Refer to [Annex II](#) of the regulation for the complete list of information that must be provided.

The information must be made available for seven years after the product has been taken off the market.

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## Product design for repair and reuse

### Maximum delivery time of spare parts

You shall ensure:

- In the first five years of mandatory spare parts availability, the spare parts must be delivered no later than five working days after receipt of order.
- During the **final two** years before the spare parts are no longer made available, they must be delivered within ten working days after receipt of the order.

### Disassembly requirements

You shall ensure that the process for replacement of the display assembly and **the mandatory spare parts** (please see page 2) (except batteries) meet the following criteria:

- Fasteners shall be removable, resupplied or reusable.
- The process for replacement shall be feasible with no tool, a tool or set of tools that is supplied with the product or spare part, or basic tools.
- The process for replacement shall be able to be carried out:
  - In a use environment (see definition [Annex I](#)).
  - By a layman (see definition [Annex I](#)).

**For the spare parts – when present** (please see page 2) (except cordless phones):

- Fasteners shall be removable, resupplied or reusable.
- The process for replacement shall be feasible in at least one of the following ways:
  - With no tool, a tool or set of tools that is supplied with the product or spare part, or basic tools.
  - With commercially available tools.
- The process for replacement shall, as a minimum, be able to be carried out:
  - In a workshop environment (see definition [Annex I](#)).
  - By a generalist (see definition [Annex I](#)).

### Replacement of batteries

The process for battery replacement must meet the following criteria:

- Fasteners shall be resupplied or reusable.

- The process for replacement shall be feasible with no tool, a tool or set of tools that is supplied with the product or spare part, or basic tools.

The process for replacement shall be able to be carried out for *smartphones, tablets and other mobile phones*:

- In a use environment (see definition [Annex I](#)).
- By a layman (see definition [Annex I](#)).

for *cordless telephones*:

- In a workshop environment (see definition [Annex I](#)).
- By a generalist (see definition [Annex I](#)).

Only regards *smartphones, tablets and other mobile phones*.

As an alternative to the above described process, ensure that:

- Follow the procedure for mandatory spare parts.
- After 500 full charge cycles the battery must, in addition, have in a fully charged state, a remaining capacity of at least 83 % of the rated capacity.
- The battery endurance in cycles: After 1 000 full charge cycles the battery must, in addition, have in a fully charged state, a remaining capacity of at least 80 % of the rated capacity.
- The device meets IP42 rating (goes only for tablets).
- The device is at least dust tight and protected against immersion in water up to one meter depth for a minimum of 30 minutes. (goes only for *smartphones and other mobile phones*)

#### Definition of Basic tools according to Annex I:

*Basic tools means a screwdriver for slotted heads, a screwdriver for cross recess screws, a screwdriver for hexalobular recess heads, a hexagon socket key, a combination wrench, combination pliers, combination pliers for wire stripping and terminal crimping, half round nose pliers, diagonal cutters, multitrip pliers, locking pliers, a prying lever, tweezers, magnifying glass, a spudger and a pick.*

## Replacement of serialised parts (applies only to smartphones and tablets)

It is your responsibility to meet the following requirements for the replacement of serialised parts:

- Provide nondiscriminatory access for professional repairers (all spare parts) and end-users (mandatory spare parts) to any software tools, firmware or similar auxiliary means needed to ensure the full functionality of those spare parts and of the device in which such spare parts are installed during and after the replacement.
- Provide, on a free access website a description of the procedure for the notification and authorisation of the intended replacement of serialised parts by the owner of the device. The procedure shall allow for remotely providing the notification and authorisation.
- Before providing access to the software tools, firmware or similar auxiliary means you may only require to receive a notification and authorisation of the intended part replacement by the owner of the device or by a professional repairer with the explicit written consent of the owner.
- Provide access to the software tools, firmware or similar auxiliary means within three working days after having received the request and, where applicable, the notification and authorisation referred hereto.
- You may restrict access to software tools, firmware, or similar aids to those professional repairers to whom you have previously granted access to repair and maintenance information for spare parts.

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## Requirements for preparation for reuse

As a supplier it is your responsibility to ensure that the following requirements are met

### *Smartphones and tablets*

- Encrypt by default, using a random encryption key, the user data stored in the internal storage of the device.
- Include a software function, that resets the device to its factory settings and erases securely by default the encryption key and generates a new one.
- Record the following data from the battery management system in the system settings or another location accessible for end-users:
  - Date of manufacturing of the battery.
  - Date of first use of the battery after the set-up of the device by the first user.
  - Number of full charge/discharge cycles (reference: rated capacity).
  - Measured state of health (remaining full charge capacity relative to the rated capacity in %)

### *Other mobile phones and cordless telephones*

- include a software function that resets the device to its factory settings and erases securely by default all personal information including but not limited to address book, text messages, pictures, videos, settings and call history.

## Requirements regarding design for reliability

### *Only smartphones, tablets and other mobile phones*

#### *Resistance to accidental drops*

(only smartphones and other mobile phones)

- The devices must pass 45 falls without any protective foil or separate protective cover without loss of functionality according to the test procedure set out in [Annex III](#).
- Foldable smartphones designed to be used with a protective foil on the foldable display shall pass 35 falls in the un-extended state and 15 falls in the extended state.

#### *Scratch resistance*

The screen of the device must pass the hardness level 4 on the Mohs hardness scale, except for foldable smartphones designed to be used with a protective foil.

#### *Protection from dust and water*

**Smartphones and other mobile phones** must be protected against the ingress of solid foreign objects of size bigger than 1 millimeter and splashing of water.

**Tablets** must be protected against accidental spills of water.

#### *Battery endurance in cycles*

Smartphones and tablets must achieve at least 800 charging cycles at 80 % remaining capacity, under conditions where the charging rate is limited by the battery management system (not by the power delivery capabilities of the power supply).

### *Battery management*

The following features must be provided for the user

#### ■ **Optional charging**

This feature terminates the charging process automatically, when the battery is charged to 80 % of its full capacity. As a supplier you may enable the device to periodically fully charge the battery for the purpose of maintaining accurate battery state of charge estimates. The user shall be informed automatically when charging the device for the first time or during the installation process, that the life span of the battery can be extended if the feature is selected and the battery is regularly charged only to 80 % of its full capacity.

#### ■ **Power management**

By default once the battery is fully charged there is no further charging power supplied unless the charge level drops below 95 % of the maximum battery capacity.

### *Operating system updates*

An update of the operating system may include a security update, a corrective update, and a feature update.

There are several requirements regarding operating system updates, including, for example, that updates must be provided free of charge for at least five years after a product is no longer placed on the market.

You find all the requirements for the operating system in [Annex II](#). Note that there are specific requirements for smartphones and tablets.

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## Marking of plastic components

Plastic components heavier than 50 g shall be legibly marked by specifying the type of polymer with the appropriate standard symbols or abbreviated terms set between the punctuation marks ‘>’ and ‘<’ as specified in available standards. However, certain plastic components are exempt from the marking requirements. You find more information about this in [Annex II](#).

## Recyclability requirements

The dismantling information needed to access the components referred to in Annex VII, point 1, of [Directive 2012/19/EU](#) must be available on a free access website, including information about the sequence of dismantling steps, tools and/or technologies. This information shall be available until at least 15 years after the placing on the market of the last unit of a product model.

## Information requirements

As a supplier, you must provide the following information in the technical documentation and on a free access website. For several rare materials relevant for recycling, you need to specify the range of content as shown in the table below.

## Information about data encryption and wireless charging

As a supplier of smartphones or tablets, you must ensure that:

- Information that data encryption is enabled by default is displayed to the user in the course of configuring a new device, including an explanation that this eases data erasure through factory reset.
- If wireless charging is selected, a message notifying the user that wireless charging will likely increase the energy use in the charging of the battery.

## Information if the packaging does not include a charger

As a supplier of mobile phones, smartphones, cordless phones or tablets, you must ensure that the user manual includes the following information:

*“For environmental reasons this package does not include a charger. This device can be powered with most USB power adapters and a cable with USB Type-C plug.”*

## Resource efficiency requirements

Only for cordless phones there are specific power consumption requirements regarding the base station and the charging cradle:

- Base station:  
The networked standby power consumption  $P_n$  shall not exceed 1 W (regardless of whether a handset is placed on the base station or not)
- Charging cradle without base station functionality:  
The standby power consumption  $P_n$  shall not exceed 0,6 W with the handset placed on the charger, and 0,3 W without handset.

**Table 3: Overview on information requirements**

| Information                                                                     | Mobile phones                                                                                                                      | Smartphones                       | Tablets                         | Cordless phones                 |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| Compatibility with removable memory cards, if any                               | Must be provided.                                                                                                                  |                                   |                                 |                                 |
| The indicative weight range of:                                                 |                                                                                                                                    |                                   |                                 |                                 |
| Cobalt in the battery, weight range:                                            | < 2 g / 2-5 g / > 5 g                                                                                                              | < 2 g / 2-10 g / > 10 g.          | < 10 g / 10-20 g / > 20 g       | < 0,5 g / 0,5-3 g / > 3 g       |
| Tantalum in capacitors, weight range:                                           | < 0,05 g / 0,05-0,2 g / > 0,2 g                                                                                                    | < 0,01 g / 0,01-0,1 g / > 0,1 g   |                                 | < 0,01 g / 0,01-0,2 g / > 0,2 g |
| Neodymium in loud speakers, vibration motors, and other magnets, weight range:  | < 0,05 g / 0,05-0,2 g / > 0,2 g                                                                                                    |                                   | < 0,2 g / 0,2-1 g / > 1 g       | < 0,01 g / 0,01-0,5 g / > 0,5 g |
| Gold in all components: weight range                                            | < 0,02 g / 0,02-0,1 g / > 0,1 g                                                                                                    | < 0,02 g / 0,02-0,05 g / > 0,05 g | < 0,02 g / 0,02-0,1 g / > 0,1 g |                                 |
| The indicative value of the recyclability rate R <sub>yc</sub>                  | Must be provided.                                                                                                                  |                                   |                                 |                                 |
| The indicative percentage of recycled content for the product or a part thereof | Must be provided, where available.<br>If not available, the recycled content should be indicated as “not known” or “not available” |                                   |                                 |                                 |
| Ingress protection rating                                                       | Must be provided                                                                                                                   |                                   |                                 | Not relevant                    |
| Minimum battery endurance in cycles in number of cycles                         | Must be provided                                                                                                                   |                                   |                                 | Not relevant                    |
| In case of foldable devices                                                     | It must be indicated that<br>‘This device did not undergo a scratch resistance test’                                               |                                   |                                 | Not relevant                    |

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## Further information requirements

As a supplier of mobile phones, smartphones or tablets, you must provide a user manual to consumers on a free access website that includes the information listed in the table below.

**Table 4: Information to be provided in user manual**

| Smartphones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tablets | Mobile phones  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------|
| How to access on the device information from the battery management system on: <ul style="list-style-type: none"> <li>■ Date of manufacturing of the battery.</li> <li>■ Date of first use of the battery after the set-up of the device by the first user.</li> <li>■ Number of full charge/discharge cycles (reference: rated capacity).</li> <li>■ Measured state of health (remaining full charge capacity relative to the rated capacity in %).</li> </ul>                                                                                                                                                   |         | No information |
| Instructions for battery maintenance, including the following: <ul style="list-style-type: none"> <li>■ Impacts on battery lifetime related to exposure of the device to elevated temperatures, suboptimal charging patterns, fast charging and other known adverse factors.</li> <li>■ Effects of switching off radio connections, such as WiFi, Bluetooth, on power consumption.</li> <li>■ Information about whether the device supports other features, which extend battery lifetime, such as smart charging and about how these features are activated or under which conditions they work best.</li> </ul> |         |                |

## Measurements, calculations and verification procedure

When testing your device, it is important to apply the provisions of Annex III on measurements and calculations, as well as [Annex IIIa](#).

For your information, [Annex IV](#) sets out the verification procedure used by the market surveillance authorities. Please note that the specified tolerances apply only to the authorities' verification and not to your own test results.

## Circumvention

A product must not alter its behaviour or characteristics when tested by the authorities. Likewise, it is not permitted to include test instructions intended to produce a more favourable result for the product.

A product must not change its behaviour or characteristics shortly after being put into use leading to a deterioration of the declared values of the product.

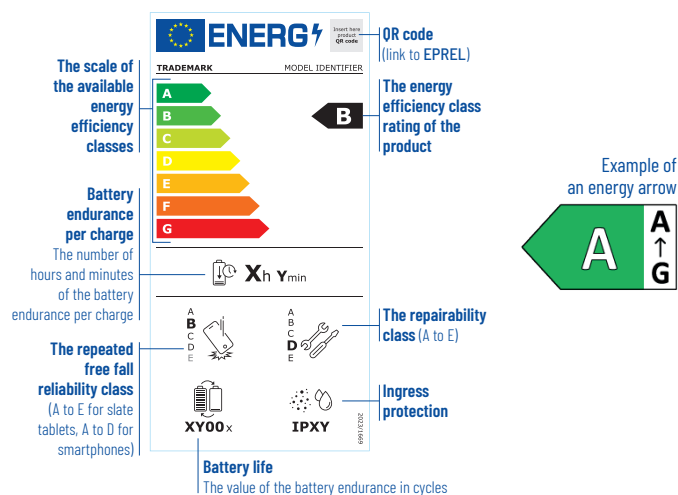
(EU) regulation 2023/1669

## The energy labelling requirements

The energy labelling requirements only apply to smartphones and tablets.

### As a supplier you must ensure that:

- Each unit is supplied with a printed energy label.
- If requested by the dealer, the product information sheet (PIS) must be made available in printed form.
- An electronic energy label and an electronic PIS are made available to the dealers.
- The values of the parameters of the PIS and the content of the technical documentation are entered into EPREL.
- Any visual advertisement or technical sales/promotional material for each model contains the energy efficiency class and the range of energy efficiency classes available on the energy label shown by an arrow (so-called energy arrow)



## Design and content of the energy label

- The printed energy label must be at least 68 mm wide and 136 mm high.
- If the label is printed in a larger format, its content must meet the above specifications proportionally.
- It is permitted, but not mandatory, to print the energy label on the packaging.
- If the packaging is too small to accommodate an energy label sized 68 mm in width and 136 mm in height, the energy label may be printed at a reduced scale, provided it remains proportional and measures at least 70% of the above-stated dimensions.
- This means a minimum of 47.6 mm in width and 95.2 mm in height. It is also important that the QR code remains readable by a standard QR reader, like readers used on smartphones.
- The energy label can be generated automatically when the product model is registered in EPREL.

Read more about registration in EPREL on the [CS website](#).

## Energy efficiency classes and battery durability

The energy efficiency class of a smartphone or tablet is determined based on the energy efficiency index (EEI).

**Table 5: Energy efficiency index (EEI) and the corresponding energy efficiency classes**

| Energy efficiency class    | Smartphones<br>Energy efficiency index (EEI) | Tablets<br>Energy efficiency index (EEI) |
|----------------------------|----------------------------------------------|------------------------------------------|
| <b>A</b> (most efficient)  | EEI > 2,70                                   | EEI > 7,90                               |
| <b>B</b>                   | 2,30 < EEI ≤ 2,70                            | 6,32 < EEI ≤ 7,90                        |
| <b>C</b>                   | 1,95 < EEI ≤ 2,30                            | 5,06 < EEI ≤ 6,32                        |
| <b>D</b>                   | 1,66 < EEI ≤ 1,95                            | 4,04 < EEI ≤ 5,06                        |
| <b>E</b>                   | 1,41 < EEI ≤ 1,66                            | 3,24 < EEI ≤ 4,04                        |
| <b>F</b>                   | 1,20 < EEI ≤ 1,41                            | 2,59 < EEI ≤ 3,24                        |
| <b>G</b> (least efficient) | EEI ≤ 1,20                                   | EEI ≤ 2,59                               |

The battery endurance ( $END_{device}$ ) equals the run-time of the test in hours using the specified test sequence and, rounded to two decimal places.

The energy efficiency index (EEI) of a smartphone or slate tablet is calculated using the following equation and rounded to two decimal places:

$$EEI = \frac{END_{device}}{U_{nom} \times C_{rated}} \times 1.000$$

Where:

- EEI is the Energy Efficiency Index in 1/W,
- $U_{nom}$  is the nominal voltage in V,
- $C_{rated}$  is the rated battery capacity in mAh.

The EEI shall be calculated with the operating system version installed on the product model at the date of placement on the market.

Detailed information on measurement and calculation methods can be found in [Annex IV](#)., and, until a harmonized standard is available:

- at <https://ec.europa.eu/docsroom/documents/50214>, referenced in the same Regulation;
- considering the standards 'samples' (video, audio, etc.) available on the Commission website: [https://circabc.europa.eu/ui/group/418195ae-4919-45fa-a959-3b695c9aab28/library/01c3b805-a11f-4805-a2c6-99ea88936a5e?p=1&n=10&sort=modified\\_DESC](https://circabc.europa.eu/ui/group/418195ae-4919-45fa-a959-3b695c9aab28/library/01c3b805-a11f-4805-a2c6-99ea88936a5e?p=1&n=10&sort=modified_DESC)

(EU) regulation 2023/1669

Table 6: Repeated free fall reliability classes

| Repeated Free Fall Reliability Class | FALLS WITHOUT DEFECT    |                     |                                                                                          |                                                                                          |
|--------------------------------------|-------------------------|---------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|                                      | Non-foldable smartphone | Non-foldable tablet | Foldable smartphone*                                                                     | Foldable tablet*                                                                         |
| <b>A</b><br>(most robust)            | $n \geq 270$            | $n \geq 208$        | $n \geq 210$ (in un-extended state) and $n \geq 45$ (in fully extended state)            | $n \geq 182$ (in un-extended state) and $n \geq 20$ (in fully extended state)            |
| <b>B</b>                             | $180 \leq n < 270$      | $156 \leq n < 208$  | $140 \leq n < 210$ (in un-extended state) and $35 \leq n < 45$ (in fully extended state) | $130 \leq n < 182$ (in un-extended state) and $15 \leq n < 20$ (in fully extended state) |
| <b>C</b>                             | $90 \leq n < 180$       | $104 \leq n < 156$  | $70 \leq n < 140$ (in un-extended state) and $25 \leq n < 35$ (in fully extended state)  | $78 \leq n < 130$ (in un-extended state) and $10 \leq n < 15$ (in fully extended state)  |
| <b>D</b>                             | $45 \leq n < 90$        | $52 \leq n < 104$   | $35 \leq n < 70$ (in un-extended state) and $15 \leq n < 25$ (in fully extended state)   | $52 \leq n < 78$ (in un-extended state) and $5 \leq n < 10$ (in fully extended state)    |
| <b>E</b><br>(least robust)           | -                       | $n < 52$            | -                                                                                        | $n < 52$ (in un-extended state) and $n < 5$ (in fully extended state)                    |

\* For foldable products, both requirements for the respective energy label class must be met

## Measurement of the battery endurance in cycles

Batteries shall be tested for battery endurance in cycles until the battery has, in a fully charged state, a remaining capacity of at least 80 % of the rated capacity. The battery shall be tested according to the default charging algorithms implemented by the manufacturer.

The resulting number of cycles shall be rounded down to full hundreds. The battery endurance shall be calculated with the operating system version installed on the product model at the date of placement on the market.

- $S_{DD}$  is the 'Disassembly Depth' score.
- $S_F$  is the 'Fasteners (type)' score.
- $S_T$  is the 'Tools (type)' score.
- $S_{SP}$  is the 'Spare Parts' score.
- $S_{SU}$  is the 'Software Updates (duration)' score.
- $S_{RI}$  is the 'Repair Information' score.

The same scoring methodology applies to both smartphones and tablets. The Repairability Index (R) shall be calculated as follows:

$$R = (S_{DD} \times 0,25) + (S_F \times 0,15) + (S_T \times 0,15) + (S_{SP} \times 0,15) + (S_{SU} \times 0,15) + (S_{RI} \times 0,15)$$

Detailed information on the calculation of the score for each parameter can be found in [Annex IV, point 5](#).

## Repeated free fall reliability classes

The repeated free fall reliability class of a model is determined on the basis of the number of falls without defect as shown in the table above.

Detailed information on measurement and calculation methods can be found in [Annex IV, point 4](#).

## The repairability class

The repairability class of a model is determined on the basis of the repairability index described in [Annex IV, point 5](#) of the regulation.

Table 7: Repairability index for smartphones and tablets

| Repairability class         | Repairability index (R) |
|-----------------------------|-------------------------|
| <b>A</b> (most repairable)  | $R \geq 4,00$           |
| <b>B</b>                    | $4,00 > R \geq 3,35$    |
| <b>C</b>                    | $3,35 > R \geq 2,55$    |
| <b>D</b>                    | $2,55 > R \geq 1,75$    |
| <b>E</b> (least repairable) | $1,75 > R \geq 1,00$    |

The repairability index is an aggregated and normalised score derived from six scoring parameters:

## Measurement of the ingress protection

Ingress protection against particle and moisture ingress are stated as an IP code, corresponding to the levels listed in [Annex IV, table 5](#). Tests shall be performed without protective cover. The scale involves 8 levels including dust tight and protected against immersion in water up to 1 meter depth: IP67; (IEC 60529:1989/AMD2:2013/COR1:2019)

Table 8: Ingress protection rating levels

| Rating level | Ingress of solid foreign objects                 | Ingress of water with harmful effects          |
|--------------|--------------------------------------------------|------------------------------------------------|
|              | Object size                                      | Protection against                             |
| <b>0</b>     | no protection                                    | no protection                                  |
| <b>1</b>     | $\geq 50$ mm                                     | vertical water dripping                        |
| <b>2</b>     | protected from touch by fingers and $\geq 12$ mm | water spray less than 15 degrees from vertical |
| <b>3</b>     | $\geq 2,5$ mm                                    | water spray less than 60 degrees from vertical |
| <b>4</b>     | $\geq 1$ mm                                      | splashing of water                             |
| <b>5</b>     | dust-protected                                   | jetting of water                               |
| <b>6</b>     | dust-tight                                       | powerful jetting of water                      |
| <b>7</b>     | n.a.                                             | temporary immersion, 1 m depth                 |
| <b>8</b>     | n.a.                                             | continuous immersion, 1 m or more depth        |

(EU) regulation 2023/1669

## The product information sheet (PIS)

A product information sheet (PIS) is a collection of essential information about the product and must include the details specified in [Annex V, table 8](#).

The PIS is generated when the product is registered in [EPREL](#).

## User manual and documentation

The user manual and any other documentation provided with the product must clearly reference the model in the product database. This can be done by including either a link to a web address, a QR code or the registration number.

*This guidance does not contain all information on measurement and calculation methods related to smartphones and tablets. The complete set of requirements can be found in regulation (EU) 2023/1669, Annex IV.*

## Additional guidance for suppliers

The Compliance Services website provides further information and general guidance for suppliers. Among other resources, you will find:

- A list of general obligations for suppliers.
- Frequently asked questions from manufacturers and importers.
- Information to be delivered to dealers.

The Compliance Services project regularly publishes a newsletter on ecodesign and energy labelling of products. You can subscribe to the newsletter [here](#).

## Key dates regarding implementation of ecodesign and labelling requirements.

- The new ecodesign requirements for smartphones, other mobile phones than smartphones, tablets and cordless phones, as well as the labelling requirements for smartphones and tablets will apply from the 20<sup>th</sup> of June 2025. Product units placed on the market after the 20<sup>th</sup> of June 2025 must comply with the ecodesign and energy labelling requirements.
- For product units placed on the market before the 20<sup>th</sup> of June 2025 no ecodesign or energy labelling requirements apply.
- The supplier must enter the information from the product data sheet and the following parts of the technical documentation into EPREL:
  - Date of manufacturing of the battery.
  - Date of first use of the battery after the set-up of the device by the first user.
  - Number of full charge/discharge cycles (reference: rated capacity).

*Placed on the market* is a legal term used in product and energy legislation. Learn what the term means by visiting the [EU "Blue Guide"](#).

(EU) regulation 2023/1669

## Preparation for market surveillance – Documentation is important!

When placing a product on the market, proper documentation is crucial to demonstrate compliance with ecodesign and energy labelling requirements. This includes the CE marking, the EU declaration of conformity, and a complete set of technical documentation.

### CE marking and EU declaration of conformity

As a supplier, it is your responsibility to ensure that your product is correctly CE marked before placing it on the market.

You must also prepare an EU declaration of conformity (also known as a DoC), which states that your product complies with all applicable requirements.

The declaration must explicitly reference the relevant ecodesign and energy labelling regulations.

### Technical documentation

As a supplier, you are required to keep technical documentation that demonstrates the product's compliance with ecodesign and energy labelling requirements.

The technical documentation must include, among other things:

- A general description of the model, sufficient to clearly and easily identify it.
- References to the harmonised standards applied, or any other measurement standards used.
- A description of the disassembly steps for each priority part as listed in [Annex IV, point 5](#), including any tools and fasteners required at each stage, if applicable.
- Specific precautions that must be taken when assembling, installing, maintaining or testing the model.
- The values of the technical parameters as specified in [Annex VI, table 9](#). These values are regarded as the declared values for the purpose of the verification procedure in [Annex IX](#).
- The details and results of the calculations carried out, as described in [Annex IV](#).
- Measurement or testing conditions, if not sufficiently covered by the applicable standards – this includes any algorithms used for battery charging under standard charging procedures, if relevant.
- Parameters for the initial test procedure for the energy efficiency index, if not sufficiently described under the settings in [Annex IV, point 1](#), and [Annex IV](#).
- A list of equivalent models, i.e. models with same technical characteristics and specifications.

The technical documentation must be available before the product is placed on the market.

To comply with energy labelling requirements, the documentation must be kept for five years from the date the last unit was placed on the market.

To comply with ecodesign requirements, the documentation must be kept for ten years.

## Visual advertisements, technical promotional material and in distance selling, except for online sales

In visual advertising, sales material and other material, the energy efficiency class and the range of available energy efficiency classes for the relevant product must be shown.

The arrow must point to the left.



The graphic files can be downloaded here: <https://circabc.europa.eu/ui/group/7f4824e3-f72c-4126-b6b8-842a4443a4ca/library/17bc1987-e20e-49d5-a847-f7e28070c23b/details>

## Market surveillance

Your national market surveillance authority (MSA) carries out regular inspections to verify compliance.

The authority may carry out surveillance in several ways, such as:

- Document inspections
- Product testing
- Inspection of information in user manual
- Inspection of information on websites

Improper or missing use of the energy label may result in enforcement measures like withdrawal from the market or a fine.

Please find more information about market surveillance [here](#).

# Compliance Services



At your disposal to help you properly implement the ecodesign and energy labelling legislation

## Contact

- Project coordinator: AEA – Austrian Energy Agency
- Web portal: [www.product-compliance-services.eu](http://www.product-compliance-services.eu)
- E-mail: [project@product-compliance-services.eu](mailto:project@product-compliance-services.eu)
- LinkedIn: [www.linkedin.com/company/product-compliance-services/](http://www.linkedin.com/company/product-compliance-services/)

[www.product-compliance-services.eu](http://www.product-compliance-services.eu)



This portal offers guidance and tools for suppliers, dealers, and installers. The focus is on new regulations from 2023 to 2027, especially for heating, air conditioning, PV products, smartphones, slate tablets, and white goods. More tools and information coming by 2025, depending on the finalisation of regulations. Product specific topics include detailed explanations of new and changed requirements and their timeline.

Topics of interest for suppliers include: Products in scope / Basic requirements / What to document / How to register in EPREL / Importing products / Placing your products on the market / Preparation for market surveillance, etc.

coordinated by

European organisations



AUSTRIAN ENERGY AGENCY



ASSOCIATION OF  
THE EUROPEAN HEATING  
INDUSTRY



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COALITION ON STANDARDS

National organisations



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l'environnement et de  
l'amélioration de l'énergie  
France



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Agência para a energia  
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