

## EN45554 – Where could it take us next?

# Never beyond repair

## How an EU standard drives product repairability

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## The genesis of EN45554, the general method for the assessment of the ability to repair, reuse and upgrade energy-related products

- Following the 2015 Circular Economy Action Plan, the European Commission asked European Standardization Organizations to develop standards on material efficiency that would establish future ecodesign requirements on, amongst others, durability, reparability and recyclability of products.
- CEN-CENELEC Joint Technical Committee 10 on Energy-related products - Material Efficiency Aspects for Ecodesign (CEN-CLC/JTC 10) drafted a series of eight standards containing generic principles to consider when addressing the material efficiency of energy-related products.
- The standard on repair, reuse and upgrade of energy-related products (EN 45554:2020) was finalised in 2020.
- Horizontal standard: it is supposed to be used as a source of inspiration or a checklist for product-specific regulation and standards, but will also help with the drafting of horizontal repairability requirements under the ESPR



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 45554**

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ICS 13.030.50

English Version

General methods for the assessment of the ability to repair,  
reuse and upgrade energy-related products

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## Horizontal requirements on repairability

Product/Measure	JRC ranking	Stakeholders' opinion	Market size (EU)	Estimated timeline for adoption
<b>Final products</b>				
Textiles/Apparel	1 <sup>st</sup>	+++	175 billion EUR (with footwear, 2021)	End 2026 or early 2027
Furniture	2 <sup>nd</sup>	++	140 billion EUR (2021)	2028
<u>Tyres</u>	3 <sup>rd</sup>	+++	45 billion EUR (2021)	2027
<b>Intermediate products</b>				
Steel	1 <sup>st</sup>	+++	152 billion EUR (2023)	Q4 2026
<u>Aluminium</u>	4 <sup>th</sup>	++	40 billion EUR (2019)	2027
<b>Horizontal requirements</b>				
Repairability (including scoring)	N/A	+++	N/A	2026
Recyclability and recycled content of Electric and Electronic Equipment	N/A	++	N/A	2028

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## Repairability criteria currently scored by EN45554

Criteria	A	B	C	D	E
Disassembly depth	Disassembly depth is the number of steps required to remove a part from a product				
Fasteners and connectors	Reusable	Removable	Neither removable nor reusable		
Tools	No tool, supplied tools or basic	Product specific tools	commercially available tools	Proprietary tools	Not feasible
Working environment	Use environment	Workshop	Production-equivalent		
Skill level	Layman	Generalist	Expert	Manufacturer or authorized expert	Not feasible
Diagnostic support and interfaces	Intuitive	Coded with reference table	Hardware / software interface	Proprietary	No interface
Availability of spare parts (target groups)	Public	Independent repairers	Manufacturer-authorized	Manufacturers	Not available
Availability of spare parts (time)	Long-term	Mid-term	Short-term	No information	

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## Repairability criteria currently scored by EN45554

Criteria	A	B	C	D	E
Types of information	Comprehensive	Basic	No information		
Availability of information	Public	Independent repairers	Manufacturer-authorized	Manufacturers	
Return options	Comprehensive	Basic	Not available		
Data management	Built-in or no data stored	On request	Not available		
Password and factory reset for reuse	Integrated	External	Service	No reset	

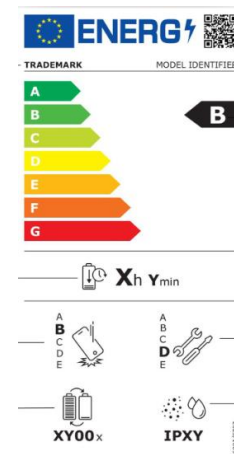
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## How is it used by the legislator?

- It can be used for a repair score, but also to decide on strict ecodesign requirements.
- For example, in the ecodesign and energy labelling regulation on smartphones, levels D (proprietary tools) and E (not possible with any tools) of the tools criteria are simply banned, and the repair score distinguishes between levels A (no tool, supplied tools or basic), B (Product-specific tools) and C (commercially available tools) with different levels of repair scoring
- This standard should also encourage manufacturers to make their products more repairable before the regulators force them to do so

(a) From 20 June 2025, manufacturers, importers or authorised representatives shall ensure that the process for replacement of the display assembly and of parts referred to in point 1(a), with the exception of the battery or batteries, meets the following criteria:

- (i) fasteners shall be removable, resupplied or reusable;
- (ii) 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 'Tools (type)' scores ( $T_i$ ) for each priority part  $i$  ( $T_{BAT}$ ,  $T_{DA}$ ,  $T_{BC}$ ,  $T_{FFC}$ ,  $T_{RFC}$ ,  $T_{EC}$ ,  $T_{BUT}$ ,  $T_{MIC}$ ,  $T_{SPK}$  and  $T_{FM}$ ) are assigned according to the complexity and availability of the tools needed for its replacement. Points ranging from 1 to 5 are assigned as follows:

- No tools = 5 pt;
- Basic tools = 4 pt.
- A set of tools that is supplied (or offered to be supplied at no additional cost) with the spare part = 3 pt.
- A set of tools that is supplied (or offered to be supplied at no additional cost) with the product = 2 pt.
- Commercially available tools = 1 pt.

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## Repairability criteria currently missing in EN45554 scoring system

- The scoring of fasteners does not address adhesive and captive fasteners
- Spare parts retailers, operators offering inspection and testing services, and operators offering training for installers, are not considered as target groups for the availability of spare parts and repair information.
- The keying/asymmetry of parts is not rewarded, even though it is considered a means to make electrical connections more foolproof and replacement operations faster.



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## Repairability criteria currently missing in EN45554 scoring system



- A parameter addressing parts serialisation and pairing is missing, even though tackled by the ecodesign regulation on smartphones, the battery regulation and the directive on the repair of goods
- The issue of parts bundling is not addressed
- The question of software and firmware updates is not sufficiently covered





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## Specific case of the price of spare parts

- In a recent white paper, ECOS and R2R Europe put forward a proposal for a horizontal ecodesign measure on the price of spare parts.
- Why should this be done? The price of spare parts is the main barrier to repair and should be addressed horizontally.
- The pre-tax price of spare parts that manufacturers are obliged to communicate (smartphone regulation) should not be indicative but constitute a binding threshold.
- Repairability scores should include the price of spare parts as a criterion, based on the French index
- Join us for a webinar on this topic



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## Call for feedback on EN45554

- The revision of EN45554 will be taken up at IEC level (IEC TC111), which will use the current version of EN45554 as a base
- Any feedback on whether you used this standard, and if it has been helpful, will be welcome
- We need help to know what should be added/amended to get closer to the state-of-the-art



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