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FEICA position on spare parts, repair methods and repair actors under ESPR horizontal repairability requirements

Executive summary

FEICA supports the development of horizontal repairability requirements under the Ecodesign for Sustainable Products Regulation (ESPR) that increases successful repairs and product lifetime extension. Adhesives and sealants are widely used in modern products as they contribute to the performance, longevity and durability of products in which they are applied. At the same time, they allow for repair by restoring functionality, replacing damaged components and extending product lifetimes. Future repairability requirements should therefore recognize their role both in product assemblies and in enabling repair.

FEICA recommendations for enabling effective, durable, and technology-neutral repairability requirements:

- **adhesives and adhesive** repair solutions are **recognized** within repair frameworks;
- spare-part requirements reflect **practical repair needs and the appropriate level** of repair intervention;
- the **range of tools** and methods recognized under repairability requirements is **expanded** to reflect those commonly used to repair adhesive-bonded assemblies;
- **distinctions between end-user and professional repairs** are based on technical realities, safety considerations and the successful restoration of product functionality.

Context

The European Union has placed increasing emphasis on repairability as a key element of its transition towards a circular economy. The ESPR and related initiatives seek to improve product longevity by facilitating repair, maintenance, refurbishment and reuse. These objectives are strongly supported by FEICA.

Adhesives and sealants play an important role in modern product design and are widely used across sectors such as consumer electronics, household appliances and light means of transport¹. By replacing or complementing traditional fastening systems, they can contribute to product performance, durability, resource efficiency and innovative design solutions. However, **discussions around repairability have often focused primarily on mechanical fastening systems**. As **repairability requirements** continue to evolve, they should **reflect the realities of modern product design**. Successful repair can be achieved through different joining technologies, including adhesive bonding. The role of adhesives on restoring product functionality safely and effectively is a key requirement of the circular economy. To ensure technology neutrality, repairability requirements

¹ This holds true also for vehicles, batteries or handheld devices, such as smart phones, although those products are not regulated under ESPR, but in product specific legislation.

should allow for the selection of the fixing technology best suited to the product and the repair operation, **rather than favouring a particular method.**

Spare parts

Spare parts are fundamental to enabling repair and keeping products in use for longer. The availability of spare parts is not only a question of stockholding, but also of granularity. Defining the appropriate level of granularity is essential to enable timely delivery and effective repair. While this remains true, **effective spare-part requirements should reflect the realities of modern product design and repair practices**, not only the availability of individual components.

In adhesive-bonded assemblies, **adhesives** frequently constitute an integral part of the product architecture. At the same time, they provide **repair solutions** capable of restoring functionality without requiring the replacement of the original component. Consequently, repairability requirements should acknowledge that **adhesive products can serve such dual function.**

Delivery time

The **availability of spare parts, including** that of **adhesives**, only contributes to repairability if those parts can be **supplied within a timeframe that makes repair an attractive alternative to replacement.** Research² consistently demonstrates that delivery time is a significant factor influencing repair decisions. Very long waiting periods reduce consumer willingness to repair and often encourage replacement instead. The Joint Research Center (JRC)³ has similarly identified delivery time as a key parameter for successful repairability frameworks.

Availability duration

The duration of spare-part availability is another important factor in ensuring that repair remains possible throughout a product's lifetime. Unlike many mechanical spare parts, **adhesives** may be **affected by storage conditions and shelf-life limitations.** Long-term storage under unsuitable conditions can influence product performance and reliability. As a result, maintaining large stocks of adhesive repair kits over extended periods may not always represent the most effective solution from either a technical or environmental perspective.

For this reason, the adhesives and sealants industry generally **favours a shorter spare-part availability duration for adhesive repair kits**, for **example two-three years**, as this helps ensure that the adhesive supplied for repair remains fit for purpose and performs as expected. Where repair support is required **beyond** such a period, a **re-order or on-demand supply approach may be more appropriate** than maintaining long-term stocks. Such an approach can help ensure that repair materials remain effective while continuing to support repairability and product lifetime extension.

Target groups and amounts of spare parts availability

The level of spare-part availability required to support repair should reflect the type of repair being performed and the level of intervention necessary to restore functionality. **Repairability does not necessarily require access to every individual component** within a product. In many cases, as also acknowledged by the JRC's ongoing work on horizontal repairability requirements⁴, **replacing larger modules, assemblies or functional units** may provide a **more practical, reliable and economically**

² Nataliia Roskladka, Anicia Jaegler, Giovanni Miragliotta, From "right to repair" to "willingness to repair": Exploring consumer's perspective to product lifecycle extension, Journal of Cleaner Production, Volume 432, 2023, <https://www.sciencedirect.com/science/article/pii/S0959652623038635?via%3Dihub>

³ European Commission, Joint Research Centre (JRC), Preparatory Study for the Setting of Horizontal Ecodesign Requirements on Repairability – Draft Version 2 for Consultation (2026), pp. 13 and 33–35.

⁴ European Commission, Joint Research Centre (JRC), Preparatory Study for the Setting of Horizontal Ecodesign Requirements on Repairability – Draft Version 2 for Consultation (2026), pp. 13–15 and 30–31.

viable means of restoring product functionality **than replacing highly granular individual components**.

This issue is equally relevant for adhesive technologies. Adhesives and sealants are used throughout products and can be found at nearly all disassembly levels, from the attachment of individual components to the bonding of larger modules and assemblies. As future repairability requirements evolve, **clarity regarding the expected level of repair intervention** will be **important** not only for product manufacturers, but also **for the adhesives and sealants industry**. Understanding at which level products are expected to be repaired **helps direct research and development efforts towards solutions that best support those repair objectives, including the development of innovative technologies** such as debonding-on-demand (DoD) adhesives.

Acceptable tools for repair

Existing repairability frameworks already recognize the importance of tools as a key element of repairability. The **JRC's** ongoing work on horizontal repairability requirements identifies the type of tools required for disassembly as an important repairability parameter and **proposes that repairs should be feasible using basic tools or commercially available tools**, depending on the intended repair actor, and following the line traced by the standard EN 45554. **However**, the toolsets commonly used in current repairability frameworks are **largely centered on conventional mechanical tools** and do not fully reflect the tools and methods required to repair adhesive-bonded assemblies. The **objective of repairability requirements** should be to ensure that **products can be repaired** safely and effectively **rather than limiting repair to a predefined set of traditional tools**.

Modern adhesive-bonded assemblies may require repair solutions that extend beyond conventional screwdrivers, pliers and other traditional hand tools. Depending on the adhesive technology and the application involved, repair operations may require the use of controlled heat sources, suitable chemical agents or other technologies capable of safely releasing and restoring bonded joints. **Repairability requirements should therefore recognize that commercially available thermal, chemical and irradiation-based debonding methods** – such as heat guns, specific solvents, ultraviolet (UV) technologies, infrared (IR) systems, induction technologies – **can be legitimate and necessary repair tools** when dealing with adhesive-bonded products.

At the same time, FEICA recognizes that certain repair methods may require specific guidance, training or protective measures. Where thermal, chemical or irradiation-based methods are necessary, **clear repair instructions and appropriate safety information should accompany repair procedures**, potentially in digital form or embedded in the upcoming Digital Product Passport, for both laymen and professional repairers. Such an approach enables safe repair without unnecessarily limiting available repair pathways.

Laymen vs professional repairers

An effective repair ecosystem must acknowledge that **different repair operations require different levels of expertise, equipment and technical knowledge**. Many simple repairs can be successfully performed by end-users, particularly where repair procedures are straightforward and the associated risks are limited. Other repairs, however, require a higher degree of technical competence, specialized tools or specific safety precautions⁵. This distinction is particularly relevant

⁵ As also acknowledged by the European Commission in the Commission Delegated Regulation on supplementing Regulation (EU) 2023/1542 of the European Parliament and of the Council as regards derogations for the removability and replaceability of portable batteries.

when repairs involve structural components, electrical systems or specialized joining technologies used for water- or dust-proofing a product.

For adhesive-bonded assemblies, the key consideration should not be whether repair is carried out by a layperson or a professional repairer as such, but **whether the repair can be performed successfully and safely using the appropriate information, tools and materials**.

Repair requirements should therefore **support informed and competent repair activities while recognising that different repair operations may require different levels of expertise**. The primary objective should remain the restoration of product functionality and the extension of product lifetime.

Finally, where professional repair is required, repairability requirements should support the **development of an accessible and cost-competitive network of trained and skilled repairers across the Single Market, including in remote or less accessible regions**. This would enable EU consumers to have their products repaired safely, efficiently and within a reasonable timeframe, thereby helping to prevent premature product discarding.

Conclusion

Adhesives and sealants should not be viewed as barriers to repair. They are important enablers of modern product design and can also play a significant role in extending product lifetimes through repair. Future horizontal repairability requirements should therefore recognize the contribution of adhesives both within original product assemblies and as repair-enabling solutions.

To achieve successful and durable repairs, future requirements should establish balanced spare-part obligations, recognize the specific characteristics of adhesive repair materials, permit commercially available thermal, chemical and irradiation-based debonding methods where necessary, and ensure that repair actors have access to the information and tools required to restore product functionality safely and effectively.

A technology-neutral approach focused on successful repair outcomes will maximize the environmental, economic and societal benefits of repair while preserving innovation in product design and manufacturing.

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About FEICA

FEICA is the Association of the European Adhesive & Sealant Industry. Adhesives and sealants (A&S) play a crucial role in many of the EU's strategic sectors and are essential enablers of countless everyday products. A&S enhance products' performance, durability and circularity. With the support of its members and national associations, FEICA voices the interests of the industry in Europe, where 85% of adhesive and sealant companies are SMEs. The association provides regulatory guidance, helps members navigate compliance requirements, and promotes sustainable practices. FEICA fosters collaboration with industry stakeholders to address shared challenges and to create a mutually beneficial economic and legislative environment.

FEICA is registered in the **EU Transparency Register** with ID no. **51642763262-89**

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