



Sustainable development

**The circular economy:
The role of adhesives and sealants**



Introduction

The European Commission is committed to transforming Europe's economy into a more sustainable one and enhancing the circular economy - "This **transition** towards a more circular economy is about **reshaping the market economy** and **improving our competitiveness.**" (VP J. Katainen – Dec. 2015).

The adhesive and sealant industry, represented by FEICA (The Association of the European Adhesive & Sealant Industry), supports the European Commission's objective of "closing the loop" of product lifecycles, bringing benefits for the environment, the economy and society.

FEICA's sustainability vision states:

"The adhesive and sealant industry is committed to enabling a growing population to live a better life and to use the planet's resources responsibly and efficiently."

FEICA recognises that a viable and sustainable future will depend on a more efficient, including circular, use of resources. The adhesive and sealant industry is willing to contribute to solutions to meet this challenge. Our industry launched its Sustainable Development Agenda in 2016 to ensure our members understand and support the circular economy developments over the coming years.

The concept of a circular economy

The Ellen MacArthur Foundation states that ***"a circular economy is restorative and regenerative by design, and aims to keep products, components, and materials at their highest utility and value at all times."***



The European Commission concluded in its Communication on Integrated Product Policy (COM (2003)302), that Life Cycle Assessments (LCA) provide the best framework currently available for assessing the environmental impacts of products.

The adhesive and sealant industry has adopted the LCA concept and considers circularity, including recycling, as the best practice approach for the end-of-life phase of products. However, the minimisation of the total environmental impact along the life cycle in the entire value chain should have priority over the end-of-life handling of products. In particular, energy and material savings, as well as longevity of products have a decisive impact on preferred end-of-life approaches.

Adhesives and sealants: a tradition of innovation for improved sustainable value

Adhesives and sealants have been creating more sustainable solutions for decades. Some of our industry's recent innovations are demonstrated in the Good Practices on the FEICA website.

Examples from different sectors are highlighted in the diagram on the next page, covering the main areas of circularity and sustainable developments, showing the value improvement that adhesives and sealants deliver to a broad range of applications along different value chains:

- **Energy saving:** Adhesives and sealants enable solutions that save energy in the use phase of buildings and vehicles, e.g. for the fixation of insulation panels, the production of lightweight cars, etc.;
- **Material efficiency:** Adhesives enable the optimised use of materials, e.g. composite materials for lightweight vehicles and for furniture parts, supporting the use of the renewable materials such as wood in construction;
- **Reparability:** Adhesives enable the repair of many products, e.g. shoes, conveyor belts, etc., thereby extending their utility, use phase and service life;
- **Durability:** Adhesives and sealants extend the life span of products and components e.g. the conservation of food through re-closable packaging;
- **Recycling:** Adhesives which do not impede/burden recycling, e.g. in paper recycling or the cleaning and reuse of returnable glass bottles, as well as recycling efficiency through material efficiency because less material needs to be processed when the product is at its end-of-life.

Adhesives and sealants enable more sustainable products and enhance circularity along their life cycles



Approach of adhesives and sealants to the circular economy

Because adhesives and sealants are only used in thin films or beads to bond or seal materials, the focus must be on the recycling and circularity of the products and systems manufactured using adhesives and sealants rather than on the recycling of the adhesives and sealants themselves.

Although there are already many examples of adhesives and sealants contributing to improved sustainability and circularity of products, there are currently also many application areas where recycling is not the preferred end-of-life option. Technical reasons or high energy requirements often lead to unfavourable environmental impacts based on a life cycle analysis along entire value chains.

FEICA believes that the circular economy is a paradigm shift for industry and society. To fully address its challenges, all stakeholders need to contribute, since ensuring full circularity goes far beyond what single economic actors can achieve alone. The adhesive and sealant industry is convinced that design for circularity across the entire value chain is of key importance to exploit the full potential of a circular economy, including extending the use phase of products, reparability, reuse and recycling. Innovative and existing adhesives, as well as new technologies to be developed can support circular approaches, for example,

enabling or enhancing recyclability by ensuring they are never burdened by adhesives or sealants. One such area of innovation might be for instance debonding-on-command type adhesives enabling separation of components for repair or recycling.

Our industry is willing to co-operate with all actors within the value chains in the design phase of products to optimise their end-of-life solutions through options such as recycling and repair potential.

Circularity is a journey – FEICA’s way ahead

The move towards a circular economy is an innovation driver for the adhesive and sealant industry. FEICA is engaged in the following actions:

- Monitoring of EU initiatives and actions to implement circular concepts and provide inputs in advance
- Raising the awareness of the adhesive and sealant industry’s important contribution to the circular economy and sustainable development.
- Educating the industry and supporting adhesive and sealant producers in Europe on circular economy developments and good practices;
- Creating partnerships along value chains to support circularity by design;
- Understanding the end-of-life needs of customer products and contributing to innovation;
- Reaching out to the recycling industry and associations to understand their challenges and innovate where needed for next generation reprocessing;
- Working closely with the relevant standardisation bodies and, together with FEICA’s National Associations, supporting efforts to achieve standards related to the circular economy.

The adhesive and sealant industry, committed to its sustainability vision, will be a key enabler in the development of the circular economy, collaborating across the value chains and with end customers to support societal change.

Background on FEICA

FEICA, the Association of the European Adhesive & Sealant Industry, is a multinational association representing the European adhesive and sealant Industry. With the support of its national associations and several direct and affiliated members, FEICA coordinates, represents and advocates the common interests of our industry throughout Europe. In this regard FEICA aims to establish a constructive dialogue with legislators in order to act as a reliable partner to resolve issues affecting the European adhesive and sealant Industry.

Contact

This document was developed by FEICA’s Sustainable Development Committee.

FEICA - Association of the European Adhesive & Sealant Industry
Avenue Edmond van Nieuwenhuysse 2, B-1160
Brussels, Belgium
Tel: +32 (0) 2 896 96 00
info@feica.eu | www.feica.eu

Links in this document

FEICA Sustainable Development Agenda:

<http://www.feica.eu/cust/documentview.aspx?DocID=1869>

FEICA Good Practice Stories:

<http://www.feica.eu/information-center/good-practices.aspx>

Publication ref.: POP-EX-H07-036

This document has been designed using the best knowledge currently available, and is to be relied upon at the user’s own risk. The information is provided in good faith and no representations or warranties are made with regards to the accuracy or completeness, and no liability will be accepted for damages of any nature whatsoever resulting from the use or reliance on this paper. This document does not necessarily represent the views of all member companies of FEICA.

Copyright © FEICA, 2018- Reproduction is authorised provided the source is fully acknowledged in the form: ‘Source: FEICA POP-EX-H07-036, <http://www.feica.eu>’.

