



SUSTAINABLE SOLUTIONS

ADHESIVES AND SEALANTS CONTRIBUTING TO
SUSTAINABILITY

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Who are BASA?



- Formed in 1983 from the marriage of two long established associations, the British Adhesives Manufacturers Association and the Sealant Manufacturers Conference
- Approximately 100 member Companies (circa 70% A&S suppliers, covering 85% of the sector)
- Set up to act as the voice for the adhesives & sealants industry and represent their interests and promote the sector
- We offer guidance on technical and compliance issues to member companies
- Networking opportunities for members (virtual at present!)
- Provide members with support services
- Work through the British Standards Institute to set and monitor high standards
- Work with our European Association FEICA in regards to European issues



What are we going to talk about today?

- The impact of 'sustainability' on the performance demands for adhesives and sealants?
- The function of an adhesive or sealant?
- How can we match demand for debonding and re-use with a need for long term durability?

Adhesives & Sealants as enablers



Small % of the final products



Re-use not the main impact



Raw material sources



End of life and recovery and re-use



Contribution to reduced energy demands



Light weighting



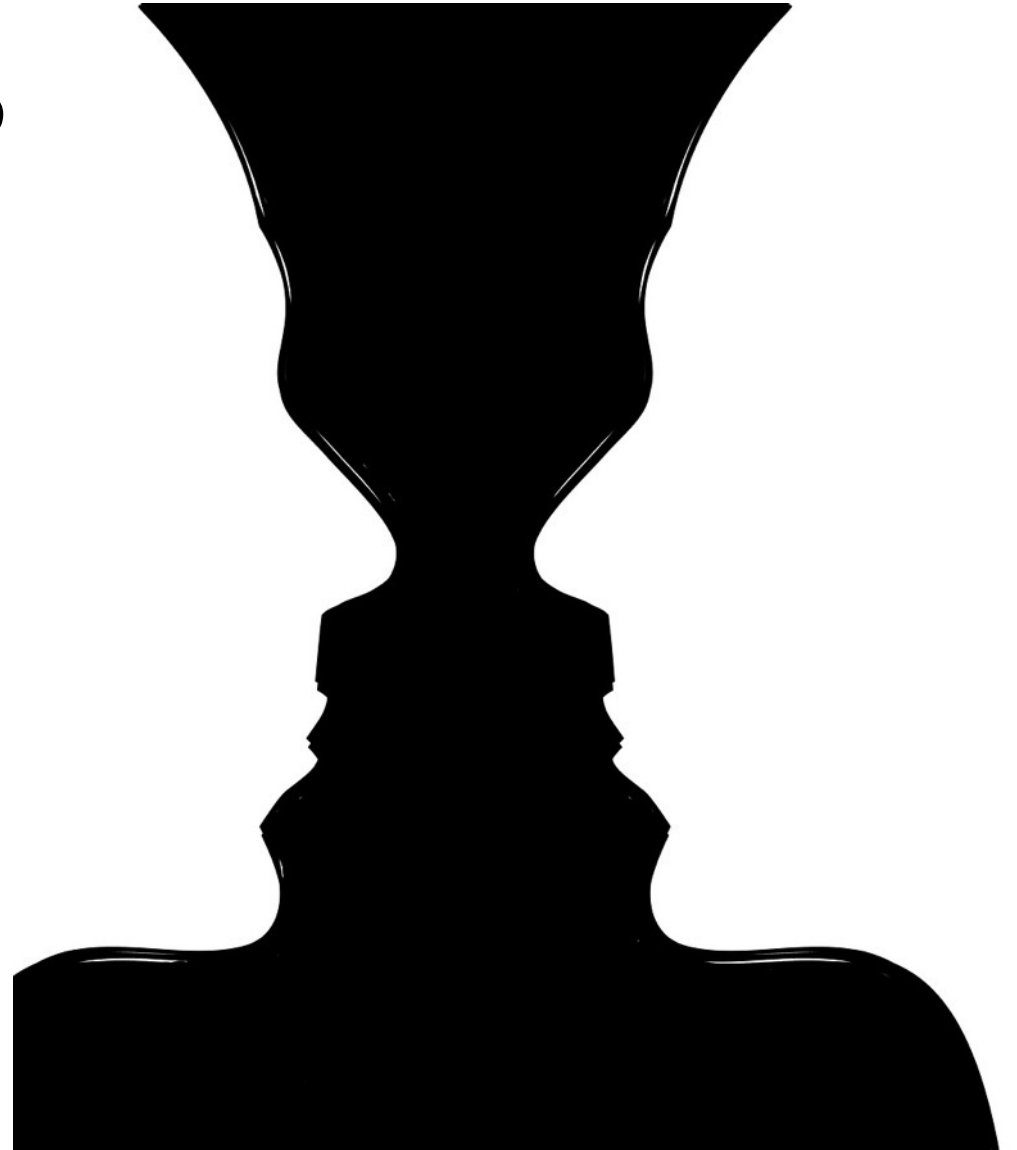
.... more about this later

Change in thinking



New demands for A&S manufacturers

1. For a long time, the durability of assemblies was the priority
2. Now there is an increasing demand for de-bonding , or dismantlability





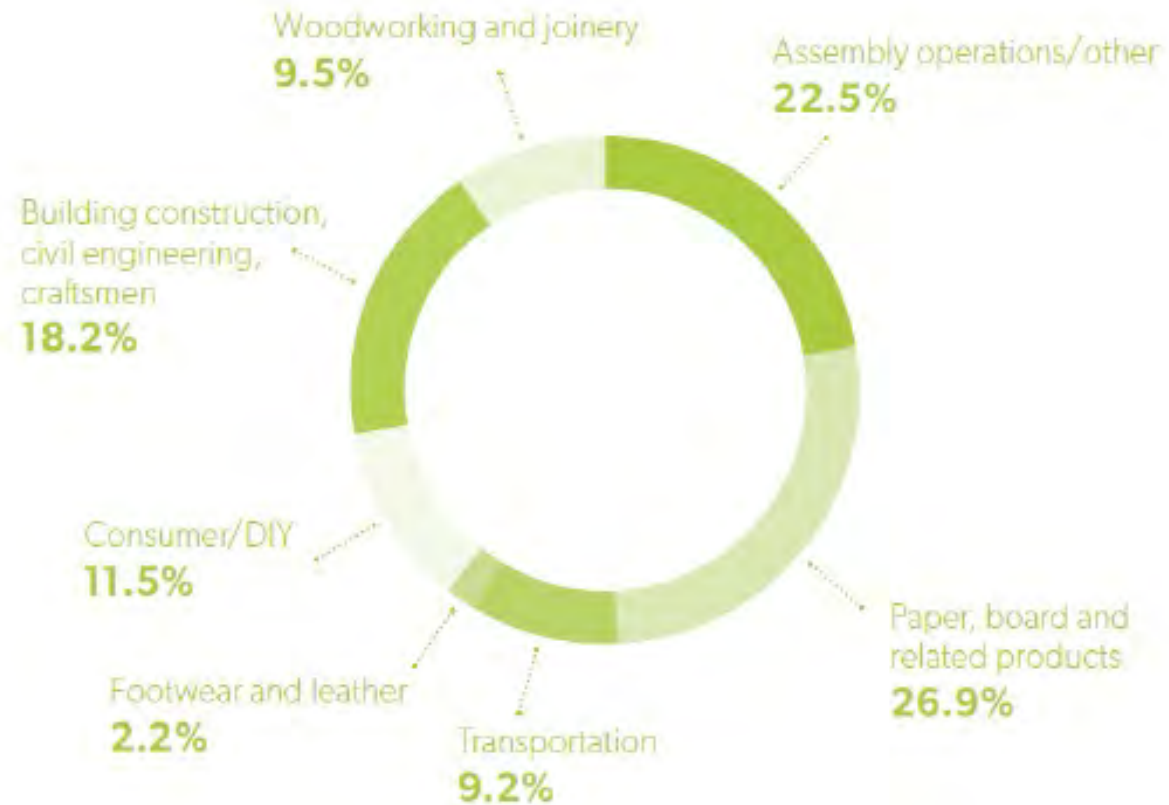
Adhesives and Sealants as Enablers

Markets



The European adhesive and sealant market 2020 End-use sectors

€17.1bn



Adhesives and sealants closing the loop

- Energy savings
- Material efficiency
- Repairability
- Durability
- Recycling



➤ Optimising the use of materials and energy

Adhesives and sealants | Key Sustainability Role

The adhesive and sealant industry generates **significant improvements, savings and CO2 emission reductions** in a broad range of applications

Examples of innovations are described in the **Good Practices** on the FEICA website and on the **EU Commission's European Circular Economy Stakeholder Platform**.



Posted 21 February 2020



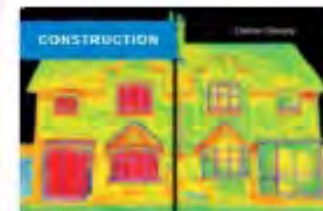
Posted 24 April 2018



Posted 11 December 2019



Posted 11 December 2019



Posted 09 March 2018



Posted 04 June 2018



Posted 20 January 2017



Posted 11 December 2019



Posted 09 March 2018



Posted 09 March 2018



Posted 09 March 2017



Posted 21 April 2020

RENEWABLE ENERGY – SILICONE SEALANT MANUFACTURE

- Two wind turbines with an annual production of 8,800 MWh cover about 40% of the site's electricity needs while reducing CO2 emissions by 3,000 tons per year
- Photovoltaic panels produce 220 MWh of electricity per year
- A cogeneration unit produces 50% of the site's annual heating requirements and 15% of its electricity needs reducing CO2 emissions by a further 700 tons per year



ADHESIVES FOR IMPROVED RECYCLING OF PACKAGING



- A compatible adhesive enables a full polyethylene (PE) laminated stand up pouch (SUP) containing up to 30% recycled PE content
- The used SUP can then be recycled and reused to create a new SUP
- The solvent-free adhesive is suitable for high-speed laminating machines and provides a fast bond strength enabling fast further processing i.e. slitting and pouching
- The SUP can be filled with dry filling and re-fill goods



An example of the remarkable advances in façade and window design can be seen in Burj Khalifa - the world's tallest building - in Dubai. At a height of 828 metres, it is constructed of giant glass façades and aluminium around a central core.

BONDING SEALANTS IN HIGH PERFORMANCE INSULATING WINDOWS

- Buildings consume more than 40% of energy in Europe
- Sealants and foams play a key role in improving air tightness
- Glazing adhesives provide insulation properties, faster installation times and are lighter in weight than traditional mechanical fasteners
- Bonding Sealants are more flexible, more forgiving and absorb shock better than mechanical fixation systems
- The energy needed to produce sealant and adhesives corresponds to about 10% of the embodied energy of a window in total and is recovered in a few days by reducing energy losses to a minimum



ADHESIVES FOR INCREASED CRASH RESISTANCE IN AUTOMOTIVE

Crash-resistant structural adhesive solutions for lightweight composite materials in the automotive industry allow the reduction of the CO₂ footprint during production and use phase, while at the same time improving passenger safety.



Examples of adhesive bonding in automotive:

- Structural reinforcement of cavities
- Direct glazing
- Interior bonding
- Structural bonding
- Sound dampening

Graphic material © Sika

BONDING IN THE AUTOMOTIVE INDUSTRY REDUCES EMISSIONS

Emissions from passenger cars account for around half of all CO₂ emissions in the transport sector.

Use of structural adhesives contributes to reduce the weight of a car by at least 15 %.

The energy consumption for the production and for the use phase is reduced by more than 15 GJ (equivalent to more than 300 litres of fuel).

A comparison of joining technologies demonstrates that adhesive bonding has the lowest Global Warming Potential compared to welding and clinching technologies

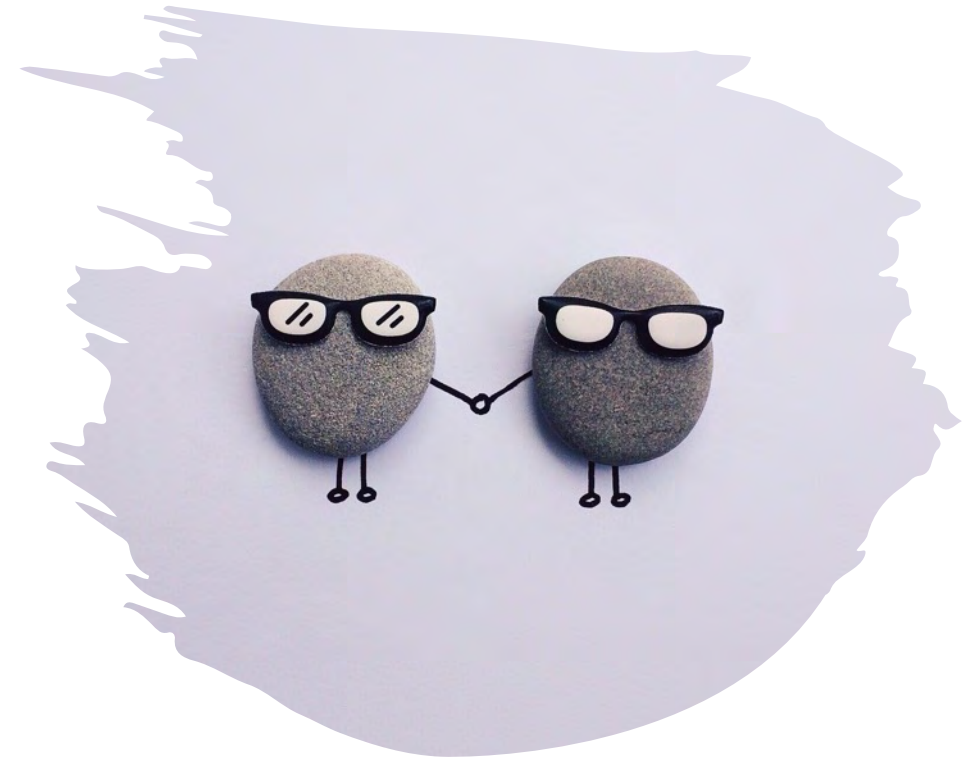


PLANT-BASED PAPER GLUES AND PACKAGING

Paper glues based on natural ingredients and packed in mainly plant-based packaging help to reduce CO₂ emissions and save fossil resources.

BASA Supporting Members

- To operate in a sustainable manner
- Business processes to improve sustainable operations
 - Reducing energy consumption
 - Reducing water consumption
 - Reducing emissions to air
 - Reducing emissions to water
 - Reducing emissions to soil



BASA Supporting the Circular Economy

- Promoting a harmonised regulatory approach, in order to help minimise the burden of compliance
- Raising awareness of the adhesive and sealants industry's contribution to sustainable development through publications, events and case studies, etc.
- Providing guidance and assistance to members on how they can implement the principles of sustainable development



Thank you for your attention

Any questions?



Acknowledgements

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