



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



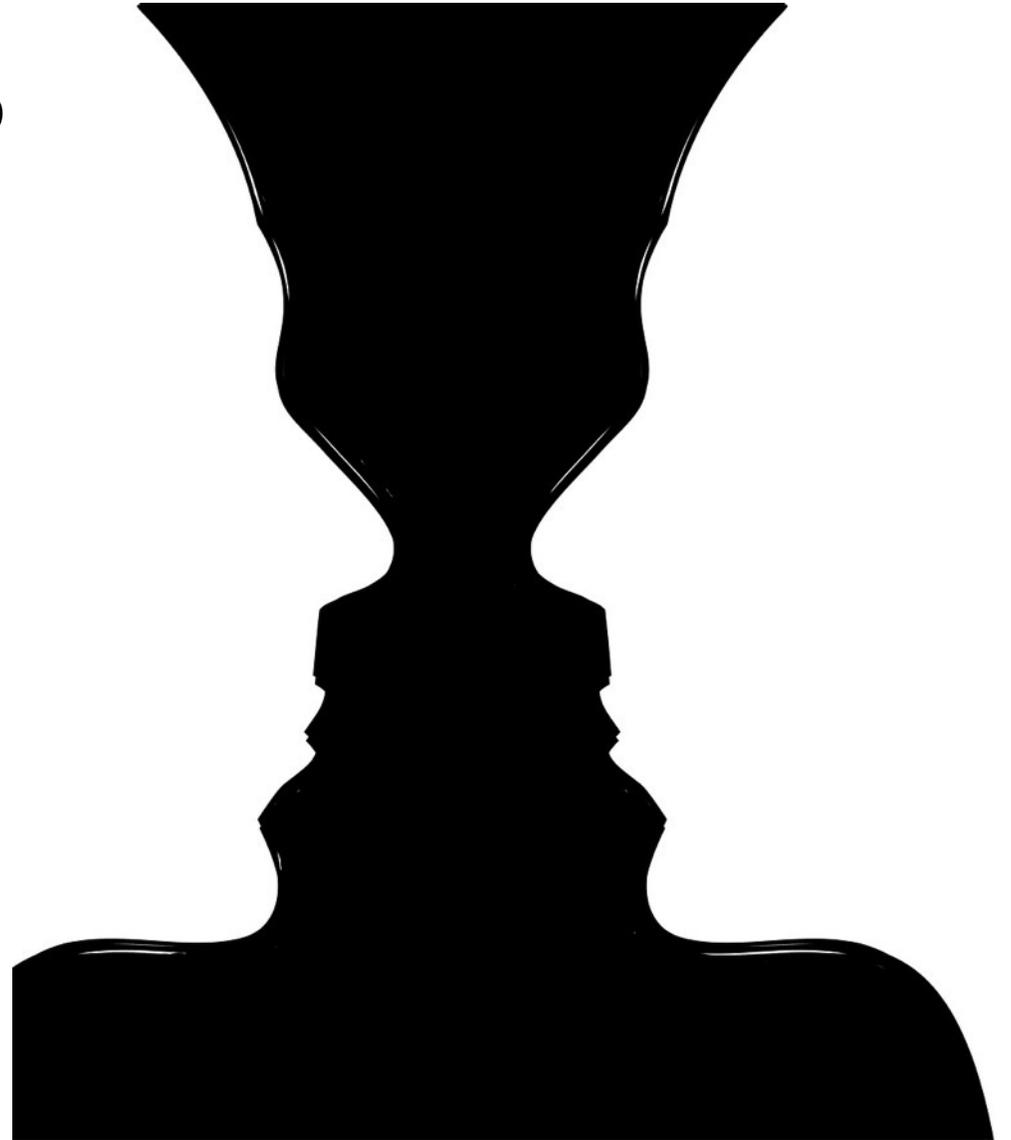
.... more about this later

Change in thinking



New demands for A&S manufacturers

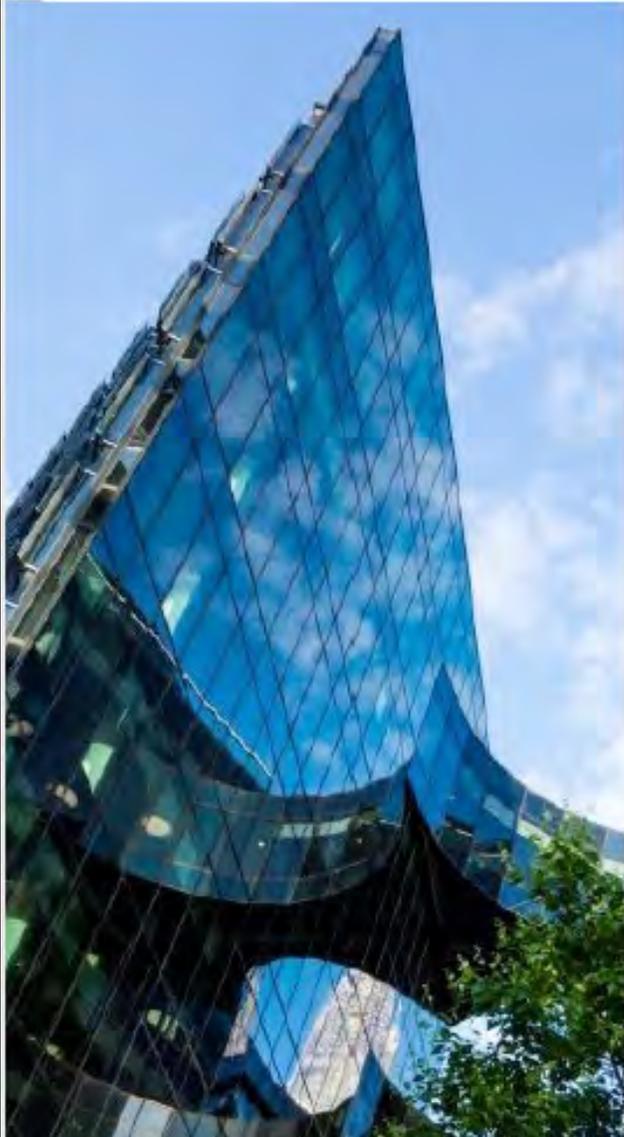
1. For a long time, the durability of assemblies was the priority
2. Now there is an increasing demand for de-bonding , or dismantlability





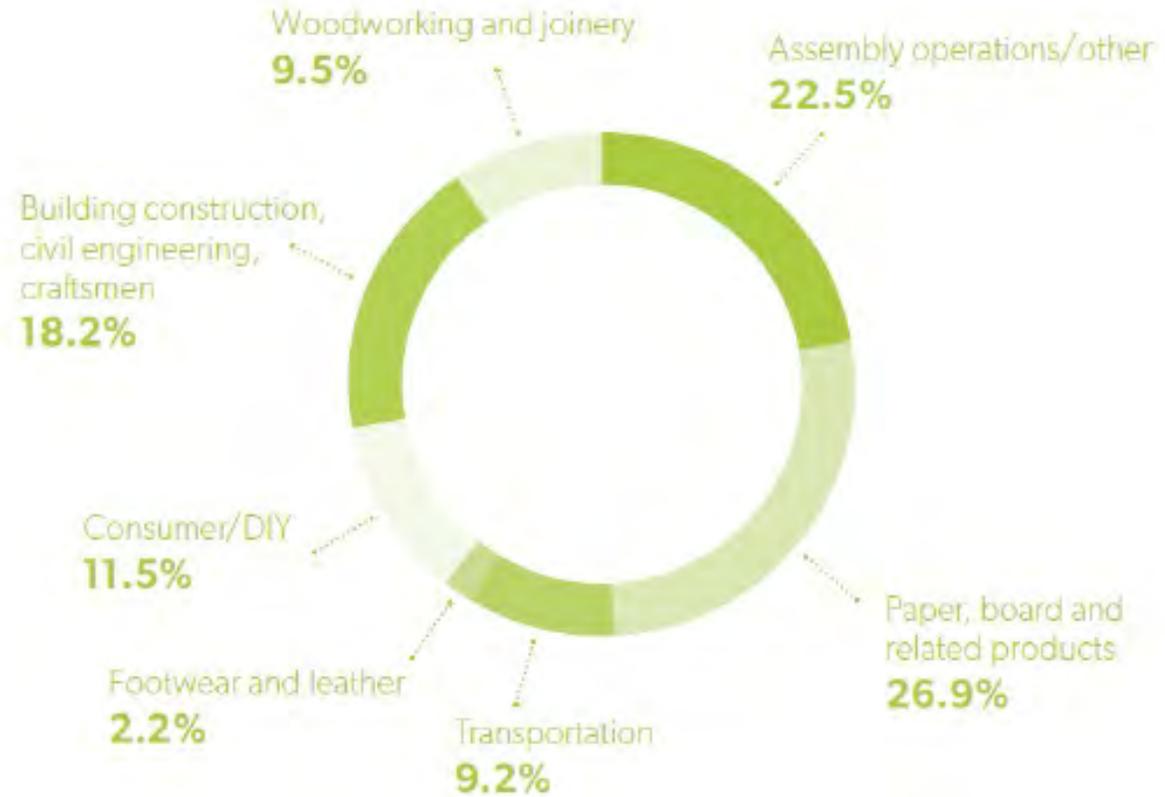
Adhesives and Sealants as Enablers

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

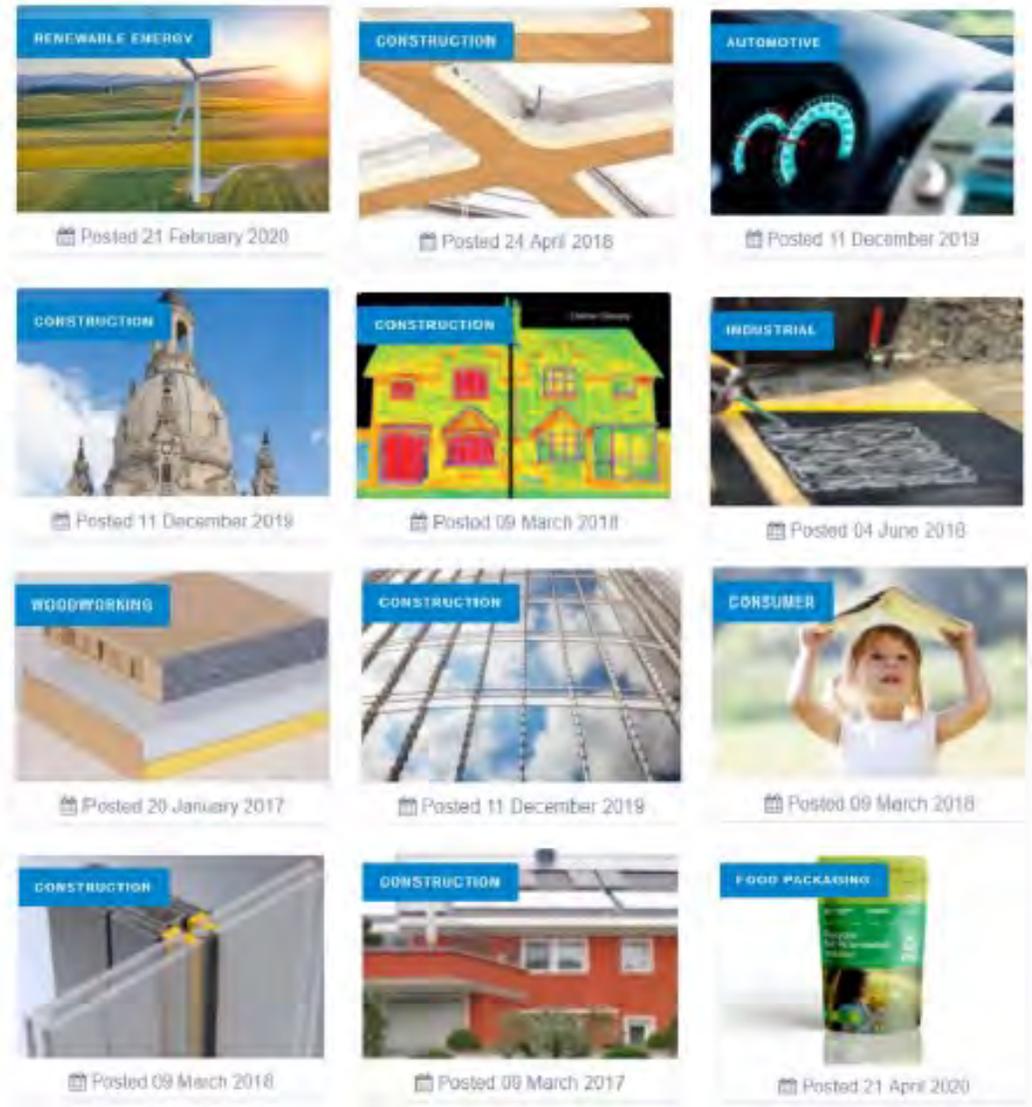


➤ Optimising the use of materials and energy

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**.



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

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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

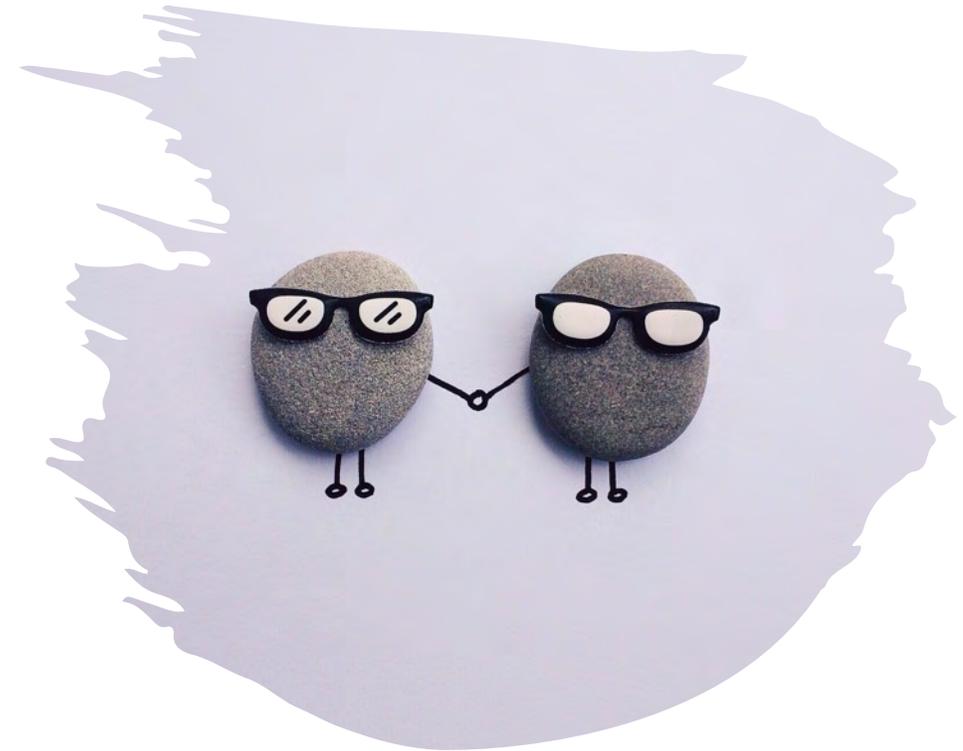


PLANT-BASED PAPER GLUES AND PACKAGING

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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