

# SUSTAINABILITY

MISSION: TOGETHER. RESPONSIBLE.

Sustainability is at the core of everything we do. Our corporate ecological commitment is summed up by the **MISSION: TOGETHER. RESPONSIBLE.** As we also apply and comply with this mission in regard to our products, we have created a classification system. The five different categories in our **FIVE-DOT-MISSION** system indicate the factors with the greatest impact on sustainability. Our intention is to offer our partners guidance with their purchasing decision-making and to provide a transparent system. A system which focuses on the use of materials, the CO<sub>2</sub> content, the product life cycle and, of course, recycling, a topic of particular relevance for our products. Our FIVE-DOT-MISSION makes an assessment of a product on the basis of five categories and awards points per category, the product is then assigned to one of the five coloured DOTs. By this means we achieve a transparent, quick valuation logic which we can also use to gauge product innovation and improvement at 3A Composites.

## THE FIVE-DOT CATEGORIES ARE:

**1. BIOBASED CONTENT**  
Depending on the product, different raw materials are used to manufacture our panels. In this case, we look at the percentage of renewable raw materials used in our products. Our aim is to increase the percentage whenever possible and appropriate.

**2. RECYCLED CONTENT**  
The industry selects recycled raw materials for use in the manufacture of new products which also fulfil requirements such as fire ratings, processing prerequisites and customer expectations in terms of functionality and appearance. This category is where we gauge the proportion of high quality recycled raw material in our products' total material input.

**3. FOSSIL CO<sub>2</sub> BOUND IN THE MATERIAL**  
This category shows the weight of fossil CO<sub>2</sub> embedded in our panels. Differences here are principally due to the raw material type and origin, the density, the composition and the proportion of recycled content.

**4. PRODUCT LIFE CYCLE**  
The plastic sheets and composite panels we produce are used by our customers for a longer period of time. In contrast to products used in the short term, these longer-term alternatives make an active contribution to saving resources. In this category we show our panels' average service life. Material properties result in disparities, so life cycles range from <1 year to even >30 years.

**5. RECYCLABILITY**  
One of the most important aspects of sustainability is contributing to environmental protection by saving valuable raw materials and avoiding waste. Unlike the second category "recycled content", in this assessment category, we show options for recycling the panels after they have been in use. There are already, for instance, established recycling loops for paper and metals. At some production sites, the material can already be returned, so that material for new panels can be created from it. As a company, we came to the conclusion that thermal recycling does not seem sustainable enough, so it is not included in our FIVE-DOT classification. Instead, we are actively working with partner companies to establish a closed-loop, sustainable and future-oriented recycling economy.

As many as 3 points can be achieved in each of the categories presented, totalling a maximum of 15 points. According to the total number of points achieved (1-15), the FIVE-DOT classification is conducted using the following colour gradation.

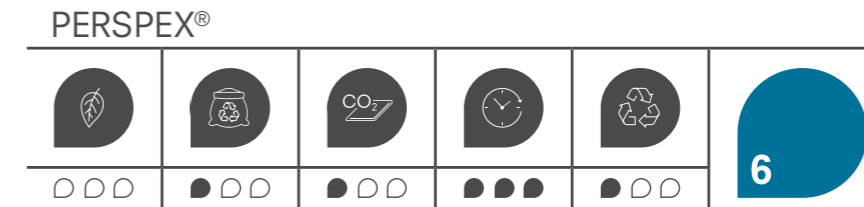


Transparency is important to us! We will review the product assessment annually to see in which areas the product can be improved. We have set ourselves the goal of achieving the majority of our sales with products which achieve a rating of ≥ 7 points in the FIVE-DOT classification by 2030.

Join us on our sustainable mission!

## PERSPEX® FIVE-DOT-MISSION

PERSPEX® acrylic sheet, one of the best quality acrylic materials in the world, has been assessed in line with the criteria described above. The product currently achieves a FIVE-DOT classification with a total of 6 points.



**RECYCLED CONTENT**  
The current production of our PERSPEX® cast acrylic sheets already contains a proportion of recycled MMA material. The majority of this material is waste from the manufacturing process which can be completely recycled by means of pyrolysis to provide raw material (MMA) for new acrylic sheets. Furthermore, all raw materials used in making our PERSPEX® sheets also comply with the requirements of the most recent version of the European Union Chemicals Regulation (REACH). In particular, PERSPEX® sheets do not contain any of the substances listed in the current version of the ECHA Candidate List of Substances of Very High Concern (SVHC). PMMA does not contain any toxic substances or heavy metals which may cause environmental damage or pose risks to health.

**FOSSIL CO<sub>2</sub> BOUND IN THE MATERIAL**  
Owing to the MMA used as a raw material in the manufacturing process, PERSPEX® contains fossil carbon. However, thanks to its lower density, PERSPEX® PMMA contains less fossil carbon per m<sup>2</sup> than other transparent plastics. As well as the lower density, another factor to note is that, compared with other plastics, the polymer molecule contains a lower percentage of carbon atoms.

**PRODUCT LIFE CYCLE**  
Acrylic glass (PMMA) is a robust, highly transparent and extremely durable material featuring excellent UV stability and resistance to weathering and ageing. We guarantee a service life of thirty years (transparent sheets) as well as ten

years (standard colours) for the PERSPEX® product family. The sheets are protected against the harmful effects of ultra violet rays and there are no significant changes with regard to optical or mechanical properties. When processed, used, and cared for in an appropriate manner, the life cycle of our sheets can be considerably longer than ten years. An extended service life also leads to saving resources as fewer replacements are required. Our PERSPEX® sheets are used in a wide variety of interior and exterior applications where priorities include durability, UV stability and, above all, transparency (92% light transparency for colourless sheets). PERSPEX® is a product offering sustainable, long-term use and excellent product performance.

**RECYCLABILITY**  
PERSPEX® sheets can be converted back into their original raw material, methyl methacrylate (MMA), using various recycling processes. Most modern recycling processes convert PMMA sheets or waste from production processes into a MMA liquid monomer using chemical recycling (depolymerisation). The recovered MMA can then be reused to create a new product from an existing one. Renowned chemical companies are currently undertaking intensive research into improved depolymerisation technologies to achieve a more efficient and sustainable means of recovering the precious raw material MMA, which is used in manufacturing PERSPEX® acrylic sheets. These developments support efforts made by the market to increase the rate of PMMA recycling in Europe.

At our PERSPEX® production site in Darwen, UK (certified in accordance with the Management Systems for Quality DIN EN ISO 9001 and for the Environment DIN EN ISO 14001), we are committed to reducing energy consumption and carbon dioxide emissions. A production efficiency of 97% in our manufacture of acrylic sheets at the plant means we are able to make optimal use of raw materials and reduce waste during the manufacturing process. Numerous different investments have already been made to lessen the impact on the environment. Annual water consumption has been reduced by 24 million litres, and almost 800 tonnes of carbon dioxide have been saved every year as part of a hot water recycling project. By the end of 2023, the construction of a new, modern and energy-efficient production plant should be complete. This new production plant will offer state-of-the-art polymerisation technology and fulfil the most recent environmental standards to ensure sustainable and ecological production processes. Compared with current manufacturing processes, significant reductions in both energy and water consumption will be possible. Facilities for processing and using rainwater are just one of the new buildings' advantages. In addition, the installation of a heat recovery unit converts waste heat from production into room heating.

PERSPEX® acrylic sheets are produced according to DIN EN ISO 7823-1 and do not contain any toxic materials or heavy metals, which may cause environmental damage or health risks. In addition, PERSPEX® acrylic sheets are only half the weight of glass. Due to weight savings, transport costs are lower and less carbon dioxide is emitted.

