

Keen to be Green

Full range of rPET Products



AOC
Trusted Solutions

Value from Products based on Post-Consumer rPET

For the longest time, customers have been successfully using AOC formulations to produce composite parts, ranging from bathtubs and shower trays, to sewer repair systems and water transportation networks.

Fossil-based raw materials used for these formulations may become scarce in the future. Like our customers, AOC is on a journey to become more sustainable and wants to reduce its impact on the environment. Therefore, AOC is increasingly using post-consumer recycled PET bottles as raw material, and making available to the market a broad range of rPET-based products covering the majority of composites transformation processes.



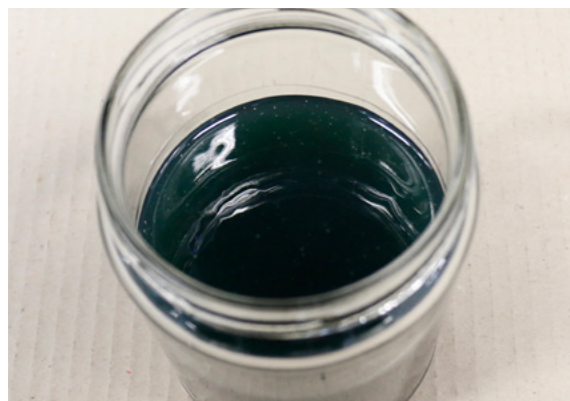
Quality Formulations

AOC stands for quality consistency, close collaboration with our customers, and innovation to create sustainable products. Therefore, we are proud to offer you an extended range of rPET formulations across markets and transformation processes, and would love to work with you to introduce these in order to reduce the environmental footprint of your products (and enable you to differentiate in the market).

Typically, the rPET formulations we produce are more heat resistant than comparable Ortho and DCPD formulations. They also allow you to create beautiful and more resilient composite parts.

The manufacturing of formulations from post-consumer waste is more cumbersome compared to normal products, as it involves additional process steps. However, AOC believes that using rPET as raw material is the right thing to do for the environment.

The AOC rPET product series are produced in our operations in Ústí nad Labem in the Czech Republic. At this plant AOC has invested to convert post-consumer PET waste into a valuable raw material, and ultimately, into a quality structural formulation.



NEXT® Eco-Label

In order for customers to better recognize products with reduced environmental impact, AOC has introduced the NEXT® Eco-label. In addition to formulations with renewable content like rPET, the NEXT® Eco-label also covers our Styrene-free, low Styrene, and bio-based series.



More information about the Next™ Eco-label you can find on the AOC web site ([Next® Eco-label background](#), [Next® products](#)).

External recognition by EcoVadis

AOC is setting high standards in Environmental, Social, and Ethical performance, while actively promoting sustainable products and solutions. The introduction of a full range of rPET-based products is a good example of this.



As a recognition for its performance and the company's demonstrated commitment to Sustainability, AOC EMEA has received again a Gold Rating from EcoVadis in 2023. AOC's rating was in the top 4 % percentile of chemical companies, which clearly indicates the company is a front runner in the industry.

Renewable Value

In order to produce 1 ton of rPET-based formulation we typically require the equivalent of 4,200 PET bottles. This avoids disposal of the rPET into landfill, or using it as fuel in incineration processes.





Full range of Products

AOC has developed a full range of rPET-based formulations, covering most of the existing composites transformation processes. The products combine ease of processing and excellent sustainability performance. This allows you to manufacture composite parts in the right shape, with great strength and long-term durability while making your products more sustainable.

CIPP/Relining

For the renovation of sewers AOC has introduced **Synolite™ 6211-T-20**, which already has been used in multiple European countries to produce quality liners. The rPET-based liners are deployed for the renovation of damaged pipes and allows to create a pipe-inside-a-pipe that extends host pipe life expectation by multiple decades.

Through the excellent wet out of ATH fillers and low inherent shrinkage (low cracking sensitivity), installed liners are strong and closely following the host pipe. Synolite™ 6211-T-20 conforms to DIN 18820 Part 1 - Group 2 and DIN 16946 Part 2 - Type 1140



Closed Mold/ SMC BMC

Many OEMs in Automotive and Electrical end-use markets would like to introduce material solutions that incorporate renewable raw materials. The novel **Palapreg® P 40-01** is based on post-consumer rPET waste and meets these requirements.

This product can be used in Low Shrinkage formulations, both in SMC and BMC, while Low Profile solutions are under evaluation. The product is thickenable for use in combination with MgO, providing processing robustness in existing SMC and BMC manufacturing operations. The fast cure at elevated mold temperatures ensures parts can be molded at short cycle time in large volume series.

Marine

The **Synolite™ 4600** series have been developed specifically for Marine applications, allowing boat manufacturers to further improve sustainability of their yachts, while not compromising on boat quality and mechanical performance. The formulations are Lloyd's Register approved and available both in vacuum infusion (**Synolite™ 4600-G-1**) and hand lay-up (**Synolite™ 4600-L-1**) versions.



Pultrusion

For the manufacturing of high-quality pultruded profiles and components, it is important to have excellent compatibility of resin and fiber, as well as find the right solutions for obtaining smooth surfaces. AOC's **Palatal® P 42-01** provides great surface quality with well-known low-profile additives. At the same time, mechanical properties tend to be at par with the properties of profiles made with conventional Ortho, Iso and DCPD formulations. Components based on this AOC rPET formulation can typically be used in transportation, construction and industrial applications.



Bathroom and Sanitary

Beautiful bathroom components like shower trays, baths, vanity tops and sinks can be manufactured from AOC's rPET-based products. In general, these parts are made behind a gelcoat or thermoformed acrylic sheet through cultured marble processes with filled casting formulations, or by using hand lay-up or spray-up processes with glass reinforced formulations. Typical requirements of the finished components include the resistance to thermal cycling, high strength and stiffness, and consistent shrinkage resulting in predictable part dimensions.



The **Synolite™ 4320-P-1** hand lay-up and spray-up formulation is used when acrylic adhesion is required. In case a white colored resin is desired, customers use the equivalent **Synolite™ 4320-L-1** and **Synolite™ 4320-L-2** formulation.

For casting processes AOC recommends the **Synolite 1112-G** series, which can be used in combination with both gelcoats and acrylic sheets.

Filament Winding

AOC has products based on post-consumer rPET waste for making pipes and industrial components used in contact with water for many years. AOC's **Palatal® P 42-01** and **Palatal® P 42-02** are converted through filament winding and centrifugal casting processes into a variety of components.

The great mechanical strength and lightweight allows for easy pipe installation. The excellent resistance to water and sewer environment, makes these pipes a very reliable and green alternative to conventional Ortho formulation based pipes.



Continuous Panel

Composite panels made in continuous manufacturing processes combining glass fibers with a matrix, are often used for the production of sandwich panels incorporating a structural foam as core material. These panels find their way into transportation, recreational vehicles and construction application.

AOC has introduced dedicated products in the **Synolite™ 8421** series to produce these panels, allowing to operate the manufacturing process in a robust and efficient way, while providing predictable mechanical strength and excellent surface quality.

Hand Lay-up

For making great parts in building & construction, automotive, industrial, and consumer applications, AOC has introduced the **Synolite™ 4320-L-3**, **Synolite™ 4320-P-1**, and **Synolite™ 4320-P-2** formulations.

Synolite™ 4210-L-1 has a similar field of application, while providing a higher heat resistance. The **Synolite™ 1185-P-1** product has been developed specifically for making thick parts, allowing to produce a heavy multi-layer laminate in one go.

The **Synolite™ 4320-L-3** formulation is also used in combination with glass reinforcements in roofing. The product has a track record of successful deployment in the protection of flat roofs.

Casting

Many different polymer concrete components used in building & construction, road infrastructure, and industrial application can be made by using AOC's **Synolite™ 1210-U-1** and **Synolite™ 1210-U-2** formulations. These can be easily mixed with sand and fillers, providing dimensional predictability, easy of processing and durability in their final applications.

For sanitary applications AOC recommends the **Synolite 1112-G** series, which can be used in combination with both gelcoats and acrylic sheets.



AOC's rPET product portfolio

Application	Product	Description
CIPP/Relining	Synolite™ 6211-T-20	Thixotropic, excellent filler wet out
SMC BMC	Palapreg P 40-01	Thickenable, low shrinkage
Marine	Synolite™ 4600-G-1 Synolite™ 4600-P-1	Infusion, Lloyd's approved Hand lay-up, Lloyd's approved
Pultrusion	Palatal® P 42-01	Fiber compatibility, low shrinkage
Bathroom and Sanitary	Synolite™ 4320-P-1 Synolite™ 4320-L-1 Synolite™ 4320-L-2 Synolite™ 1112-G-1 through -5	Hand lay-up, acrylic adhesion Hand lay-up, acrylic adhesion, white Hand lay-up, acrylic adhesion, white Casting, excellent filler wet out
Continuous Panel	Synolite™ 8421 Series	Excellent fiber wet out
Hand Lay-up	Synolite™ 4320-L-3 Synolite™ 4320-P-1 Synolite™ 4320-P-2 Synolite™ 4210-L-1 Synolite™ 1185-P-1	Hand lay-up, thixotropic Hand lay-up, thixotropic, LSE Hand lay-up, thixotropic, LSE Hand lay-up, thixotropic, higher HDT Hand lay-up, thixotropic, LSE, thick laminates
Casting	Synolite™ 1210-U-1 Synolite™ 1210-U-2 Synolite™ 1112-G-1 through -5	Polymer concrete, excellent filler wet out Polymer concrete, excellent filler wet out Excellent filler wet out
Filament Winding	Palatal® P 42-01 Palatal® P 42-02	Excellent fiber wet out, water resistance Excellent fiber wet out, water resistance

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