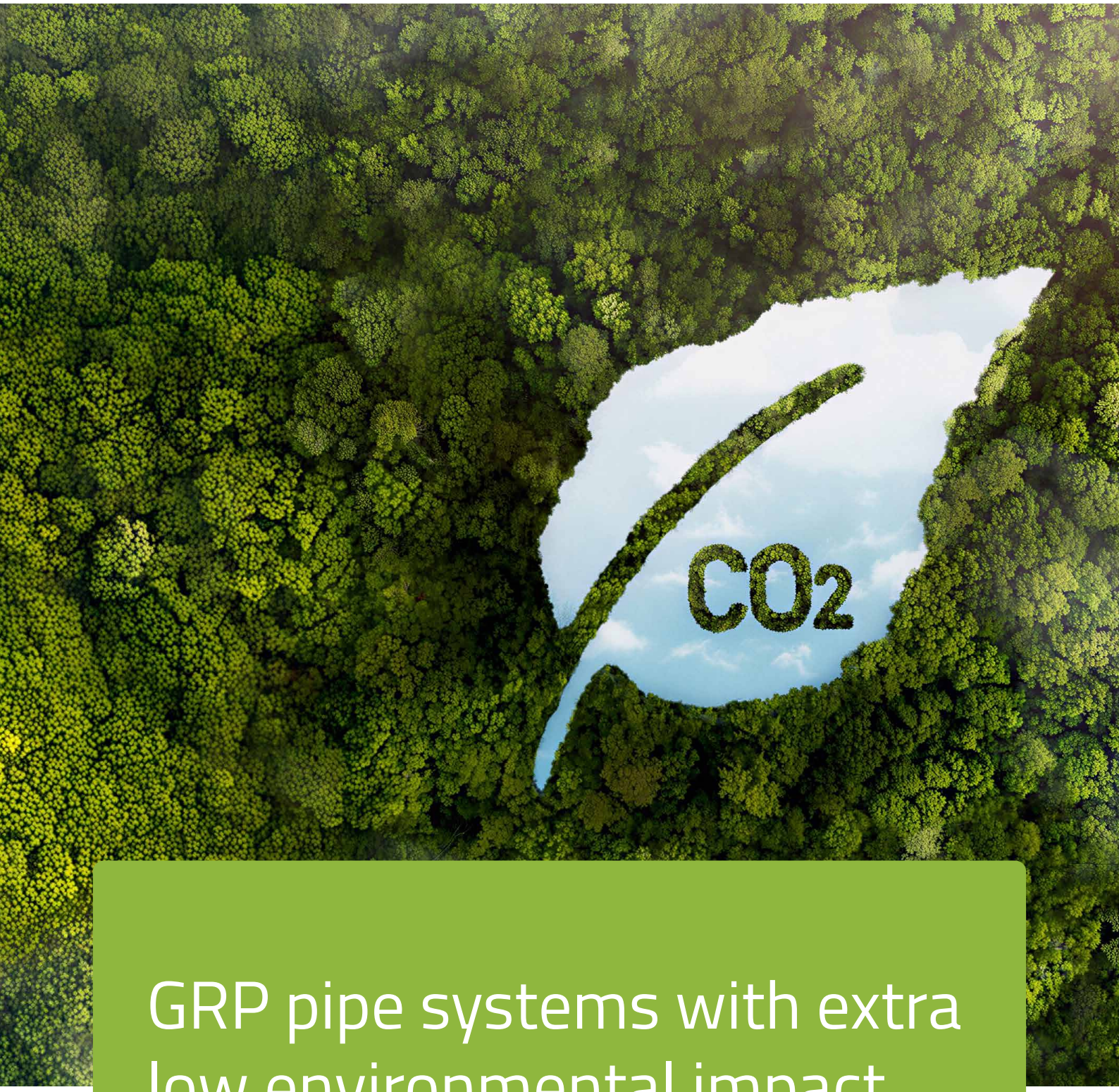


GRP pipe systems with extra low environmental impact

We are living in a time of **unprecedented transformation**

As the climate crisis intensifies and global warming accelerates, the consequences are no longer abstract – they are real, measurable, and visible in our cities, rivers, and communities. Rapid urbanisation, ageing infrastructure, water scarcity, and extreme weather events are converging to create urgent, complex challenges that demand new thinking.

Across Europe and the world, there is a growing awareness that the way we design, build, and maintain our infrastructure must change. It must become more sustainable, more circular, and more responsible – not just for today's needs, but for the generations that follow.

Building infrastructure that builds a future

Recognising this urgency, the European Union is creating strong corridors of change through progressive regulations like the Ecodesign for Sustainable Products Regulation (ESPR) and the Green Claims Directive (GCD). These are not just legislative mandates – they are roadmaps for innovation. They set clear expectations for reducing environmental footprints, increasing transparency, and integrating sustainability throughout the product life cycle.

For manufacturers, engineers, and infrastructure planners, these frameworks offer both a challenge and an opportunity: to reimagine traditional materials and processes in ways that meet environmental targets while maintaining technical excellence.

In this context, Amiblu PROX stands as a successful and scalable innovation. It is the result of forward-thinking R&D, driven by a simple but powerful goal: to reduce the carbon footprint of GRP pipe systems – without compromising on performance.

Introducing PROX: the next step in sustainable pipe development

Amiblu PROX is a new generation of low-carbon engineering for glass-fibre reinforced plastic (GRP) pipe systems. Rather than being a standalone product, PROX defines how Amiblu pipes are designed and produced to achieve a substantially lower environmental footprint.

By combining optimised material formulations with responsible sourcing strategies, Amiblu PROX enables the production of GRP pipes with up to 60 % lower CO_2 emissions, while retaining all the proven advantages of standard Amiblu pipe systems – long service life, corrosion resistance, and mechanical reliability.

rPET/bio-based resin

Glass fibres – recycled or produced with renewable energy

CO_2-optimised pipe production

Low-CO_2 transportation

The name PROX is derived from "Proxima," the Latin word for "next." It represents the next step of Amiblu toward a sustainable future and the realisation of a net-zero pipe.

Reducing CO_2 at the source

Amiblu PROX focuses on lowering emissions where they are most effective to reduce: at the raw material and manufacturing stages. This is achieved through carefully selected materials and regional sourcing that lower embodied carbon without affecting performance or quality.

Bio-based and recycled PET resins

PROX uses resins derived from renewable and recycled feedstocks such as food waste, plants, and wood. These resins are chemically identical to fossil-based alternatives, ensuring identical mechanical and chemical performance.

Their significantly lower CO_2 footprint results from the use of recently absorbed biogenic carbon and reduced reliance on virgin fossil resources.

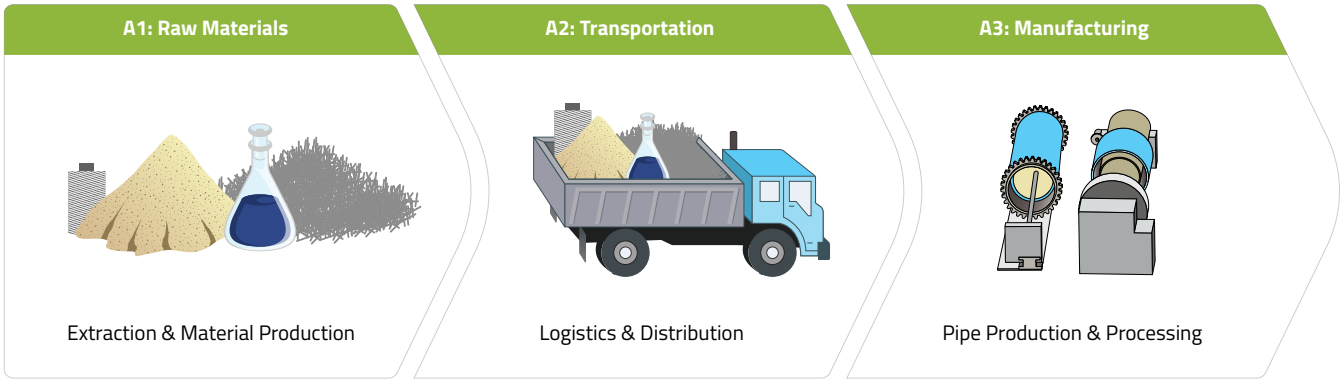
Sustainable and recycled glass fibres

Glass fibres used in Amiblu PROX are sourced within Europe to minimise transport-related emissions. They are produced using renewable energy, reducing CO_2 emissions already at the fibre manufacturing stage. PROX can also be produced with recycled glass fibres on request, further lowering CO_2 emissions.

In addition to these two primary factors, additional reductions result from the use of renewable energy at Amiblu production plants, water-free production processes, low-emission and alternative-fuel transport fleets, optimised delivery routes, and other operational efficiencies.

Lower product carbon footprint through scalable engineering

Amiblu PROX is integrated into existing manufacturing and engineering processes. Every Amiblu GRP pipe can be engineered using the PROX approach, independent of diameter, pressure class, or application. This enables carbon reductions to be aligned precisely with project-specific sustainability requirements, while preserving the established design principles, installation methods, and performance characteristics of Amiblu pipe systems.



Life cycle stages A1–A3 of a GRP pipe

At the same time, PROX supports customers in reducing Scope 3 emissions* and strengthen their ESG performance with verifiable data, making a measurable contribution to their corporate sustainability goals.

Through this integrated engineering approach, Amiblu PROX significantly reduces the Product Carbon Footprint (PCF) across the early lifecycle stages, from raw material sourcing (A1) to the finished product (A3). This makes PROX a practical and effective solution for infrastructure projects seeking to meet sustainability targets, carbon reduction requirements, and reporting obligations.

In premium sustainability projects, PROX can achieve a full 60 % reduction in CO_2 emissions compared to Amiblu standard pipes. In cost-sensitive markets, Amiblu can offer smaller but still significant reductions, making PROX accessible and attractive to a wider range of infrastructure projects.

On request, PROX can also be produced with increased recycled glass fibre content to meet tender requirements specifying minimum recycled material shares.

This flexibility allows PROX to perform effectively in both mature and emerging markets, where sustainability is increasingly becoming a key tender criterion.

* Scope 3 emissions are all indirect greenhouse gas emissions that come from a company's value chain, both upstream (suppliers) and downstream (customers).

WHAT PROX IS	
✓	A low-CO_2 engineering and manufacturing approach for GRP pipe systems
✓	A way to significantly reduce the Product Carbon Footprint (A1–A3)
✓	Based on optimised materials, regional sourcing, and renewable energy
✓	Applicable across all Amiblu pipe diameters and pressure classes
✓	Designed to support project-specific sustainability and Scope 3 targets

WHAT PROX IS NOT	
X	A separate pipe or product line
X	A change in pipe design, performance, or service life
X	Limited to specific applications or dimensions
X	A compromise on quality, durability, or standards compliance
X	An offsetting or compensation scheme

Climate impact of pipe materials

The Global Warming Potential (GWP) measures the climate impact of greenhouse gas emissions by expressing how much heat they trap in the atmosphere over a defined period – typically 100 years – relative to carbon dioxide (CO_2), which has a reference value of 1. Emissions are reported as kilograms of CO_2 equivalents (kg CO_2e), enabling a direct comparison of the climate impact of different materials, products, and processes.

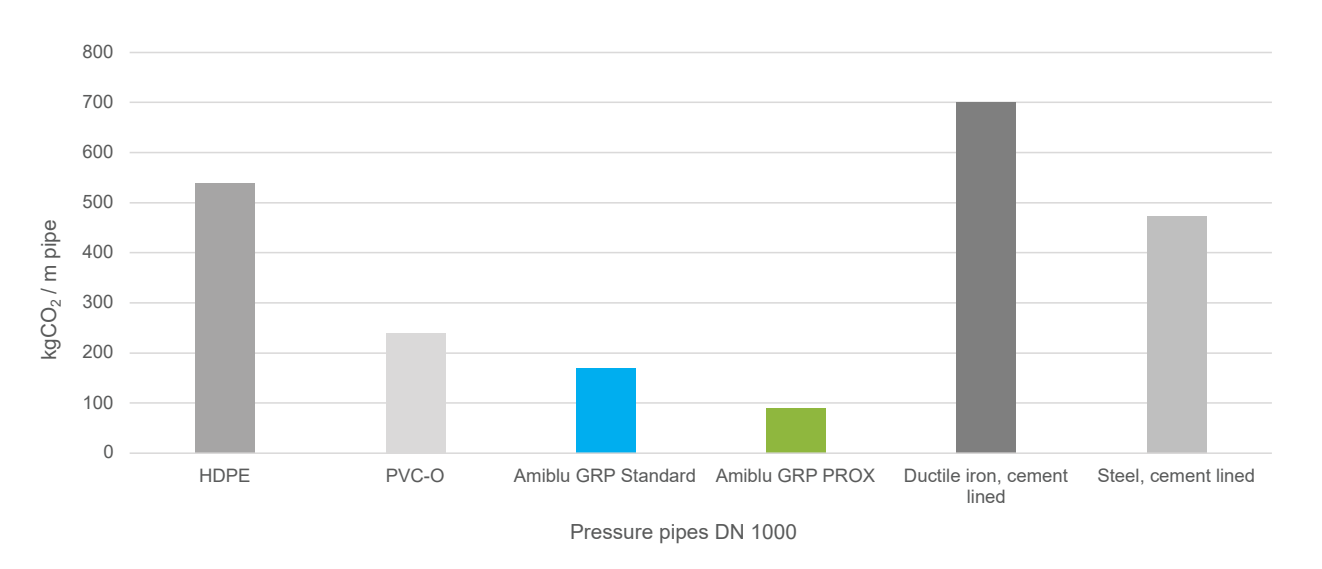
In the context of pipe systems, GWP is a key indicator used in Life Cycle Assessments (LCAs) to evaluate emissions across the product life cycle, including raw material production, manufacturing, transport, installation, and, where applicable, end-of-life or recycling.

A pipe's GWP is influenced by factors such as material choice, pipe weight per metre, energy sources used in production, transport distances, and manufacturing efficiency.
Lower GWP values indicate a smaller contribution to climate change and therefore a reduced environmental footprint.

The table below lists the GWP of different comparable pressure pipes. For Amiblu standard and PROX pipes, filament wound products (Flowtite technology) were selected.

Material	Diameter DN [mm]	Pressure PN [bar]	GWP per m pipe [kgCO_2/m]*
HDPE	1000	10	538
PVC-O	1000	12.5	240
Amiblu GRP Standard	1000	10	170
Amiblu GRP PROX	1000	10	91
Ductile iron, cement lined	1000	max. 25	702
Steel, cement lined	1000	Standard (9.3 mm wall)	473

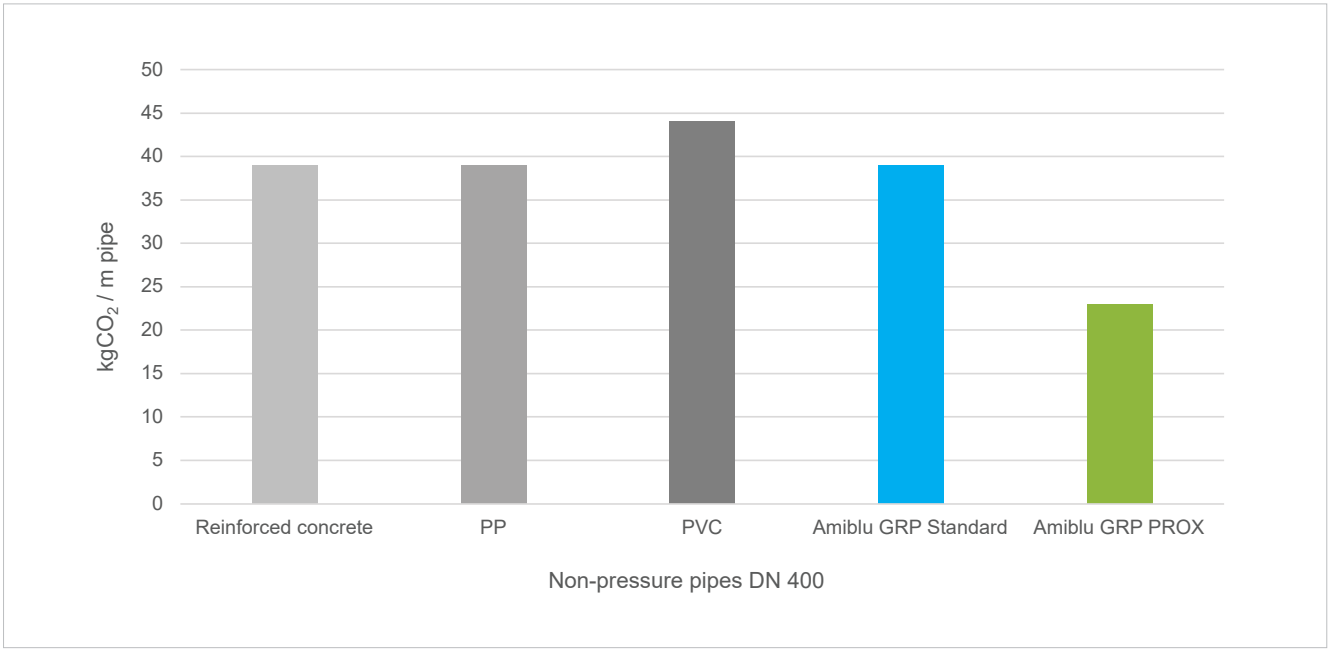
Comparison of different pipe materials and qualities for pressure applications



Global warming potential of pressure pipes

Material	Diameter DN [mm]	Pressure PN [bar]	GWP per m pipe [kgCO_2/m]*
Reinforced concrete	400	1	39
PP	400	1	39
PVC	400	1	44
Amiblu GRP Standard	400	1	39
Amiblu GRP PROX	400	1	23

Comparison of different pipe materials and qualities for sewer and drainage applications PN 1



Global warming potential of sewer and drainage pipes PN 1

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* GWP data is based on publicly available environmental documentation and third-party verified internal assessments. Detailed information is available on request.

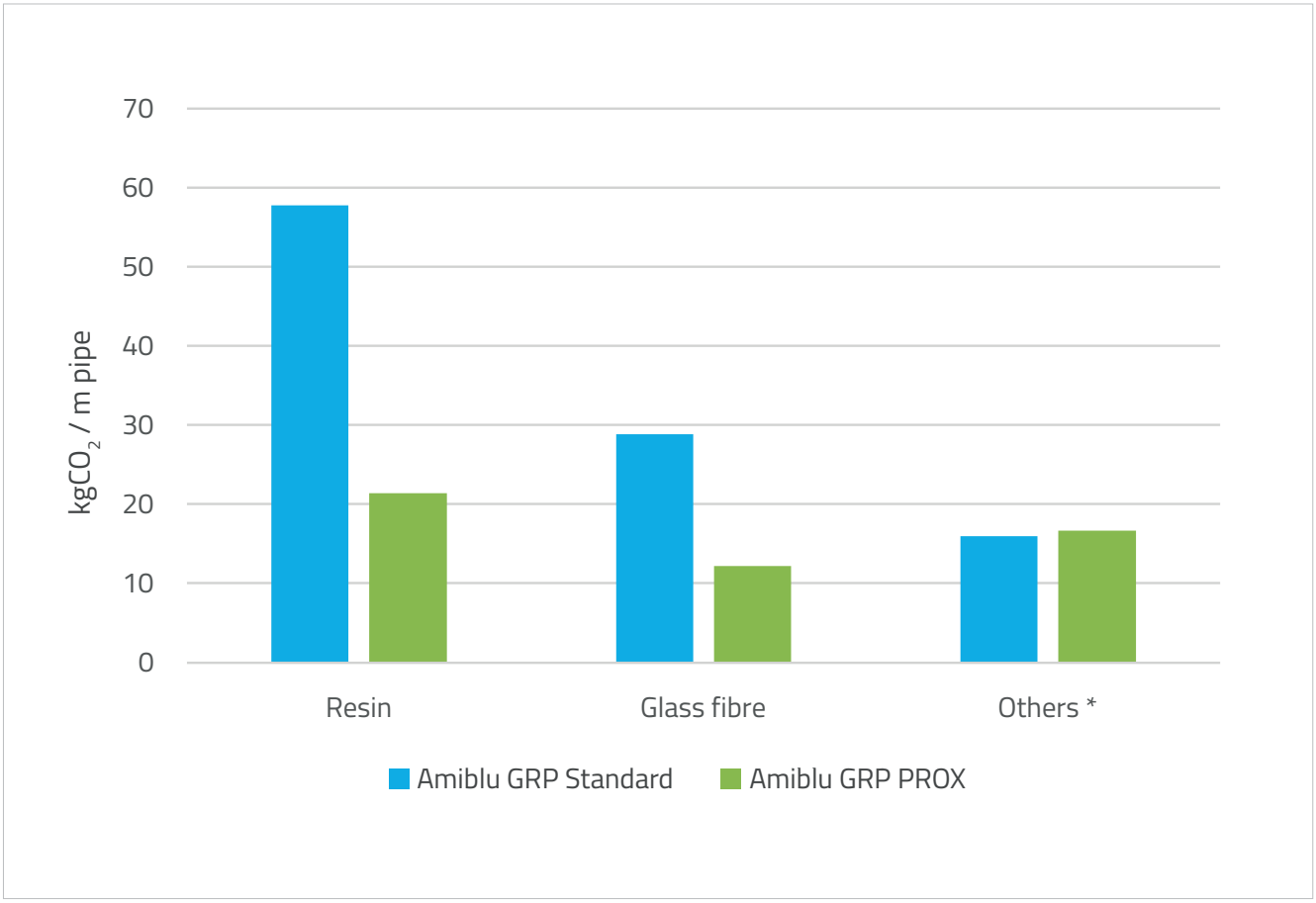
Lower CO_2 footprint of your project

With Amiblu PROX, you get the same high performance and durability you expect, while benefiting from a significantly lower carbon footprint.

Product carbon footprint by life cycle stage

Greenhouse gas emissions are distributed differently across the main contributors to a pipe's life cycle. The graph below compares the Global Warming Potential (GWP) of standard Amiblu GRP pipes and Amiblu PROX pipes, broken down into three key factors: resins, glass fibres, and other contributions, such as transport and energy use.

The breakdown shows where emissions originate and how the PROX approach reduces CO_2 at the source. The use of bio-based and recycled resins, along with sustainably produced glass fibres, results in significantly lower emissions in the material-related stages. The remaining contributions are comparable but provide further potential for CO_2 reductions.



Global Warming Potential of factors influencing a GRP pipe's life cycle (* e.g. fillers, gasket, transport, electricity, other utilities)

Fit for any application, **any type, any size**

Amiblu PROX is available in all standard pressure and stiffness classes and can be manufactured in standard and tailored lengths as both pipes and fittings.

Carbon footprint transparency **for sustainable infrastructure**

A Product Carbon Footprint (PCF) quantifies the total greenhouse gas emissions of a product over its life cycle, focusing specifically on its global warming potential (GWP). GWP measures how much heat a greenhouse gas traps in the atmosphere over a defined period (typically 100 years) compared to CO_2 and is widely used in LCAs to compare the climate impact of materials and processes – lower values indicate a smaller contribution to climate change.

This makes PCFs particularly effective for comparing climate impacts and highlighting carbon-related innovations.

In contrast, an Environmental Product Declaration (EPD) is also based on LCA but provides a broader, multi-impact evaluation, covering additional indicators such as resource use, water consumption, and acidification under standards such as ISO 14025.

While this comprehensive approach offers a more complete environmental profile, it can make it more difficult to clearly highlight specific climate-related advantages, such as the carbon storage potential of bio-based materials.

Amiblu therefore uses PCF to qualify its PROX pipes, as it clearly captures the benefits of bio-based resins, which absorb CO_2 during their growth phase and can be accounted for as negative emissions. Our PCF methodology is in accordance with ISO 14067 and has been independently verified by TÜV.

It is further supported by the mass-balance approach, widely used in the chemical industry. It tracks the proportion of bio-based material in a mixed production process and ensures that an equivalent amount is assigned to specific products, such as PROX. In this way, renewable inputs can be used efficiently at scale while still transparently reflecting their impact on the product's carbon footprint.

From concept to reality:
Amiblu PROX launched in Valencia

In the very first PROX pipe installation, low-carbon GRP pipes replaced ageing infrastructure at the La Presa de Manises water treatment plant, achieving a 40 % CO_2 reduction.

In 2025, the first Amiblu PROX pipes were installed at the La Presa de Manises drinking water treatment plant in Valencia in collaboration with Spain's leading water management company Global Omnium. It was Global Omnium's strong sustainability commitment that ultimately transformed the concept of PROX into a real-world reference.

The La Presa de Manises water treatment plant required the replacement and improvement of its drinking water outlet collectors. To enhance sustainability and long-term performance, traditional materials such as steel and concrete were replaced with glass-reinforced plastic (GRP) pipes. Building on years of successful GRP installation, Global Omnium aimed to further reduce the carbon footprint of its infrastructure with a corrosion-free, durable, and low-carbon pipe system – without compromising durability or mechanical performance.

Amiblu provided the solution: 460 metres of large-diameter PROX pipes DN 1500 to DN 2000 were custom-produced at the net-zero Amiblu manufacturing plant in Spain. The pipes were installed at the La Presa de Manises site underground to transport treated drinking water to storage tanks and distribution systems, replacing ageing infrastructure. After only two months, the installation was completed.

The project successfully met all technical and environmental objectives, achieving a 40 % reduction in CO_2 emissions compared to standard GRP pipes, while maintaining the same long service life and mechanical reliability.

This reference installation validated years of research, process optimisation, and close collaboration, and clearly demonstrates how cooperation between a technology pioneer and a sustainability-driven utility can accelerate innovation toward low-carbon water infrastructure.

First Amiblu PROX pipes installed in Italy for flood protection

The Risalita canal upgrade in Emilia-Romagna demonstrates how next-generation GRP solutions support climate-resilient water infrastructure.

Amiblu PROX has taken its first step into the Italian market with a reference project on the Risalita canal in Campegine and Castelnovo Sotto, in the Emilia-Romagna region. Commissioned by the Consorzio di Bonifica dell'Emilia Centrale, the project is part of a broader effort to improve stormwater management and reduce flood risk.

The works focused on reshaping and strengthening the canal banks, upgrading the irrigation network, and building the new Morana Diversion – a hydraulic structure that redirects and regulates stormwater and irrigation flows from the Risalita canal to reduce flood risk and improve water management.

As part of this intervention, around 1,500 metres of DN 1000 Amiblu PROX pipes were installed in open trench, providing the strength and reliability needed for large-diameter stormwater applications.

The project was funded through the NextGenerationEU programme, which supports measures for flood protection and hydrogeological risk reduction. Construction started on 25 August 2025 and was completed by 6 September.

PROX combines the well-known performance of GRP pipes with a significantly lower environmental footprint, achieved through smarter material use and efficient production, as well as optimised logistics. For an EU-funded project focused on resilience and sustainability, this balance really matters.

The successful installation on the Risalita canal sets a strong reference and shows how next-generation GRP solutions can support Italy's move toward more climate-resilient, future-ready water infrastructure.

Investment in **tomorrow, today**

Amiblu PROX isn't just a pipe – it's a future-proof solution for your most ambitious projects. Invest in products that keep you compliant and make a real environmental impact.

Request your project-specific PROX solution here:
info@amiblu.com

Amiblu | PROX

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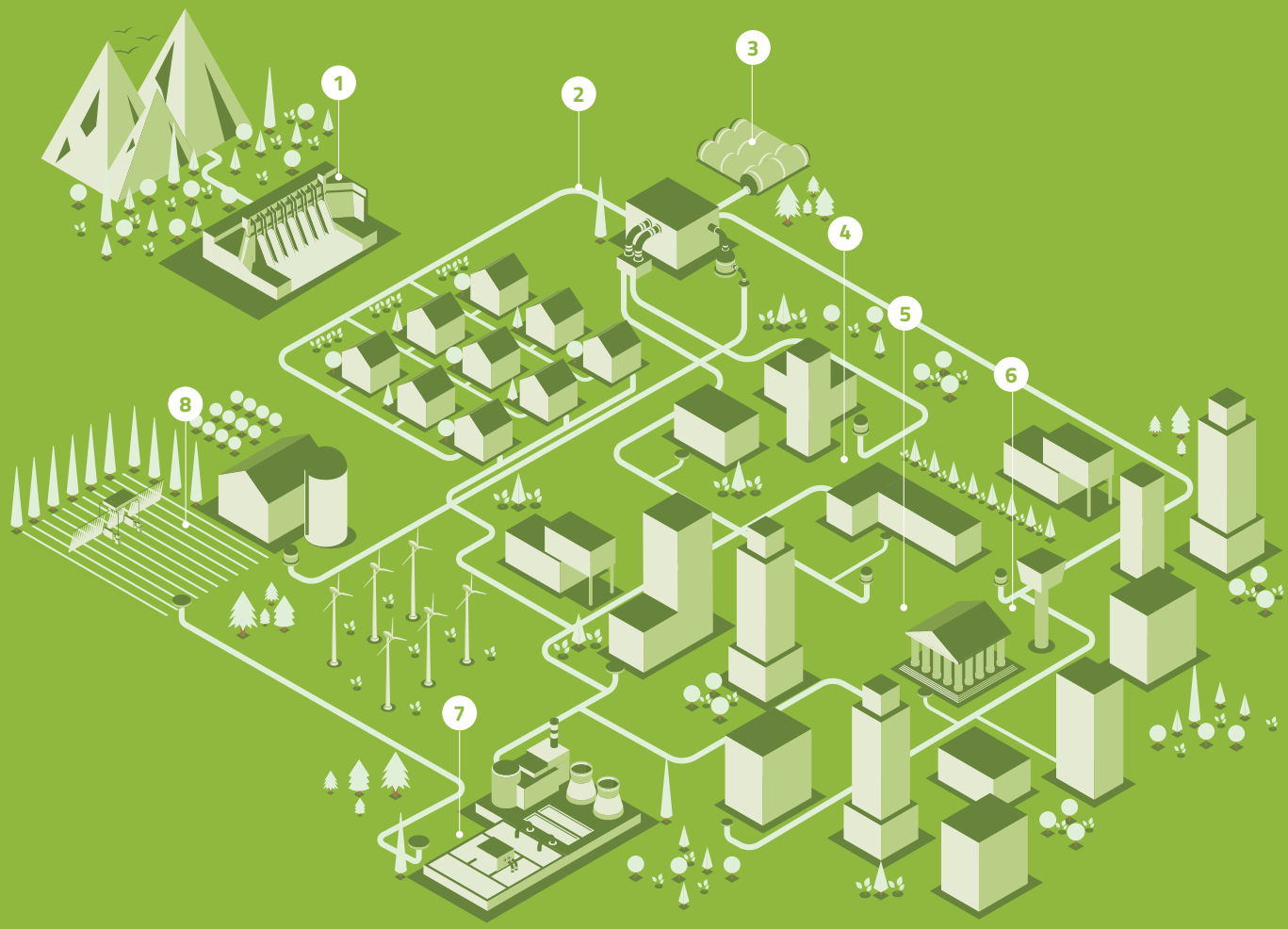

Amiblu Holding GmbH
www.amiblu.com | +43 463 48 24 24 | info@amiblu.com