

eBook

# Building the Future:

## Circular Solutions for Sustainable Construction



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# From Waste to Value:

## Driving sustainability in building and infrastructure through the circular economy

**Construction faces a big challenge: meeting the rising demand for housing and infrastructure, while cutting carbon emissions and protecting natural resources. Circular materials offer a smart solution - turning waste into high-quality products that help the industry build sustainably, without compromise.**

To achieve this balance, construction decision makers must minimize carbon emissions, resource consumption and waste by [prioritizing sustainable materials and processes](#) - all while meeting economic and regulatory pressures.

Globally, the sustainability imperative is clear. As resources become increasingly scarce and climate change accelerates, it's vital to evolve the way we build - creating a circular economy that avoids traditional "take-make-waste" approaches. Adopting circularity across construction offers tangible solutions for a more sustainable way of building.

At Wavin, we actively support circularity and integrate circular economy principles into our operations to help shape sustainable urban development.

Our goal is to make circularity a standard part of every construction project. In this eBook, we share facts, strategies and practical tips to help building and infrastructure professionals, like you, turn circular thinking into real action - and create climate-resilient projects for the future.



# Life cycle analysis: The foundation of a circular economy

**The circular economy is all about keeping materials in use, instead of letting them go to waste.**

At Wavin, we collect used products — like PVC and PP pipes — and give them a second life. Through advanced sorting, cleaning and processing, we turn these recycled materials into new, high-quality products that perform just like those made from virgin materials. This way, valuable resources stay in the loop, supporting a more sustainable way of building.

## Take Back Service

Our [Take Back service](#) is a key facilitator in this process, enabling contractors, plumbers and demolition companies to get plastic waste returned to Wavin factories.



## Circular products

[Circular products](#) can significantly reduce carbon footprints on construction projects because they use lower levels of raw materials. Depending on the materials and recycling processes involved, specifying circular products can reduce carbon emissions by up to **80%**.

Sustainability gains like these don't just safeguard the planet; they're also a business boost for construction companies facing tender processes, growing public expectations and changing regulations that increasingly demand a smaller carbon footprint.

## Life Cycle Analyses (LCAs)

[Life Cycle Analyses \(LCAs\)](#) are becoming standard practice for construction worldwide to qualify and prove these environmental benefits. LCAs evaluate the environmental impact of a product from sourcing to end-of-life, encompassing sourcing, production, installation and end-of-life phases to analyze environmental impact across the entire life cycle. This gives companies and project partners a complete picture of a product's environmental impact - from production to end-of-life - helping them make more sustainable choices.

## Successfully embracing the circular economy

"Successfully embracing the circular economy requires conducting comprehensive life cycle analyses - vital steps towards a sustainable future. By transforming waste into valuable resources, circular materials are revolutionizing the construction sector and paving the way for a new standard in the production of our products for infrastructure and building sectors.

Through the controlled loop of circular materials, we can minimize waste and reduce reliance on new raw materials, thereby achieving a significant reduction in carbon footprint. Life cycle analyses provide the scientific evidence needed to understand and improve the environmental impact of products, highlighting the significant advantages of circular materials, especially in comparison to alternatives like concrete, clay or metals."



**Ronald Bal,**  
Manager of Global  
Circular Economy at  
Wavin (an Orbia business)



# Environmental Product Declarations

**Environmental Product Declarations (EPDs)** are another essential piece of equipment in the construction industry's sustainability toolbox.

EPDs help developers and specifiers advance sustainability goals by giving clear information about products' levels of embodied carbon. Based on the information in an LCA, an EPD is a publicly shareable, independently verified and registered document that communicates transparent, comparable information about the environmental impact of a product.

As such, they help construction decision-makers to choose products with a lower climate footprint, enhancing the sustainability credentials of their builds.

***"EPDs are credible and reliable because they use a consistent, science-based measurement and always include third-party verification."***



**Jan van Rompay**  
Global Sustainability Director,  
Wavin (an Orbia business)



**Circular materials are not a compromise. They are the future standard.**

Contact your Wavin representative to discover how circular solutions can boost your next project.



# Circular materials with zero compromise on quality



We ensure the highest performance standards in pipe and fittings systems we manufacture using recycled or bio-based materials.

Recycled. Reliable.  
Ready for your next project.

For over 70 years, Wavin has been delivering the highest-quality plumbing systems worldwide. Our reputation is built on excellence, and we're committed to upholding these standards as we expand our portfolio of circular products.

## Circularity must never come at the expense of quality

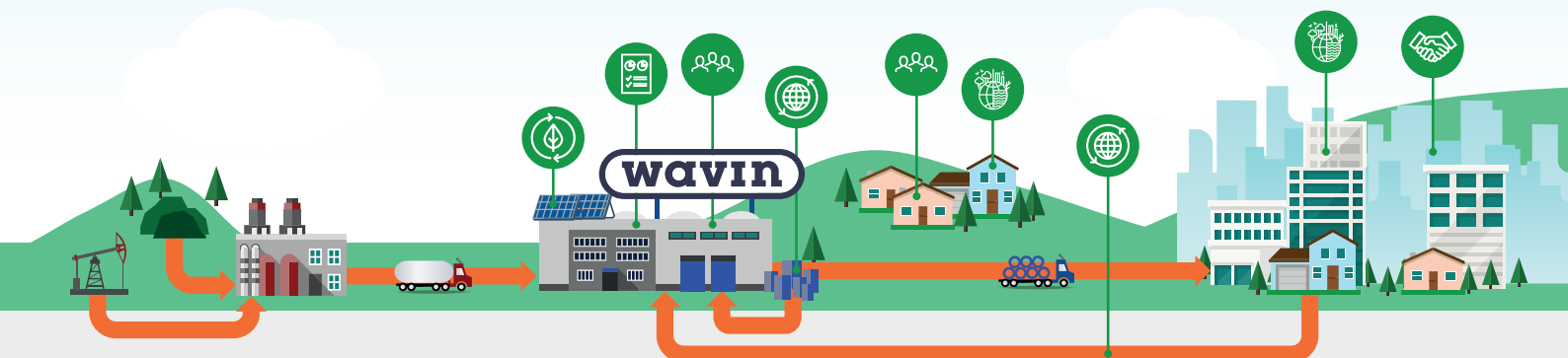
We draw on our **30 years of expertise in recycling** to enable our circular materials to meet the same high performance standards as virgin plastics. This involves ensuring that the recycled materials we use have been meticulously sorted in mixed streams and have undergone extensive testing and precise lab analysis. They then go through the most advanced shredding, washing and separation processes available. Once delivered to us, they're then subject to rigorous testing against strict specifications.

These procedures guarantee the consistent quality of our raw materials, ensuring they meet industry standards such as EN 13476-2 for pipes. This standard encompasses key performance indicators, including internal pressure strength, thermal durability, circumferential elasticity and impact resistance.

Thanks to our advanced recycling process, the materials we reuse meet the same high standards as virgin plastics — but with a much smaller carbon footprint. Start choosing circular products today and take a confident step towards more sustainable building.



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# Circular building & infrastructure systems for the future

Our circular products are built to last - you don't have to compromise on performance. They match virgin plastics in quality and durability - many even last over 100 years. That means you can rely on them for long-lasting, sustainable projects.

Our innovations include products made from 100% certified recycled materials, such as Tegra Road Gullies, the AquaCell 400 and our new [Q-Bic Plus LC](#) infiltration and attenuation units. These undergo comprehensive testing to ensure durability and deliver a lifespan of over 50 years.

Similarly, our PVC-U sewer pipes contain at least 40% recycled content, and our rPVC pipes are made with 50% recycled PVC. Compared to traditional alternatives, this reduces CO<sub>2e</sub> emissions by 384kg per 100m of 200mm diameter pipe.

Alongside these recycled solutions, [our circular solutions portfolio also includes a range of products created using bio-based polymers](#). Certified as fulfilling International Sustainability and Carbon Certification (ISCC) standards, these bio-based solutions are manufactured using renewable materials derived from the waste streams of vegetable oils.

Some examples include Wavin Apollo PVC (Bi-Ax) drinking water pipes and the Wavin Ventiza air distribution system, both

of which are highly durable and created using manufacturing processes with significantly lower CO<sub>2e</sub> emissions than traditional methods.

When you choose circular materials - like our recycled and bio-based solutions - you significantly lower the embodied carbon of your projects. You also reduce the need for new raw materials, help conserve natural resources, and cut carbon emissions. Every project becomes a step towards a more sustainable future.

This is a powerful step towards supporting a closed-loop economy and addressing climate change challenges without compromising the quality and longevity of new infrastructure and housing.

**Contact Wavin to discover how circular solutions can boost your next project.**



# Using circular products to meet UN and EU sustainability goals

**Construction firms globally are under increasing pressure from governments, citizens and international organizations to drive down carbon emissions and dial-up sustainability.**

The UN Sustainability Development Goals are a strong example of this pressure to change. They provide universal guidelines for businesses and individuals to achieve a sustainable future.

All 193 member states of the UN have adopted this agenda that includes sustainable objectives such as:

- ▶ To ensure access to water and sanitation for all through sustainable management of water resources (SDG 6)
- ▶ To build stable infrastructure, promote sustainable industrialization and foster innovation (SDG 9)
- ▶ To make cities and human settlements safe, stable, sustainable and inclusive (SDG 11)
- ▶ To ensure sustainable consumption and production patterns (SDG 12)
- ▶ To take urgent action to address climate change and its impacts (SDG 13)



Similarly, the European Union's Green Deal aims to implement a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050. The European Green Deal and its key component, the Circular Economy Action Plan, are comprehensive EU initiatives designed to reduce waste, elevate recyclability, boost recycling rates and establish sustainable design as standard in member states.

It's vital that all construction professionals work towards these important goals. Understandably, the process of achieving a fully circular industry can seem overwhelming. The most effective way forward is to take incremental steps towards building a strong, sustainable foundation for the industry.

Every product on every project represents an opportunity to make a sustainable change, and these changes add up. By choosing circular, recycled and bio-based products, the construction industry will create a meaningful trajectory towards sustainability.

We're constantly expanding our portfolio of circular products with new solutions. These innovations balance environmental responsibility with exceptional performance and long-term value, supporting UN and EU sustainability goals and high-quality project delivery.

**Jan van Rompay**  
Global Sustainability Director,  
Wavin (an Orbia business)





# How Wavin is driving sustainability

## Sustainable solutions



**Safe and efficient water supply**  
We improve the distribution of clean drinking water from source to tap.



**Better sanitation and hygiene**  
We future-proof wastewater transport and make sanitation accessible to everyone.



**Climate resilience cities**  
We use climate resilience solutions to build liveable and loveable cities.



**Better building performance**  
We design, build and use comfortable living environments in the most efficient way.

At Wavin, we offer product-specific verified EPDs for our European in-house manufactured products, and a selected portfolio in Latin America.

## Circular economy

**Low-carbon products & services using circular & biobased materials, with collection & recycling.**

**Goal:**  
Global usage of circular material to 70 kton in 2030 as part of our CO2 emission reduction plans.

**Status 2024:**  
■■■■■

**Goal:**  
Further growing the recyclability of our products to 90% by 2025.

**Status 2024:**  
■■■■■



Check with your account manager for the local availability of products from circular or biobased materials.

## Environmental impact

**Reduce the environmental footprint of our operations.**

**Goal:**  
Reduce Scope 1 & 2 emissions (as defined by the Greenhouse Gas (GHG) Protocol) with 47% by 2030 (versus 2019) and reach carbon net zero by 2050.

**Status 2024:**  
■■■■■



63% reduction already achieved by 2024!

**Goal:**  
Achieve Zero Waste To Landfill (ZWTL) by 2025.

**Status 2024:**  
■■■■■

In our EMEA operations we operate on 100% renewable electricity, and on a global scale we've achieved 71% renewable energy usage.

## Social inclusion

**Help improve human societies around the world.**

**Goal:**  
Create a positive impact on local communities, through:  
• WASH (water, sanitation, and hygiene) projects  
• Local community projects and (product) donations  
• Volunteering & building skills

**Status 2024:**  
• WASH projects: **27**  
• Community projects: **17**  
• Volunteering: **2,743** Orbia B&I colleagues volunteered in **109** activities globally, totaling **6,653** hours.



In 2024, approx. **45,000** people benefited from our social inclusion projects.

unicef

Every Wavin colleague worldwide can dedicate up to 10 working hours annually to volunteer projects.



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## Responsible business

Operating in line with the highest ethical standards, accountability, responsibility and transparency.

Member of  
**Dow Jones Sustainability Indices**  
Powered by the S&P Global CSI  
DJSI MILA Since 2019

**FTSE4Good**  
Since 2015

Silver medal by Ecovadis

S&P/BMV Total Mexico ESG Index Since 2012

In 2024, the CDP recalibrated Orbia's Climate score from B to A- and its Water score from B- to B.

ESG Rating upgraded to BBB

ESG Risk Rating of 18.1 (Low Risk)



# Building a circular future together

To build a truly sustainable future, we need to rethink how we use materials - we need you to keep materials in the loop and reduce the need for new raw resources wherever possible. That's the power of the circular economy.



Indoor Climate Solutions



Hot & Cold Water Solutions



Soil & Waste Water Solutions



Urban Climate Resilience



Infrastructure Solutions

**The construction industry stands at a turning point. Ready to lower your carbon footprint? Contact Wavin to discover how circular products can give your next project a sustainable edge.**

At Wavin, we'll continue expanding our circular portfolio, equipping you with the products you need to close the loop and build a secure future for generations to come.

Take a look at our dedicated [webpage](#) to learn more about our future-proof solutions and how they can help you achieve a net positive business impact.



# Discover our broad portfolio at wavin.com

- Drinking water distribution
- Waste water drainage
- Indoor climate solutions
- Urban climate resilience solutions



Wavin is part of Orbia, a community of companies working together to tackle some of the world's most complex challenges. We are bound by a common purpose: To Advance Life Around the World.

## Building & Infrastructure



Orbia's Building and Infrastructure business Wavin is an innovative solutions provider for the global building and infrastructure industry. Backed by more than 60 years of product development experience, Wavin is advancing life around the world by building healthy, sustainable environments for global citizens. Whether it's to improve the distribution of clean drinking water, to make sanitation accessible for everyone, to create climate resilient cities, or to design comfortable living spaces, Wavin collaborates with municipal leaders, engineers, contractors, and installers to help future-proof communities, buildings and homes. Wavin has 12,000+ employees around 65 production sites worldwide, serving over 80 countries through a global sales and distribution network.

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