

# URBITAL<sup>®</sup>

Ductile iron pipes system  
for treated wastewater reuse



THE SOLUTION FOR  
THE NEW WATER REUSE  
MARKET

A SAFE PATH FOR WATER

# Optimising a precious resource: water



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## SAINT-GOBAIN PAM CANALISATION, SERVING WATER SUSTAINABLY

As a designer and manufacturer of pipes systems, Saint-Gobain PAM Canalisation offers solutions that respect water resource and those who mobilize it. To guide its actions in the most responsible way possible, PAM draws on a number of tangible values and pursues concrete goals shared with the Saint-Gobain Group:



These goals reflect the United Nations' Sustainable Development Goals.

# URBITAL®

## THE SUSTAINABLE RESPONSE IN DUCTILE IRON TO THE NEW WATER REUSE CONTEXT



### DID YOU KNOW?

The European regulation of 5 June 2020 aims to promote wastewater reuse for irrigation by harmonising application rules at European level.

"We could potentially reuse 6.6 billion cubic metres of water by 2025, compared to the current 1.1 billion cubic metres per year."\*

*\* European Parliament press release of 13 May 2020.*



### Water reuse

As a consequence of climate change, water scarcity is forcing us to rethink how we use this resource. Reuse of treated wastewater is one way of reducing pressure on water.

This type of water can serve as an alternative to the withdrawal of water from the environment or the use of drinking water for agricultural irrigation or the watering of green spaces.

The **European authorities**, like the **United Nations through Sustainable Development Goal 6.3**, encourage and promote water reuse.

To transport this treated wastewater, Saint-Gobain PAM Canalisation puts forward URBITAL®, a dedicated range of ductile iron pipes and accessories. **Watertight, durable and reliable, the URBITAL® system** has already proved its worth in numerous agricultural and urban irrigation projects.

### Sustainable development

In addition, action plans have been drawn up by various organisations to **boost resilience in the face of climate change**, such as:

- The United Nations' Sustainable Development Goals, in particular Goal 13;
- The European Commission's Green Deal, aimed at achieving climate neutrality by 2050, one of the building blocks of which is the Circular Economy Action Plan (CEAP);

Saint-Gobain PAM Canalisation is committed to tackling these sustainable-development issues, which are taken into account throughout the life cycle of its products.

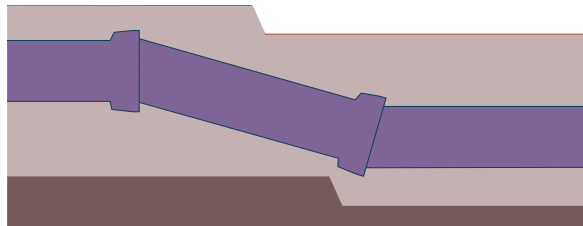
**URBITAL® pipes are watertight and durable, 100% recyclable and made from recycled material. They are made in accordance with processes designed to reduce the environmental footprint of production. The URBITAL® system strives to be virtuous throughout its life cycle.**

# THE BENEFITS OF URBITAL®

## A WATERTIGHT SYSTEM TO PRESERVE WATER RESOURCE

### Water is precious and expensive, so let's not waste a drop!

URBITAL® pipes are connected by **elastomer joint gaskets**. Subject to stringent tests, the joint gaskets guarantee the system's tightness under high pressure. Thanks to these gaskets, the flexibility of URBITAL® pipes enables the latter to withstand ground movements or environmental changes unaltered.



^ System flexibility

< Push-in laying

URBITAL® **push-in** pipes, which are easy to lay while the trench is being excavated, do not require any tools or specialist personnel. The watertightness is automatic: the joint gasket is compressed when the spigot end of the pipe is inserted into the socket of the laid pipe.



### DID YOU KNOW?

EU Member States are implementing a wide variety of measures to tackle water stress. For example, in France, "Plan Eau", the action plan for resilient and concerted water management, encourages the preservation of water resources. It consists of 53 concrete measures.



### A specific colour to stand out

Differentiating between drinking water, wastewater and recycled water networks is particularly difficult in an urban environment. URBITAL®, with its characteristic mauve colour, guarantees quick and reliable identification, leaving no room for doubt.

## A VIRTUOUS SYSTEM TO PROTECT OUR RESOURCES

The European Union's Circular Economy Action Plan is taken into account throughout the life cycle of Saint-Gobain PAM Canalisation's products.

### DID YOU KNOW?

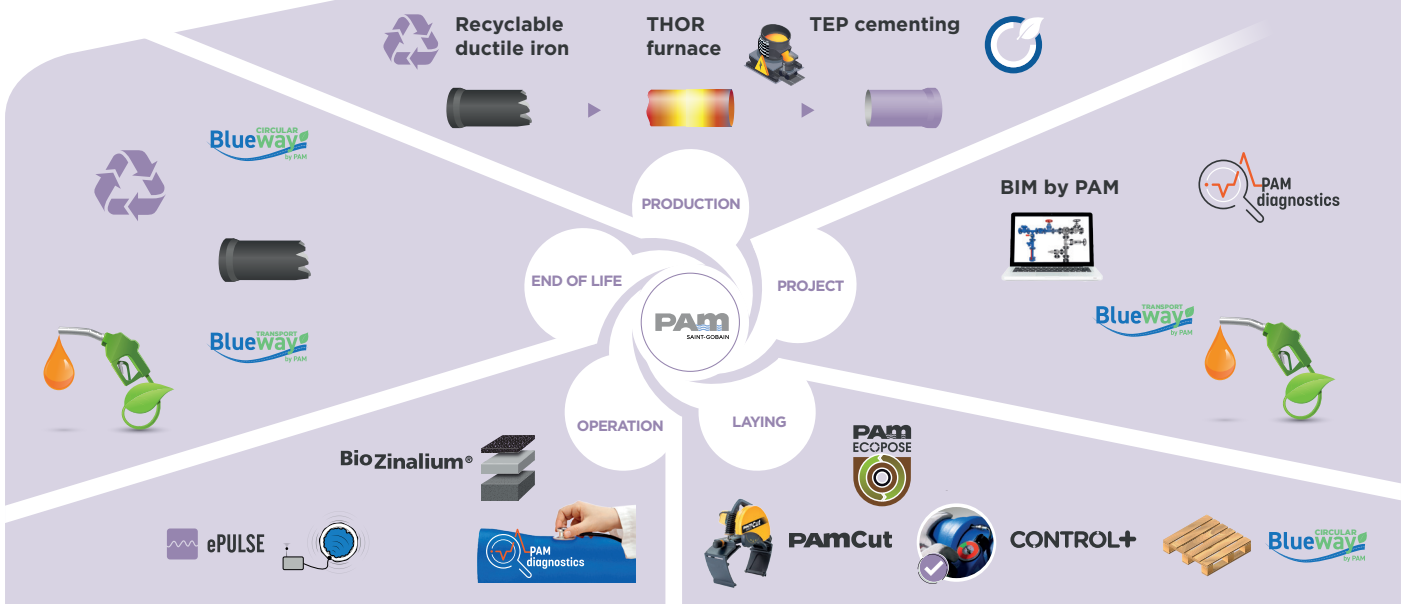
The European action plan for a circular economy is structured around a number of key areas, including product sustainability (design, sustainable production processes, etc.) and waste reduction. It also comprises measures to develop the creation of jobs and training in the circular economy\*.

\* <https://www.ecologie.gouv.fr/plan-daction-europeen-sur-leconomie-circulaire>



- **Eco-design;**
- **Designing of sustainable products;**
- **European manufacturing** that combines different processes to secure production and thereby guarantee the availability of products that provide access to water - an essential service;
- **Optimised transport solutions** to reduce CO<sub>2</sub> emissions: transport by train, ship or lorry powered by biofuels (Blueway Transport offer), etc.;
- **More environmentally-friendly installation of products:** "Ecopose" enables excavated soil to be reused to fill in the trench, thereby avoiding the use of new materials and lorries;
- **Virtuous management of packaging and cast iron offcuts/ removed pipes** under the "Blueway Circular" offer: reuse, relocation, recycling, etc.;
- **Optimised network asset management** thanks to asset management tools (PAM Diagnostics, e-Pulse);
- **Product recycling:** Saint-Gobain PAM Canalisation plants are authorised to recycle ductile iron pipes and other ferrous materials.

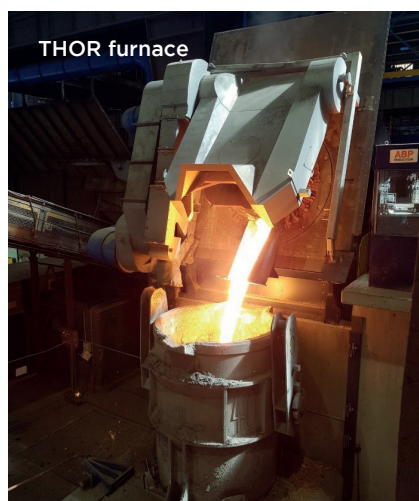
### PAM: FOR YOU AND FOR THE CIRCULAR ECONOMY



# SUSTAINABLE PRODUCTION TO HELP COMBAT CLIMATE CHANGE

Saint-Gobain PAM Canalisation uses the best eco-friendly technologies available to make URBITAL®.

For example, the new "Thor" furnace at the Pont-à-Mousson plant is powered by electricity and smelts recycled cast iron. This furnace, combined with methods such as "scan pipe", which ensures that the thickness of the pipes is consistent to optimise the use of materials, is helping to reduce PAM's environmental footprint.



Saint-Gobain PAM Canalisation's current technology and production in Europe make it possible to **reduce CO<sub>2</sub> emissions** to a third of the emissions attributable to other processes. In other words, the carbon footprint of **three PAM pipes** is roughly equivalent to that of a **single non-European pipe** produced with a technology other than the technologies recommended for environmental reasons.

## DID YOU KNOW?

The **European Green Deal** is a set of policy initiatives put forward by the European Commission with the overarching aim of making Europe climate neutral by 2050.



## **PAM LCA** **SAINT-GOBAIN** **Calculator** A transparent ecological footprint

Saint-Gobain PAM Canalisation carries out **the full life cycle assessment** with the LCA PAM Calculator, a tool designed to assess the environmental footprint. It analyses the life cycle (LCA) from production, transport, laying, and operation to recycling.

Compliant with the EN 14044 standard, this software package is used to assess a project's:

- Greenhouse gas emissions;
- Fossil fuel consumption;
- The volume of water extracted from the environment.



## RELIABILITY TO IMPROVE THE RATE OF RETURN

### Choosing URBITAL® means investing to spend less!

With the URBITAL® system, there is no need to worry about any deterioration or even interruption of service. The pipes play their role perfectly and do so over time. Experience shows that ductile iron pipes can last well over 100 years.

- Cast iron is a robust material that withstands high operating pressure and external mechanical stress;
- Coatings provide long-term protection against corrosion and/or the abrasiveness of fluids;
- The joints adapt to overpressure and allow the system to withstand ground movements undamaged.

Choosing URBITAL® also means lower pumping costs, which over the life of a network are considerably higher than the initial purchase cost.



Invest to spend less

The TCO PAM Calculator software package is designed **to assess the total cost of ownership**. It shows the investor's immediate costs and the operator's deferred costs.

The calculation method takes into account acquisition costs (pipes, laying, loans, etc.), operating costs and end-of-life costs (dismantling, recycling).

### DID YOU KNOW?

The eligibility criteria for the funding of water projects by various public authorities include a cost-benefit analysis.



# RANGE OF **URBITAL**<sup>®</sup> PRODUCTS AND SERVICES

## A COMPLETE RANGE OF PRODUCTS

The URBITAL<sup>®</sup> range includes pipes and fittings from DN 150 to DN 600.

### Main characteristics



DN mm	Lu (*) m	Class	e mm	ø DE mm	ø DI mm	P mm	Ø B mm	Weight kg/m	Reference
150	6.000	C40	4.5	169.7	173.4	100.5	220.8	22.054	SSB15Q60ADM
200	6.000	C40	4.7	221.6	225.2	106.5	275.1	30.122	SSB20Q60ADM
250	6.000	C40	5.5	273.0	276.8	105.5	328.6	42.147	SSB25Q60ADM
300	6.000	C40	6.2	324.9	328.8	107.5	385.3	55.351	SSB30F60ADM
350	6.000	C30	6.4	376.8	380.9	110.5	444.5	69.093	SSB35G60ADM
400	6.000	C30	6.5	427.7	431.9	112.5	494.6	79.655	SSB40G60ADM
450	6.000	C30	6.9	478.6	483.0	115.5	546.5	94.257	SSB45G60ADM
500	6.000	C30	7.5	530.5	535.0	117.5	600.9	111.150	SSB50G60ADM
600	6.000	C30	8.7	633.3	638.1	132.5	712.0	150.567	SSB60G60ADM

(\*) Unit length

### Pipe pressure performance

DN mm	PFA <sup>1</sup> bar	PMA <sup>2</sup> bar	PEA <sup>3</sup> bar
150	62	74	79
200	50	60	65
250	43	51	56
300	41	49	54
350	35	42	47
400	30	36	41
450	28	34	39
500	28	33	38
600	26	31	36

(1) PFA - Internal pressure, excluding water hammer, that a component can safely withstand continuously under steady-state hydraulic conditions.

(2) PMA - Maximum internal pressure, including water hammer, that a component can safely withstand in service.

(3) PEA - Maximum hydrostatic pressure that can be applied on site to a component of a newly laid pipeline.

For higher PFAs, please contact us.

**External coating**  
BioZinalium<sup>®</sup>. It consists of a layer of 85-15 Zinc-Aluminium alloy enriched with copper, covered with a layer of AQUACOAT acrylic paint (sealer) with an average thickness of 80 microns; the paint is mauve in colour.

**Internal lining**  
blast-furnace cement mortar.

**DID YOU KNOW?**

**UN Sustainable Development Goal 9.1** promotes the development of high-quality, reliable, sustainable and resilient infrastructure.

# RANGE OF **URBITAL**<sup>®</sup> PRODUCTS AND SERVICES



## SERVICES TO ENSURE THE SUCCESS OF YOUR PROJECTS

Saint-Gobain PAM Canalisation is committed to providing you with sustainable technical solutions and letting you benefit from constant innovation and the expertise of its specialists over the long term.

PAM is present at every stage of your project, including design, implementation, after-sales service and logistics:

- **Benchmark technical tools** to support decision-making: PAM provides you with powerful tools to help you make the best choices for your networks;
- **Assistance with your projects as from the design stage** through a team of specialists at your side;
- **Local sales teams** committed to ensuring the success of your projects: each order is monitored by a sales assistant who works alongside your sector manager. This team is your key partner for the success of your projects! ;
- **Local logistics** to respond to your emergencies.



### DID YOU KNOW?

Saint-Gobain PAM Canalisation's **Technocentre** - or research centre - has more than 100 employees. Its researchers (experts in metallurgy, materials, coatings and production processes) are working on future innovations.



# URBITAL<sup>®</sup> REFERENCES

## A FEW EXAMPLES OF PROJECTS CARRIED OUT WITH URBITAL<sup>®</sup>:

- Irrigation of Cap d'Agde international golf course (France);
- Irrigation of crops on the island of Malta;
- Irrigation of public parks and gardens in Rivas Vaciamadrid (Spain);
- Irrigation of golf courses in Andalusia;
- Irrigation of 17 parks in Madrid (300 ha);
- Irrigation of 2,700 ha of crops in the Viñuela- Axarquía area of Andalusia.



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