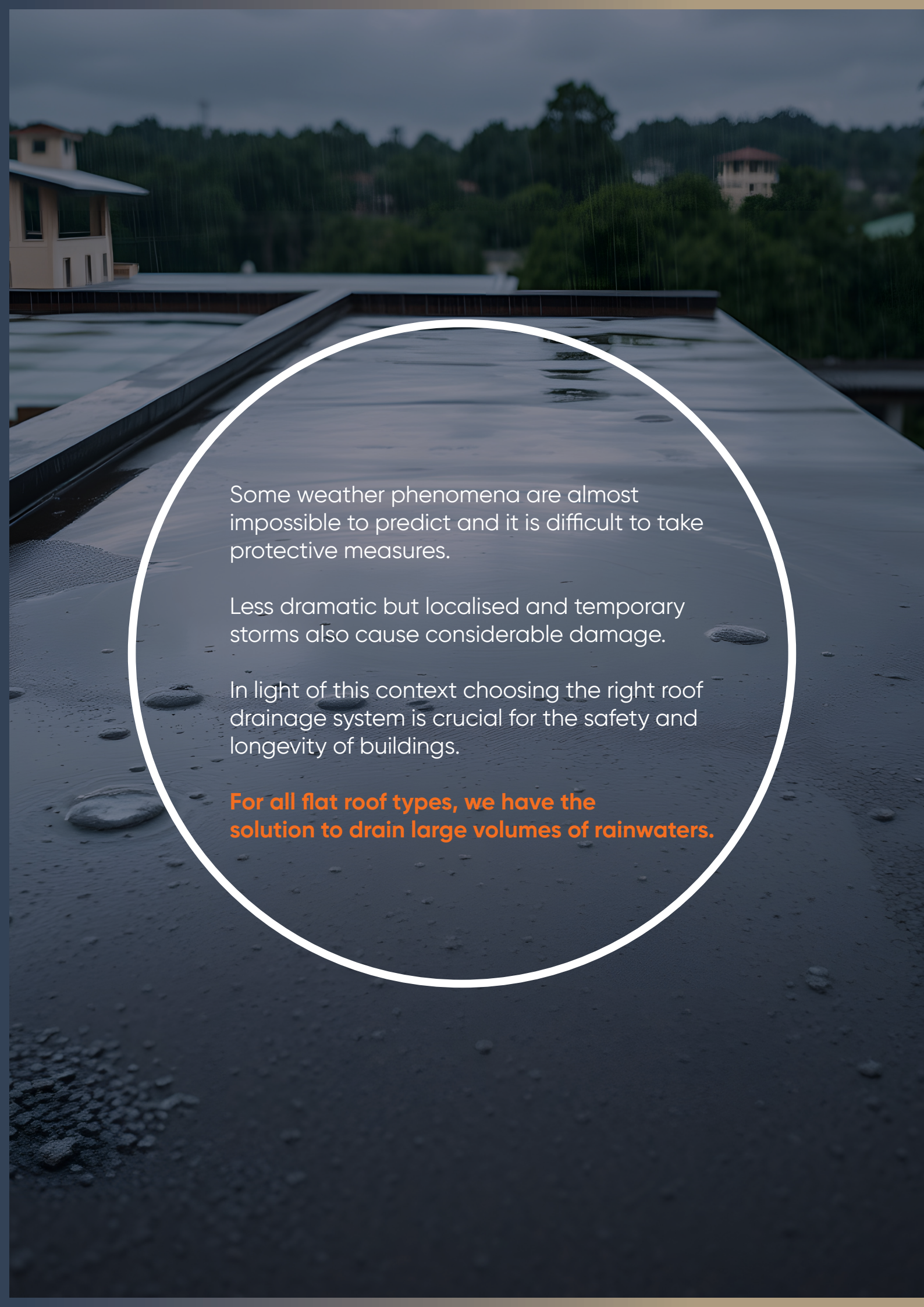




Siphonic system for roof drainage



Some weather phenomena are almost impossible to predict and it is difficult to take protective measures.

Less dramatic but localised and temporary storms also cause considerable damage.

In light of this context choosing the right roof drainage system is crucial for the safety and longevity of buildings.

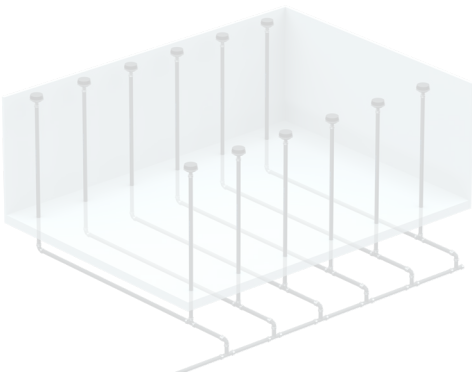
For all flat roof types, we have the solution to drain large volumes of rainwaters.



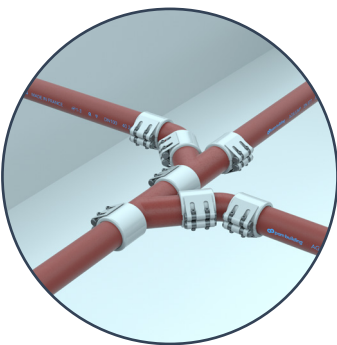
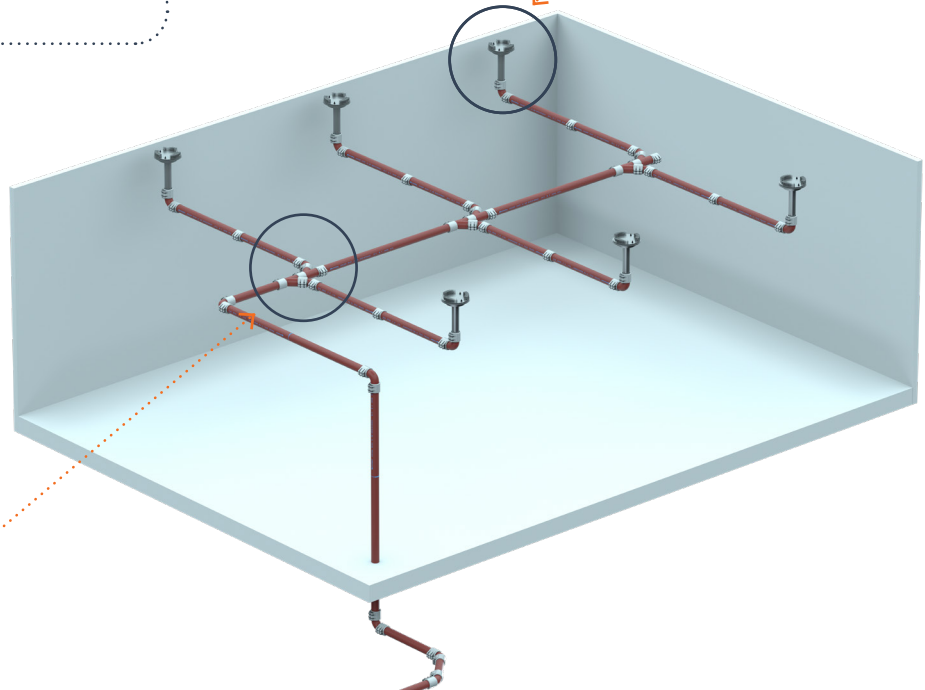
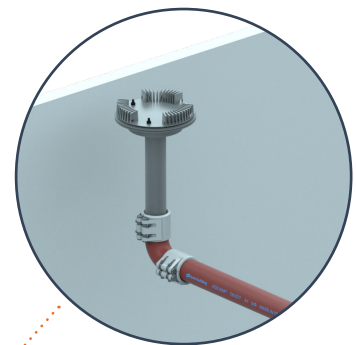
A smart system for flat roof drainage

The **epams**® siphonic roof drainage system is designed for the rapid evacuation of large volumes of water from flat roofs: gymnasiums, shopping centers, airports, and warehouses.

GRAVITY SYSTEM



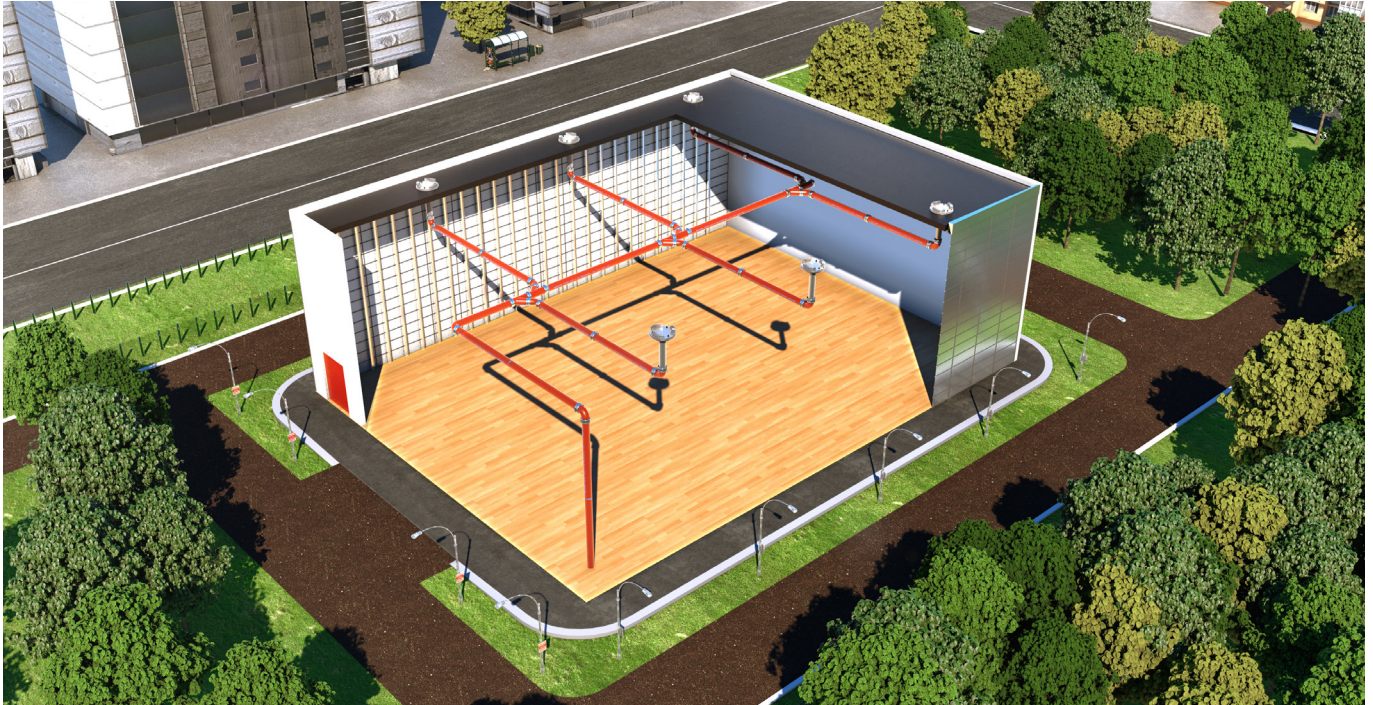
SIPHONIC SYSTEM



- ✓ High flow rate for large volumes of water
- ✓ Fewer downpipes vs. a gravity system
- ✓ Ideal for buildings that require efficient water drainage



Compact and streamlined network



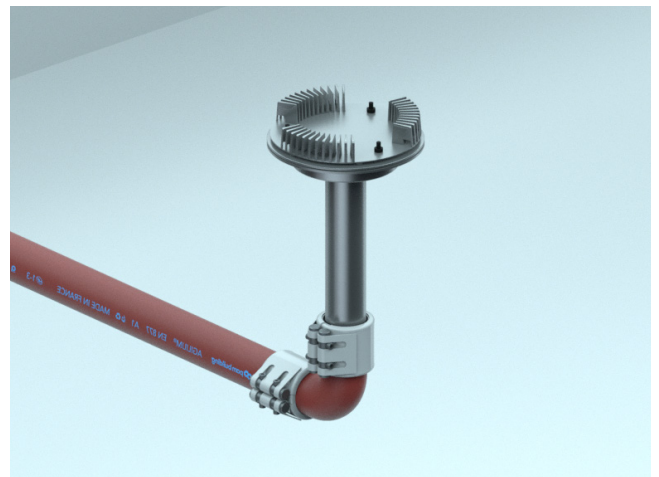
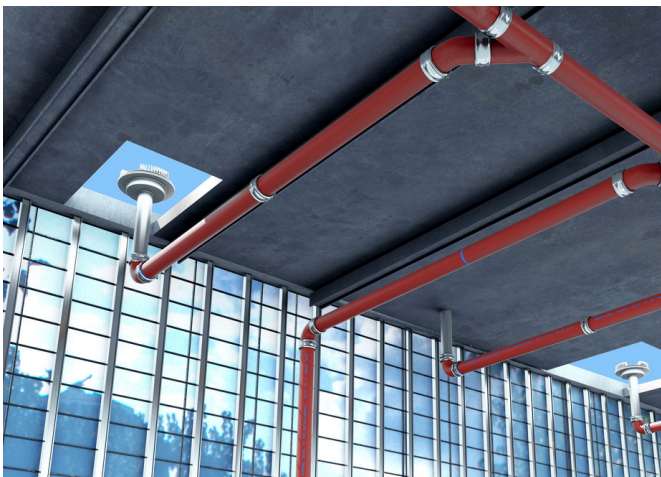
Fewer downpipes, more architectural freedom

epams[®] uses small-diameter pipes and requires fewer downpipes, freeing up internal space while maintaining high drainage efficiency. This low-profile design ensures optimal functionality without the bulk associated with traditional gravity systems.

Simplified Maintenance

Fewer outlets, shorter pipes, and reduced components translate to lower maintenance demands.

epams[®] minimizes the number of locations requiring upkeep, reducing costs and ensuring a longer-lasting system.





Increased drainage flow

Siphonic rainwater harvesting systems utilize the potential energy of the building's height of fall to create negative pressure in the pipework.

As the speed and flow rate increase, the volume of air entering the system decreases: this creates a suction effect that persists up to the outlet.

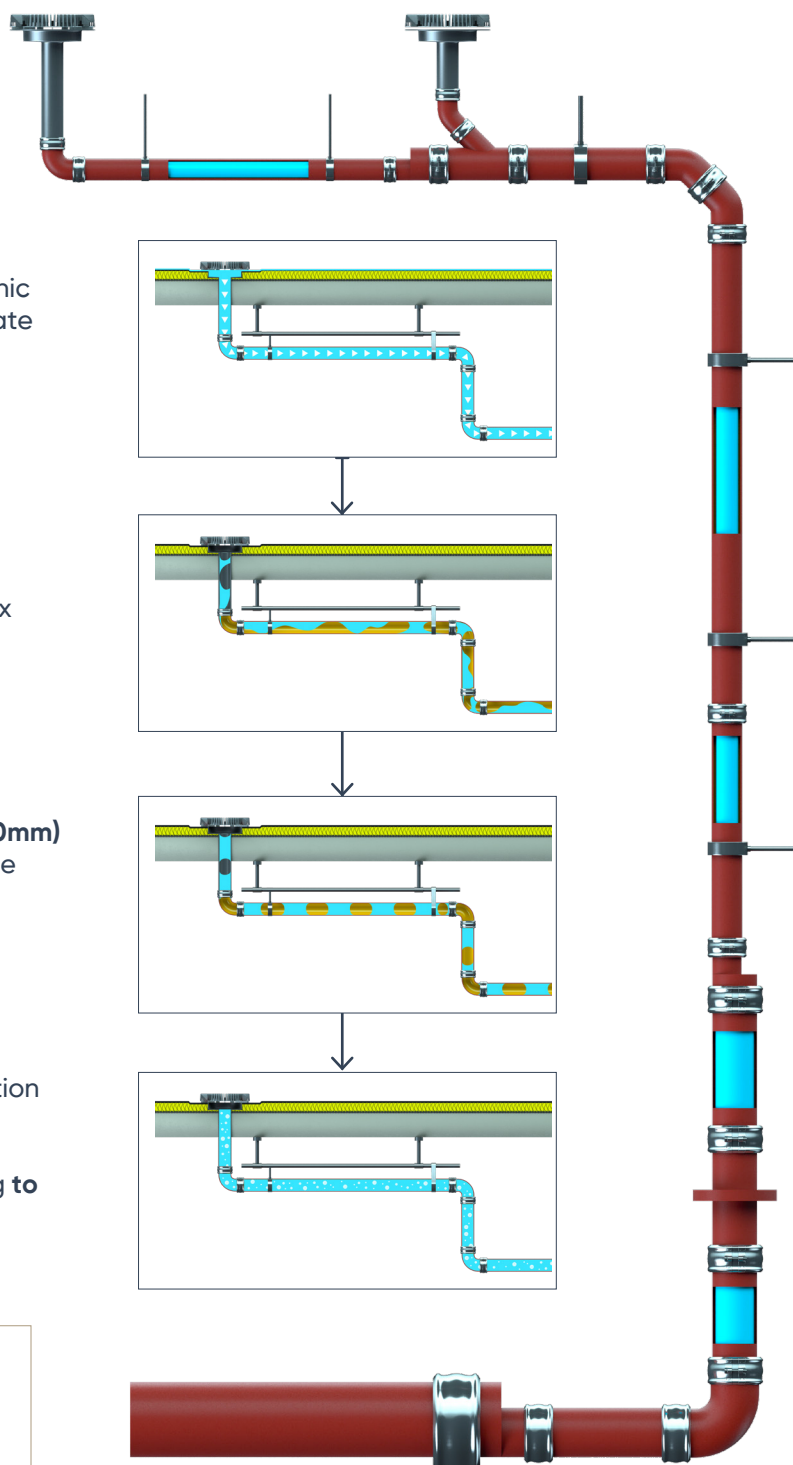
Once the air is no longer in the pipe, the siphonic system reaches its optimal capacity to evacuate the water.

In case of intense rainfall, the rainwater flows towards the outlet equipped with an anti-vortex mechanism.

When the grid is half covered by rainwater (**30mm**) the mechanism limits the entering of air into the pipe system and initiates negative pressure.

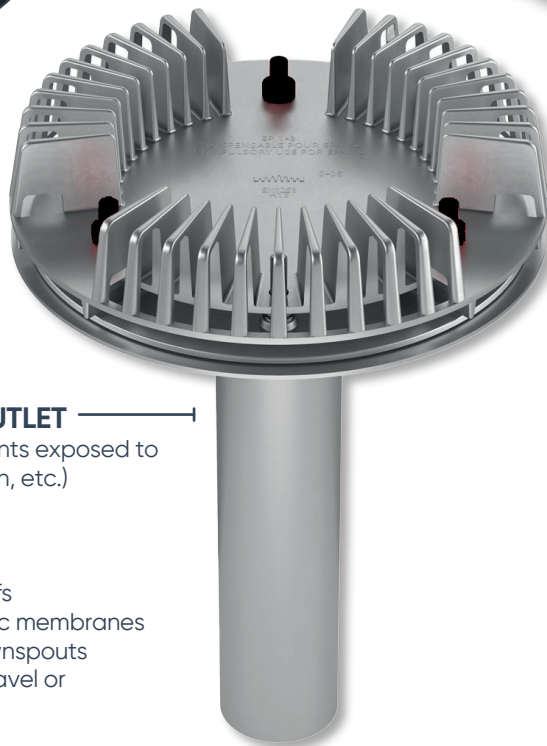
By exploiting the principle of energy conservation between different points in a network and the main collector at the lowest point, this system uses Bernoulli's theorem and energy balancing to **optimise flow**.

Technical note: it is mandatory to use grip collars or High Pressure Gripped couplings at all junctions between pipes, fittings and outlets.





The range

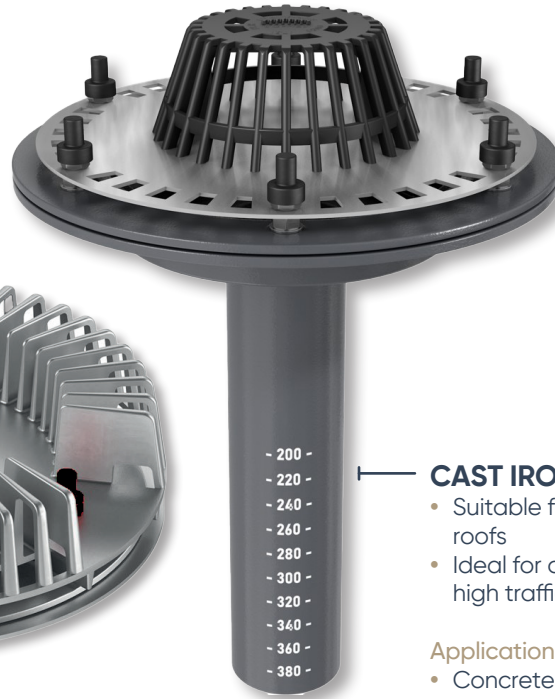


STAINLESS STEEL OUTLET

- Suitable for environments exposed to corrosion (sea, pollution, etc.)
- Ideal for green roofs

Application field:

- Concrete or metal roofs
- Flat roofs with synthetic membranes
- Metal gutters and downspouts
- Roofs protected by gravel or vegetation



CAST IRON OUTLET

- Suitable for all type of roofs
- Ideal for car parks and high traffic environment

Application field:

- Concrete or metal roofs
- Flat roofs with synthetic membranes
- Metal gutters and valleys
- Car park terraces

Certified performance

- EN 877: Cast iron pipes and fittings, their joints and accessories for the evacuation of water from buildings.
- EN 1253: Drains and siphons for buildings.
- EN 12056: Gravity drainage systems inside buildings.
- NF P 41-220 - DTU 60.2: Building works - cast iron fittings - sewage, rainwater, and sewage disposal - technical specifications.
- NF P 40-202 - DTU 60.11: Calculation rules for plumbing and rainwater drainage installations.

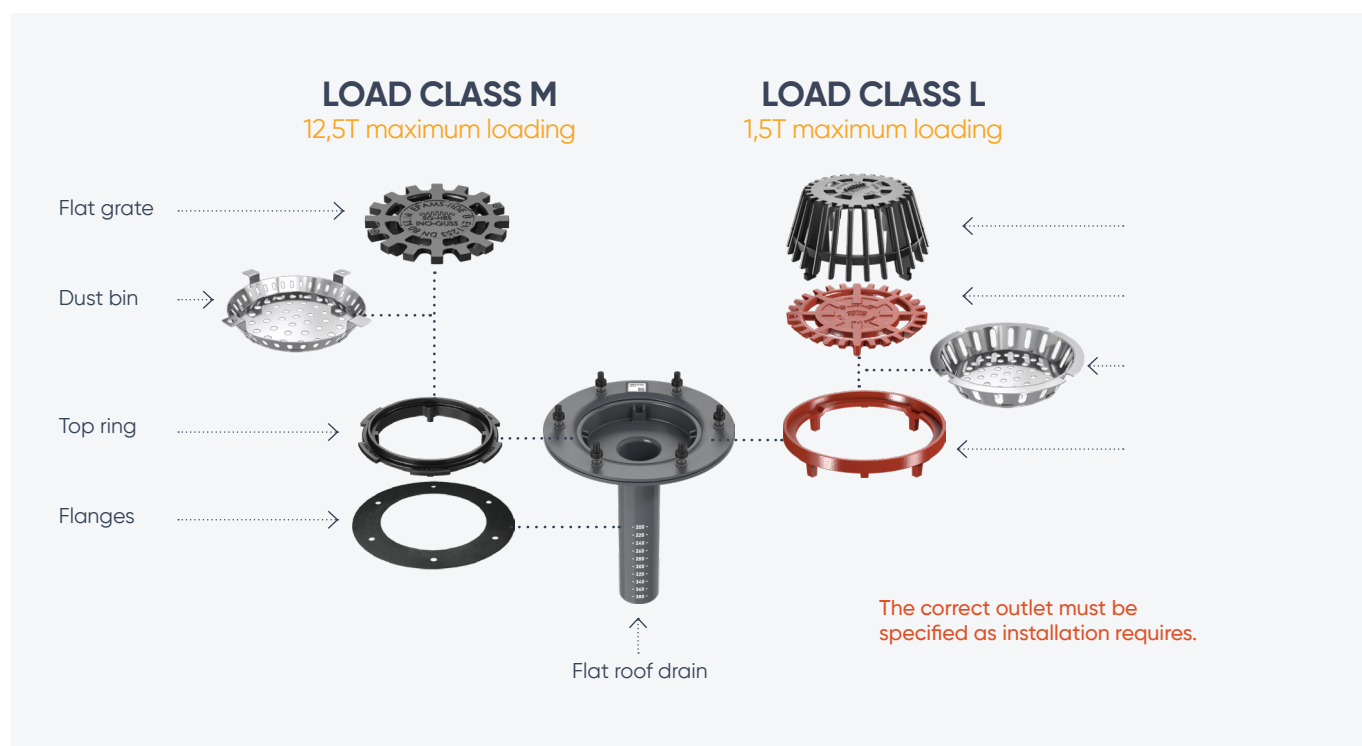
Easy maintenance & installation

- Ease of Installation: The system is composed of lightweight, small-section cast iron pipes that are easy to handle and assemble with couplings and claw clamps. This reduces installation time and labor costs.
- Reduced Maintenance Costs: Thanks to the reliability of our cast iron and the self-cleaning effect of high water flow speeds (up to 6 m/s), maintenance requirements are minimized. The integrated grating and anti-vortex mechanism allow for quick removal and reassembly, facilitating easy intervention and maintenance.

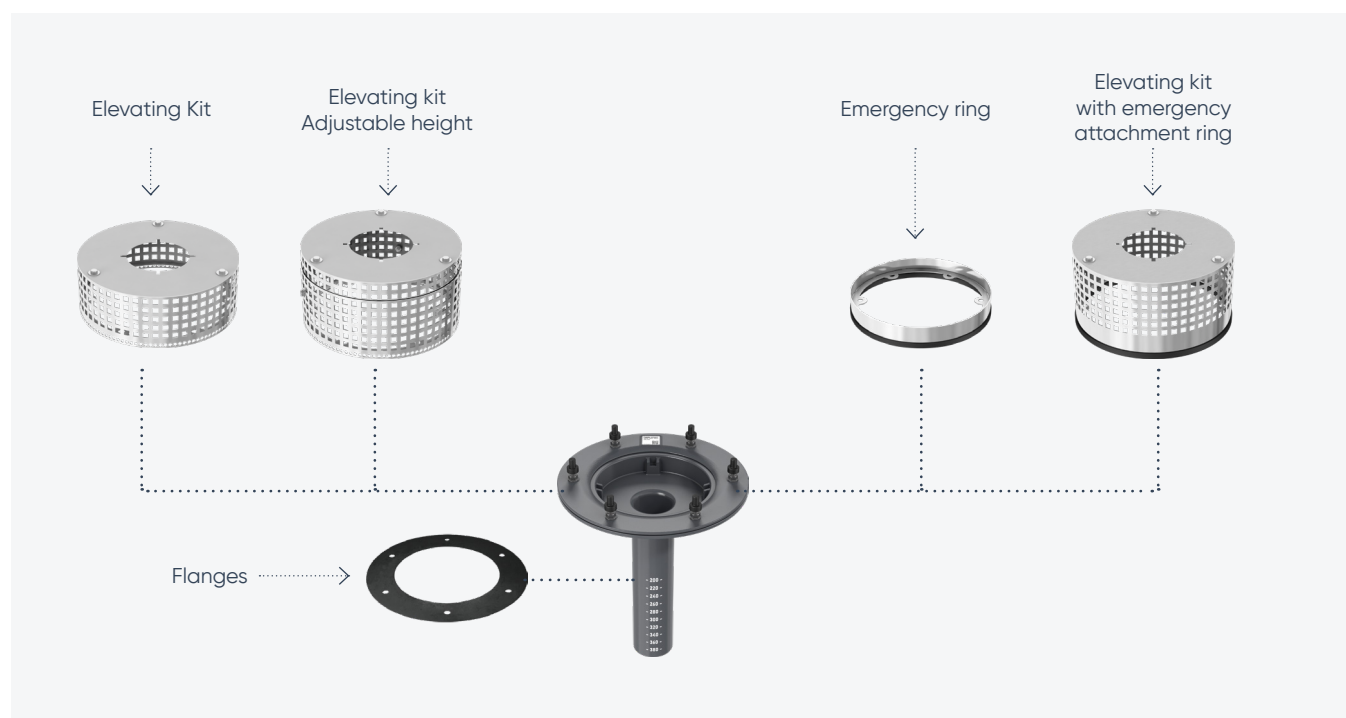


Examples of application

Cast iron roof drainage system for car parks

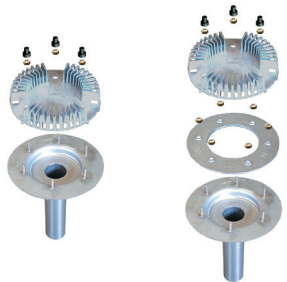


Green roofs and emergency installations





A complete range for all types of roofs

OUTLETS	ACCESSORIES	DESCRIPTION
 Cast iron Stainless steel		Outlet with steel plate. This roof outlet is used on all the roofs
 Cast iron Stainless steel		Outlet for flexible PVC membrane is used on non-accessible roofs and/or with equipment zones, and waterproofed by synthetic PVC-P membranes
 Cast iron Stainless steel		Outlet to be welded is especially designed to be welded (or brazed) in gutters or metal roof valleys.
 Cast iron		Outlet especially designed for parking areas, offering enhanced impact resistance to withstand heavy loads and frequent traffic.
 Cast iron Stainless steel		Outlet especially designed for installation in green roofs, ensuring efficient drainage and seamless integration with vegetated surfaces.



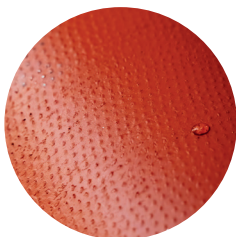
The Advantages of Cast iron

The **epams**® drainage system, made from cast iron, offers superior fire resistance, which is particularly crucial in high-rise buildings subject to stringent safety standards. Unlike plastic systems, cast iron is non-combustible, reducing the risk of flamespreading in the event of a fire and ensuring greater safety for occupants. This is a major advantage in high-density buildings, where fire safety is a priority.



Cast iron has natural sound-absorbing qualities

Reducing the noise associated with the passage of water through pipes. Compared with other materials, which are often noisier, the **epams**® system offers ideal acoustic comfort in residential or professional environments where noise can be a nuisance. This criterion can be decisive in sectors such as the hotel industry or top-of-the-range residential accommodation.



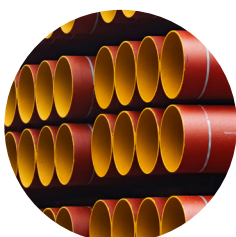
Durability and material resistance

Cast iron components in the **epams**® system are more resistant to impact and wear than plastic alternatives. Cast iron is a robust material, capable of withstanding high loads and pressures, as well as temperature variations, without deforming or deteriorating. This durability reduces the need for replacement or repair, lowering long-term maintenance costs.



Ease of installation, less maintenance

Cast iron is a 100% recyclable material. At the end of their life, cast iron components can be recovered and reused, contributing to a circular economy. This also meets the growing expectations for sustainable development in the construction sector, where reducing the carbon footprint has become a major issue.



Advantages specific to European regulations

Strict compliance with European standards (e.g. EN 877) ensures that **epams**® products meet the safety, strength and durability requirements expected by the market.



Case study

Decathlon warehouse, Tangier

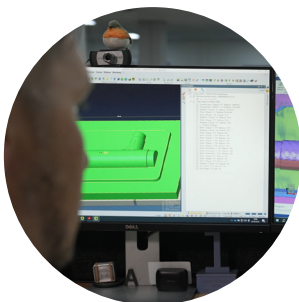


The DECATHLON Tangier Med logistics hub is strategically located.

- It includes a covered area of 20,000m² and an open area of 25,000 m².
- Built with an investment of over 100 million dirhams by TMSA to optimise large-scale logistics flows.
- Functions as a consolidation and distribution centre.
- Supplies 11 DECATHLON stores in Morocco.
- Handles deliveries from Tangier Med to 10 countries, solidifying its regional logistics importance.



OUR TECHNICAL TEAM IS AT YOUR SERVICE



You have a project to discharge rainwater on a flat roof and you want to quickly define the details and costs of the epams[®] installation?

Send us:

- Your drawings in DWG format (roof, levels, section views, etc.)
 - The general rainfall intensity of your country (in mm/hr or l/s.m).
- You will receive a response concerning the feasibility and an initial design study*.

tc@pambuilding.com • Tel: +33 (0)3 66 88 19 47

*Full studies are conditional upon the final order of the materials.



For 150 years, we have been designing, manufacturing and supplying high-quality drainage systems for residential and commercial buildings and engineering structures.

We work exclusively with cast iron, a noble and durable material, of which we are a specialist and leader.

As a leading manufacturer, we claim excellence in our processes, products and services.

As a responsible manufacturer, we are at the forefront of sustainable performance to help reduce the carbon footprint of the construction sector.

As an innovative manufacturer, we put all our creative audacity into developing new, more specific and more efficient technologies, to deliver better products for your future needs.

Over **400**
employees

Sales in more than
50 countries

+38 : our indicator
« Employee Net
Promoter » that
reflects the number of
staff willing to become
Ambassadors of the
company (on a scale of
-100 to +100)

2 manufacturing sites
for our products:

- Bayard sur Marne in France
- Telford in England

35%
female managers

1st business in the
cast iron industry to
have published a third-party
validated Environmental
Product Declaration (EPD)

1/3
internships and
work-study contracts
converted to full
employment contracts

Committed to reducing our impact on the environment



Our mission: the safety and durability of buildings

Our cast iron solutions and systems contribute to ensure the comfort, safety and durability of the most demanding residential and commercial buildings. Their characteristics allow them to contribute to HQE, BREEAM, LEED and other international environmental certifications.



Recycling of metal waste

Our products are made of 99% recycled materials (mainly scrap metal), which can be recycled indefinitely. Cast iron is a simple and sustainable material that allows a smart reuse of materials. Resistant, reliable and durable, cast iron has a bright future ahead of it. In 2021, we recycled the equivalent of 21,000 cars.



Our ambitious goals for 2028-2030

Reducing carbon emissions directly linked to the cast iron pipe manufacturing process: a project for a electric furnace, a low-carbon energy source in France, was opened in 2024 for commissioning by 2028-2030 at our Bayard-sur-Marne site. A key step in pursuing the company's ambitions in terms of circular economy and environmental responsibility



Customer service

Opening hours: 8.30am – 5.30pm (frenchtime)

Tel: +33 83 80 76 50/53/54

Fax: +33 3 83 80 76 57

Pam Building

130, Impasse du Frêne

54700 BOUXIERES-SOUS-FROIDMONT

www.pambuilding.com

Safe
& forever
circular