



PRACTICAL BY  
PRINCIPLES

**ashirvad**

by aliaxis

SIPHONIC  
ROOF DRAINAGE

**akasis**

ZERO STAGNATION  
ON FLAT ROOFS

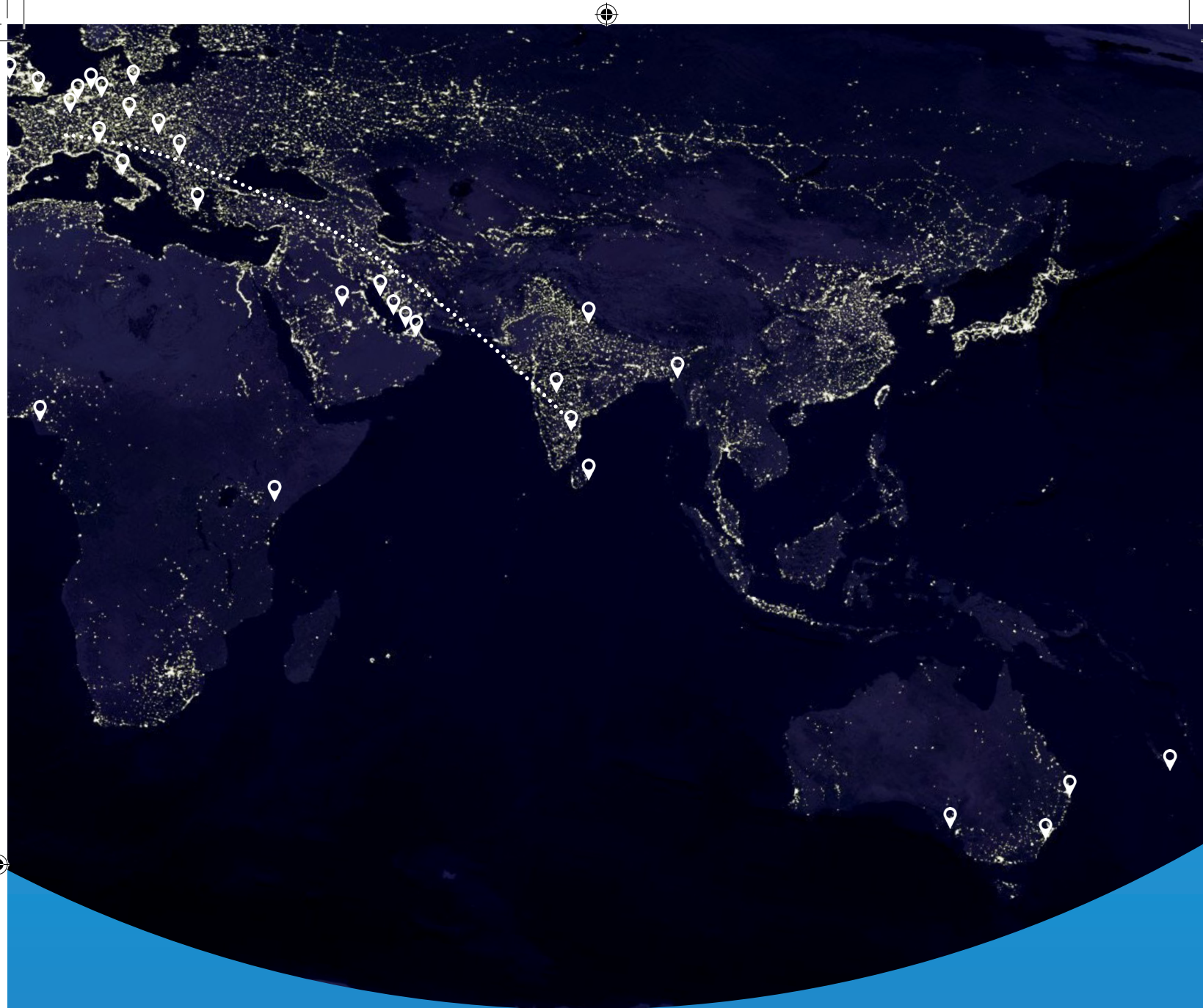


## Aliaxis

Aliaxis is a global leader in the manufacturing and distribution of advanced plastic piping systems. Comprised of more than 100 manufacturing and commercial businesses based in over 45 countries, we have a global workforce of 16,000 passionate individuals. With over 50 years of experience, extensive global resources and strong local brands, we offer a full portfolio of innovative systems for soil and waste, rainwater, water supply, energy and fire safety.

## Ashirvad

Empowering your water future at Ashirvad by Aliaxis, water is at the heart of everything we do. We are building on strong foundations and trust our teams to preserve this precious resource and enable access to clean water. Since 1998, we've championed quality and innovation in India's water management sector. Our mission is clear: to deliver smart solutions and cutting-edge technologies that safeguard this vital resource and provide access to clean safe water.



## Akasion

We are Akasion (pronounced “Aka-season”), the specialists in roof drainage with more than 50 years of production experience. A special name, and one presented with pride. It stands for a group of specialists that always strive for better. That approach the market in their own way. Faster, smarter, safer.

It is about drainage based on tried and tested systems, and to never just follow the common herd. It is about craftsmanship, taking responsibility and providing top quality products and projects.

Searching for innovation based on many years of experience. Improving systems and avoiding mistakes. The most valuable combination that a customer could wish for. Nothing is left to change.

For Ashirvad and Akasion it is always about the best system and solution.



# The roof drainage experts

## **Development and innovation**

At Akasison we have a proven history of more than 50 years of production experience. We pay attention to workmanship, and synthetics is in our blood. During these 50 years, we have always moved with the times, always improving; it is our principle. Akasison's innovation and development department is made up of small teams with an eye for functionality, fluid dynamics and quality. All of this is guided by input from clients so that we can continue to offer the highest quality and best value roof drainage solution.



## **Project design and engineering**

Your project is in safe hands with our project engineers. The Akasison engineering team has built up a wealth of experience in our field of expertise: siphonic roof drainage. Your immediate point of contact will provide you with a tailor-made design for the pipe layout in your project. After your approval, the design is converted into a quote that includes a list of materials, the hydraulic design, isometric drawings and an overview of all the relevant requirements.

## **Training and support**

A great deal of knowledge is involved in every step of our design and development process, right through to completion. Knowledge of fluid dynamics, legislation and regulations, the application of standards and our own procedures. But especially about how things work in practice. We offer training and support so that we can continue to lead the way in the market with our Akasison system. Everything has to be in good order on the roof.

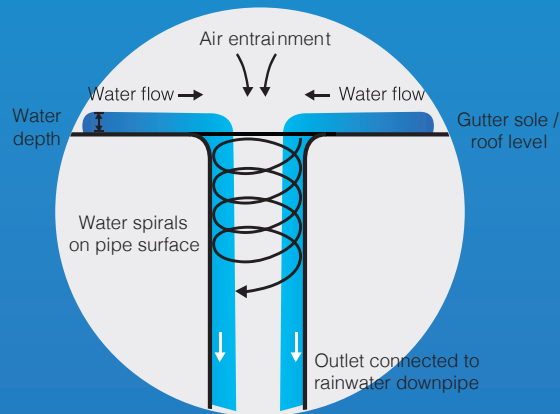
# Siphonics Explained

The Akasison siphonic system provides architects and hydraulic engineers maximum freedom when designing rainwater drainage. Siphonics design principles can be used on all building types where large volumes of water are to be removed efficiently and cost effectively.

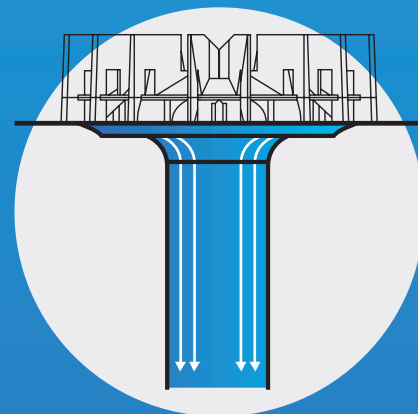
Akasison requires far fewer downpipes than traditional gravity systems. Specially designed roof outlets, located in gutters, or membrane system roof / deck areas are connected to a common collector pipe located at a high level within the building. The collector pipe is installed horizontally, without gradient and is typically of a smaller pipe diameter. When operating siphonically,

the pipe network flows full, without air and with a higher velocity than traditional gravity systems, so pipes can be smaller.

The horizontal collector pipe is routed to a convenient point in the building, such as a services riser. It then connects to a downpipe which is the engine room of the system. A full bore plug of water accelerates as it falls under gravity through the downpipe, creating a vacuum action which is used to efficiently and rapidly suck rainwater from the roof.



In a traditional drainage system, rainwater on a roof surface flows to the lowest point under gravity. A roof outlet at the gutter low point enables rainwater to connect via a downpipe to the underground drainage system. Both water and air are drawn in and travel through the downpipe in a spiral motion. The capacity of the roof outlet determines how much water can enter the downpipe.



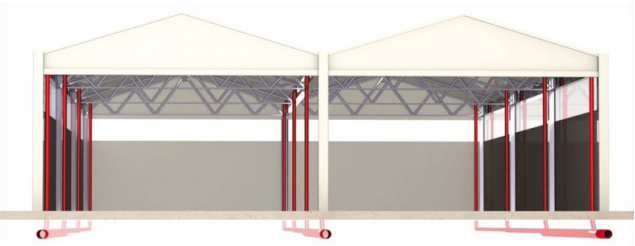
Akasison siphonic outlets are designed to streamline rainwater flow. As a rain storm increases in intensity, the outlets become submerged, preventing air entering the system. Small diameter pipes beneath the outlets prime quickly and generate plugs of water that flow to the downpipe. Water falling vertically through a downpipe, accelerates under gravity and creates negative pressure behind it. The vacuum generated and eventual 100% filling of the pipework, translates back through the system and siphons or sucks water off the roof.

# Siphonic System Advantage

The Akasion siphonic roof drainage system offers many advantages compared to conventional drainage for all building types:

		Benefits					
		Lower Building & Material Costs	Design Flexibility	More Usable Building Space	Faster Onsite Installation	Lower Building Maintenance Costs	Better for the Environment
Siphonics Feature	Fewer downpipes	√	√	√	√	√	√
	Smaller downpipes	√	√	√	√		√
	Lighter building structure	√	√	√	√		√
	Lighter rainwater loads	√	√		√	√	
	May be installed horizontally, close to roof	√	√	√	√		
	Less below ground work required	√	√	√	√	√	√
	Self cleaning (easier to maintain)					√	√
	Ideal for rainwater harvesting		√				√
	Made from recyclable materials						√

Siphonic roof drainage has advantages in material price, required labour on site and optimises the space in the building



**Traditional / Conventional - OLD**

- × Many down pipes
- × Gradient pipe work (at roof or underground)
- × Larger diameters
- × More groundwork under building
- × Low speed
- × Not self cleaning



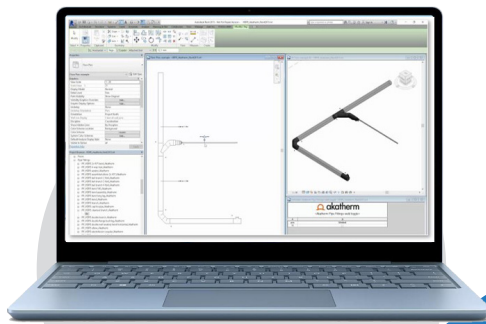
**Siphonic - NEW**

- ✓ Fewer down pipes
- ✓ Level pipe work for optimal use of height
- ✓ Smaller diameters
- ✓ Little groundwork under building
- ✓ High speed
- ✓ Self-cleaning

# The Akasison Solution

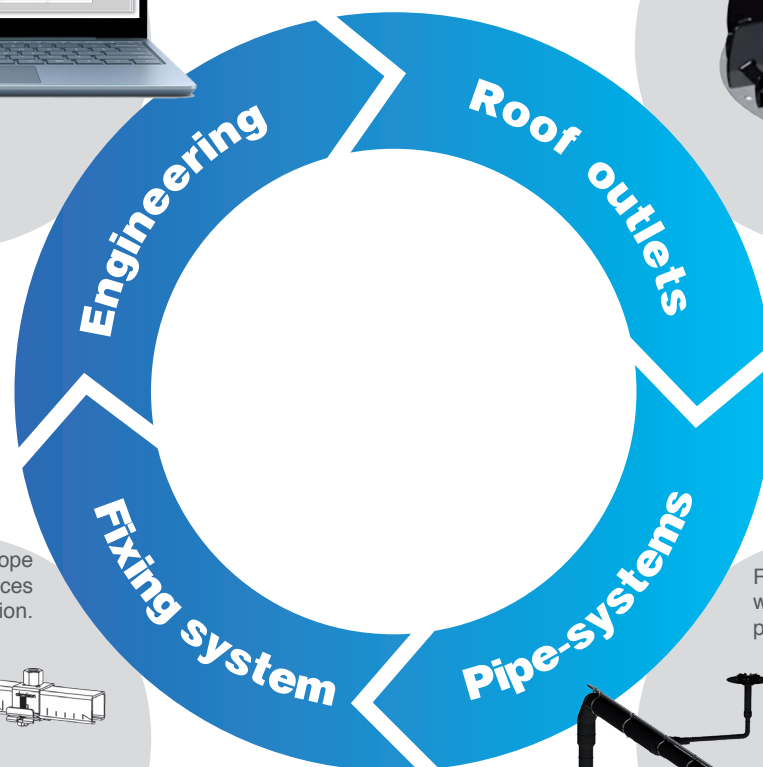
Akasison is more than a collection of components. We combine specific siphonic outlets, dedicated bracketing and the trusted Akatherm HDPE pipe system together with a professional siphonic design service, local product availability and a complete project support service by Ashirvad.

Akasison is a highly circular solution, using fewer pipes that are smaller in diameter than a conventional gravity drainage solution, using components that are up to 90% re-usable at the end of the project life.

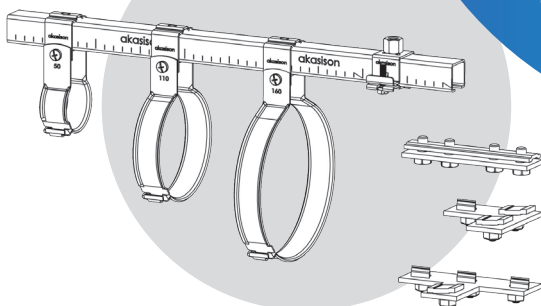


Accurate dimensioning of pipe diameters and roof outlet positions to optimise performance

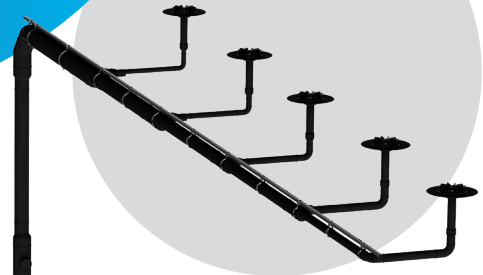
Extensive outlet range that blocks air ingress, provides a secure connection to roof and covers a multitude of roof types

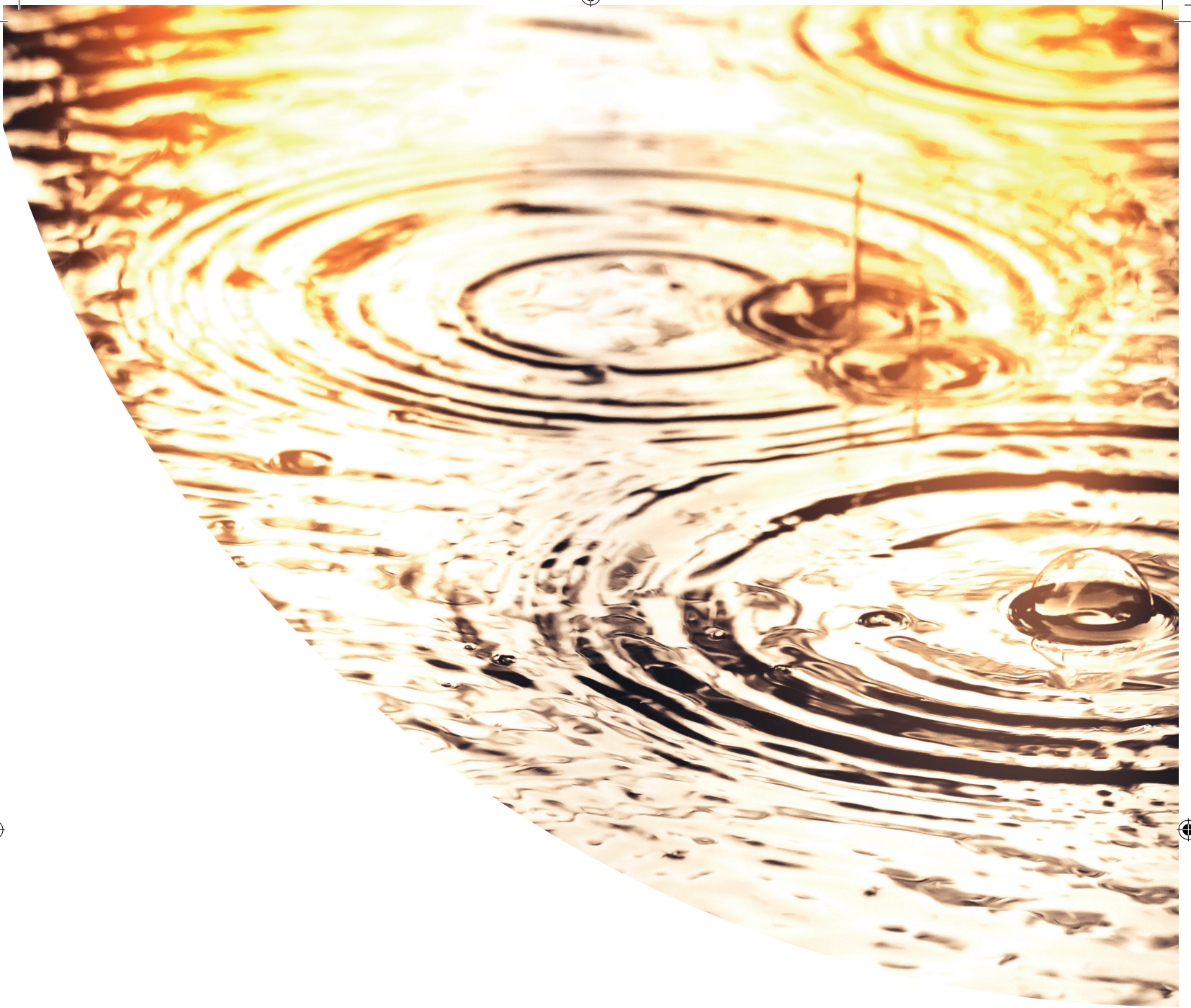


Secure fixing system to cope with the large range of forces during operation.



Robust PR pipe system to withstand the changes in pressure and temperature





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