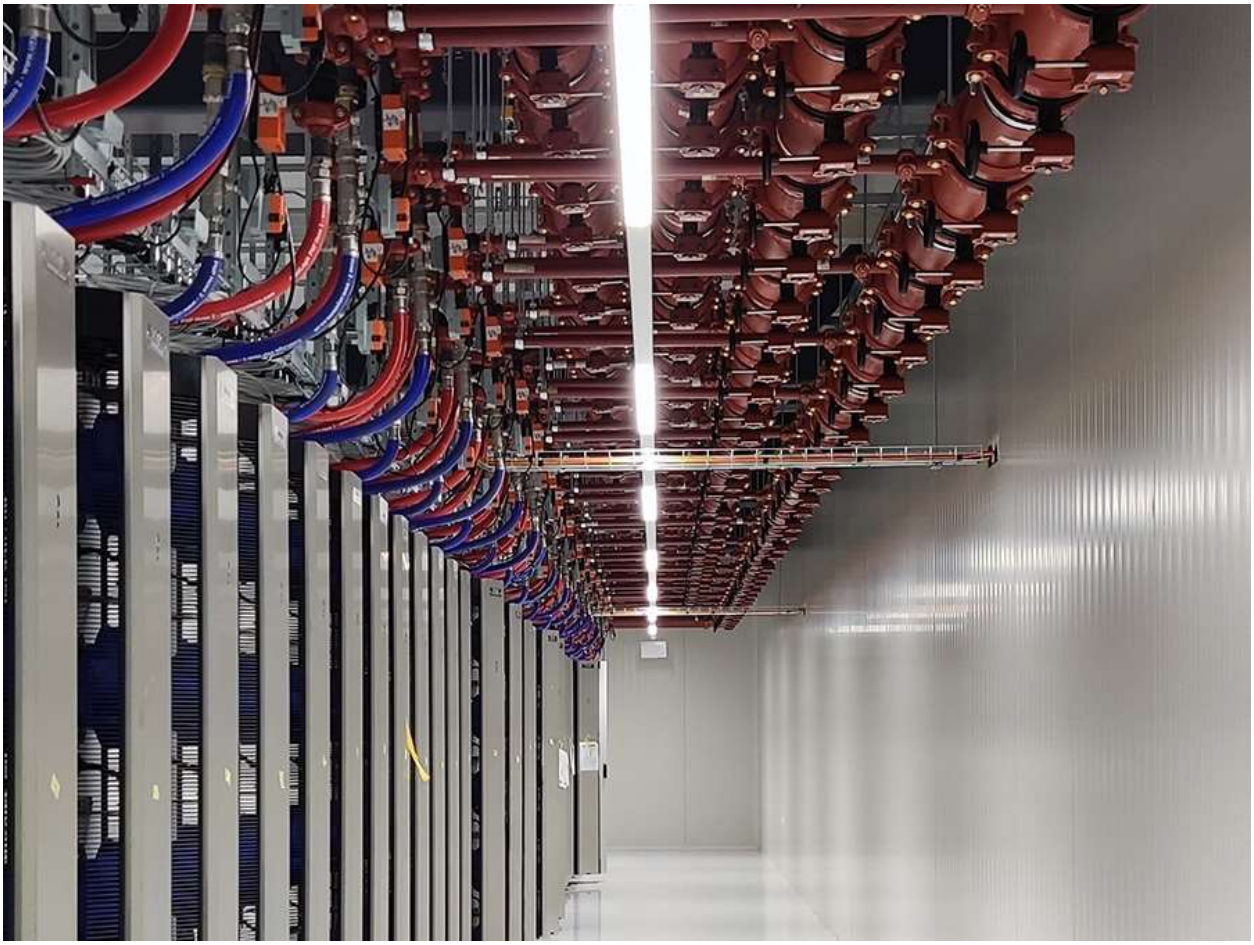
PRESS RELEASE

Streamlining data centre cooling and fire protection systems

As a single supplier for both cooling pipework and fire protection solutions, Victaulic is uniquely positioned to help safeguard critical data centre equipment, while enabling fast installation, international standardisation, and simple reconfiguration.



Victaulic pipework solutions in a data centre server room.

The rapid growth of artificial intelligence (AI), the Internet of Things (IoT), and cryptocurrency is driving unprecedented processing demands, leading to heat levels from high density computing hardware that traditional air conditioning alone can no longer manage. With server racks emitting such intense heat, cooling water must be delivered directly into the racks to maintain safe operating temperatures. At the same time, the high-value equipment within these racks – along with the critical data and services they support – must be protected from fire risks, requiring swift and effective suppression systems to prevent damage and disruption.

As a result, modern data centres require increasingly complex pipework systems to support both cooling and fire protection. Designing and constructing these systems for maximum effectiveness and efficiency is essential, and a single-source approach can help streamline

procurement while ensuring seamless integration. Embracing innovative solutions further accelerates project timelines, reduces risk, and enables flexible, future-proof designs that can adapt to evolving data centre needs.

Accelerating project timelines

Victaulic couplings can be installed by one person in a matter of minutes.

The choice of pipe joining method plays a crucial role in installation speed. Besides eliminating the emissions and hazardous fumes associated with welding, grooved mechanical pipe joining dramatically reduces installation time. With this method, pipes are cut to length, grooved, and joined using a coupling with a gasket secured by just two bolts. It takes a fraction of the time compared to welding and any on-site adjustments can be made easily, avoiding costly delays. The simplicity of this system means that installation crews can be trained quickly, overcoming Europe's shortfall of approximately 300,000 welders, and since data centres often require kilometres of pipework, the cumulative time savings can be significant, even with smaller teams.

Grooved mechanical systems are already the global standard for fire protection, but Victaulic continues to innovate to further speed up installation. The VicFlex™ Series VS1 flexible dry pendent sprinkler, for example, features a unique braided hose design that can be fitted up to 10 times faster than traditional threaded black pipe armovers by just a single installer.

"Time is money, especially in the data centre industry," explains Graeme Leonard, EMEA division manager for fire protection at Victaulic. "Companies invest in new facilities because they already have clients lined up, so they need them operational as soon as possible. The faster a data centre goes live, the sooner its owners can start getting a return on investment."

Facilitating global standardisation

As data centre construction expands beyond traditional hubs like London, Paris, Frankfurt, and Amsterdam, operators must navigate varying regulations, labour standards, and supply chain constraints across different regions. For global data centre owners managing multiple projects simultaneously, standardisation is essential to ensuring efficiency, quality, and consistency, while minimising risk and accelerating delivery.

"When you're overseeing hundreds of data centre projects worldwide, a standardised approach is crucial to reducing complexity and keeping timelines on track," says Sebastian Matijasevich,

European sales director at Victaulic. “With a grooved mechanical pipe joining system, you’re working with the same set of couplings, valves, and fittings no matter where you build – streamlining procurement, installation, and quality control.”

Standardised grooved modular solutions can also support sustainability initiatives. As regulations increasingly mandate heat reuse to improve energy efficiency, these systems simplify connections to district heating networks or vertical farms, for example, making heat recovery and transfer more seamless and effective.

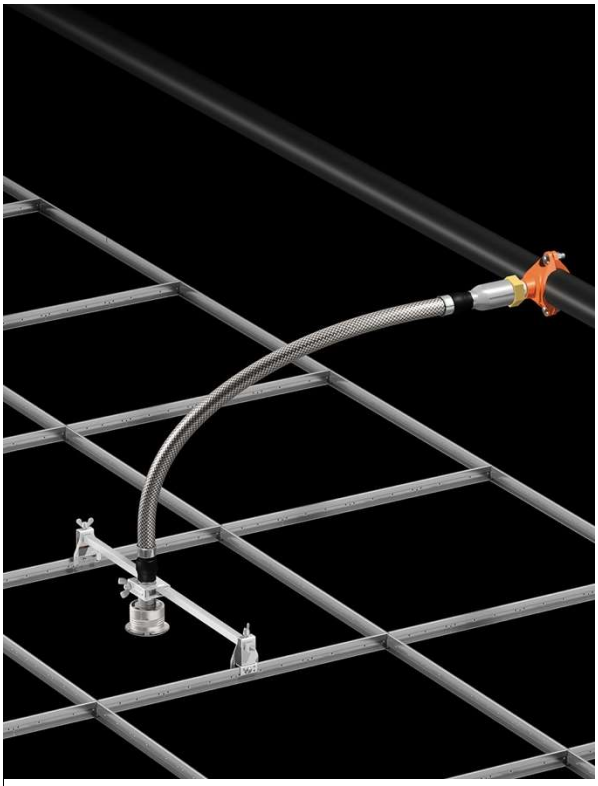
Future-proofing infrastructure

Beyond fast project delivery and global standardisation, data centre owners need adaptable infrastructure to keep pace with rapid technological advancements. The capacity installed today may be outdated in just a few years, making flexibility a critical consideration in both cooling and fire protection systems.

The grooved mechanical pipe joining method provides built-in adaptability by allowing couplings to be easily removed and reused without damaging the pipes. This enables quick system reconfiguration or expansion of pipework without additional emissions, material waste, or having to cut the piping system – supporting both sustainability and cost efficiency. If no longer needed, the couplings can also be recycled, reinforcing the industry's move toward circular construction practices.

“The architecture of a data centre is constantly evolving, with server racks being reconfigured or added to meet increasing demand. Fire protection systems must be just as adaptable, ensuring critical infrastructure remains safeguarded without costly, time-consuming modifications,” Graeme says.

Flexible solutions like the *VicFlex* Series VS1 Flexible Dry Pendent Sprinkler make it easier to adjust fire protection as layouts change. Unlike traditional dry pendants and threaded pipe drops, which require precise measurements and custom fabrication, flexible dry sprinklers accommodate adjustments on-site with minimal disruption – ensuring fire protection keeps pace with evolving data centre requirements.



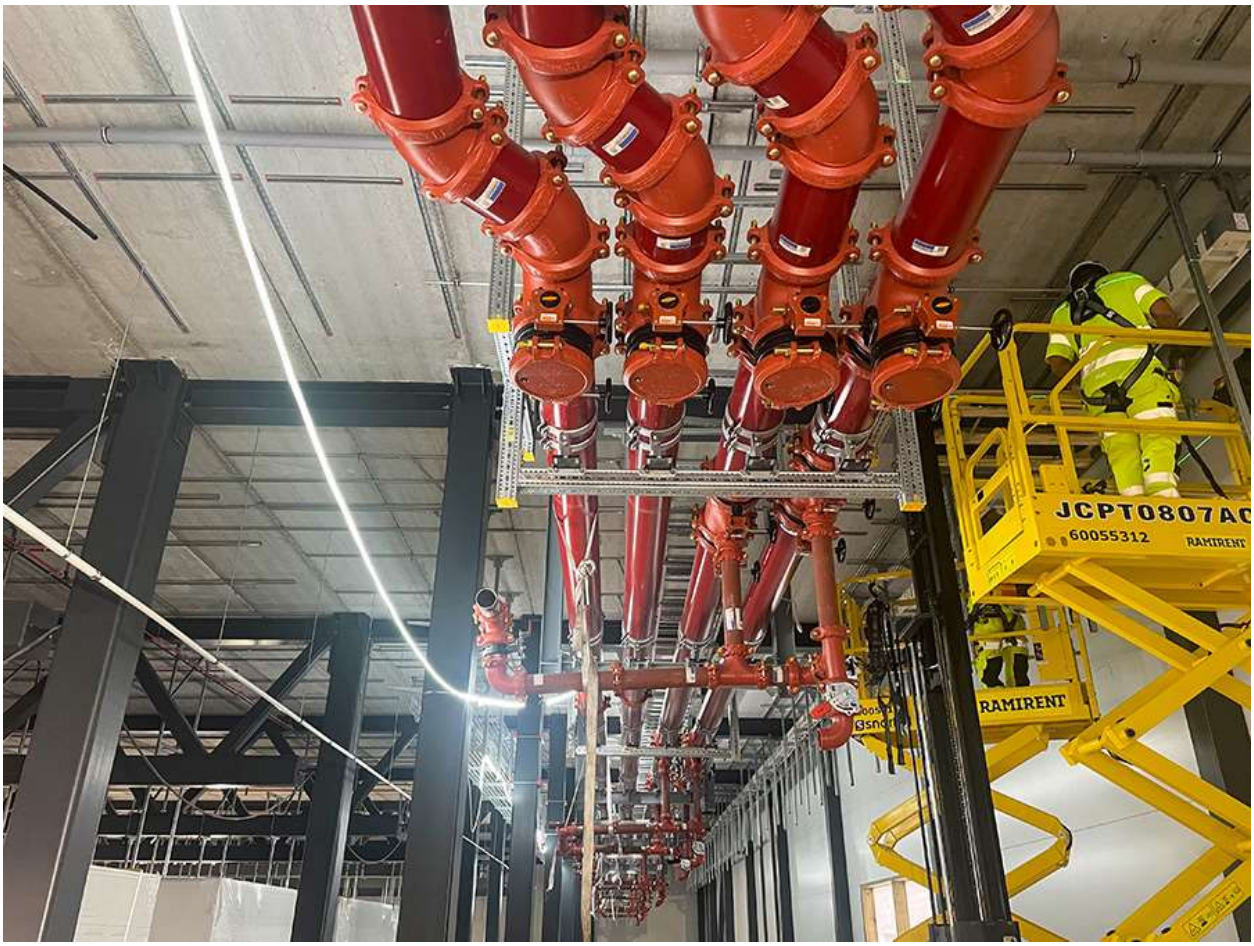
The VicFlex Series VS1 Flexible Dry Pendent Sprinkler with flexible hose.

Embracing new ways of working

Data centre owners typically set the design standards for their facilities, working closely with design engineers and consultants to refine specifications. However, many of the

professionals involved in data centre construction come from traditional industries such as oil and gas or mining – sectors where safety, reliability, and redundancy are paramount. These industries have long-established engineering practices and, naturally, professionals tend to rely on technologies they have used for decades, prioritising proven old solutions over reliable innovations.

The challenge, however, is that data centres operate under entirely different conditions. Speed, scalability, and adaptability are just as critical as reliability. With processing demands increasing exponentially, project teams must rethink traditional approaches and embrace solutions designed to meet the fast-moving requirements of modern data centres.



Header pipes with Victaulic couplings and fittings during a data centre construction project.

“The mindset that got us here won’t take us to the next level,” Sebastian concludes. “We need to encourage a shift in thinking – one that embraces advanced technologies to improve efficiency, scalability, and sustainability in data centre construction. When you take that leap of faith, you quickly see the benefits of innovation in action.”

By integrating innovative solutions such as grooved mechanical pipe joining and flexible fire protection systems, data centres can achieve faster installations, seamless standardisation, and future-ready infrastructure – ensuring they remain agile and resilient in the face of ever-evolving demands. Taking a holistic approach to pipework installation, from cooling to fire protection, can further streamline project timelines and enhance system reliability, helping data centre operators build with both speed and long-term flexibility in mind.

Please visit the Victaulic website to find out more about fire protection and cooling systems for data centres.

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ABOUT VICTAULIC

Since 1919, Victaulic's pipe joining and flow control solutions have optimized construction productivity and reduced risk, ensuring projects are completed safely, on time and within budget. Driven by a spirit of continuous innovation, Victaulic's portfolio of 100,000+ products and patented technologies promote freedom of design, as well as simplified inspection and maintenance for the life of any system.

With more than 5,500 employees and 55 international facilities, Victaulic helps customers in over 140 countries succeed in the global construction industry. From the tallest buildings to the deepest mines, customers trust our products to increase overall system durability in the most demanding construction projects and operating conditions. Learn more about how our innovative piping products and design services can engineer confidence into your build at www.victaulic.com.

MEDIA CONTACT

For further enquiries, please contact:

Hannah Kitchener
PR Support
SE10 PR
Hannah.kitchener@se10.com
+44 (0)7432 296296