



Protecting Buildings and Data Centers with FM-Certified Fire Suppression Systems

VID FIREKILL®
LOW PRESSURE WATERMIST

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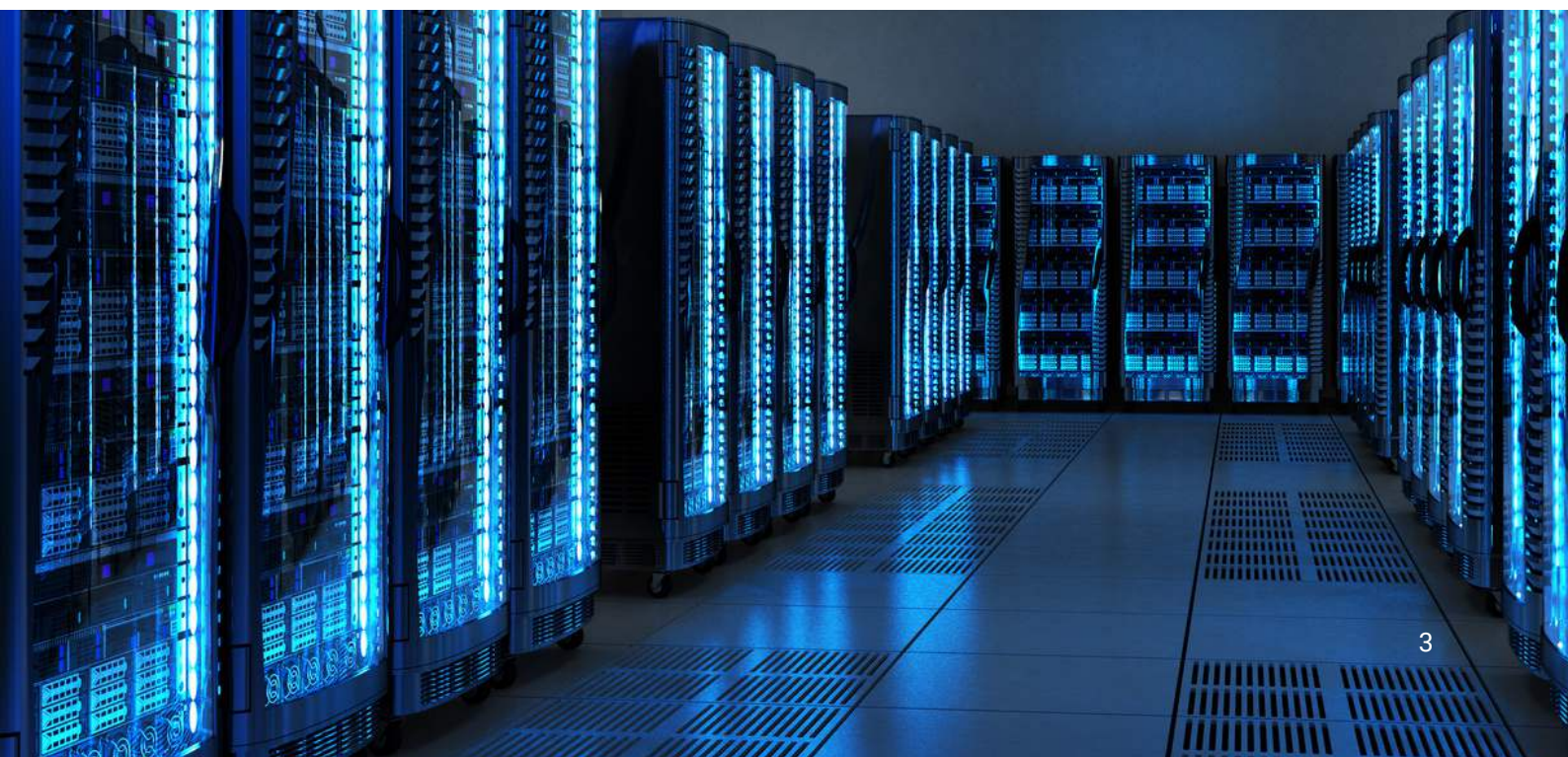
Executive Summary

Fire risks in modern infrastructure are evolving. Buildings and data centers—complex, high-value, and critical to daily operations—face growing challenges, from increased electrical loads to the integration of electric vehicles and sensitive IT infrastructure.

In this context, choosing a certified fire suppression system is not just about compliance; it's about assurance. FM Approval has emerged as a global benchmark for verifying the performance and reliability of fire protection solutions. With the introduction of certifications HC1, HC2, and HC3, FM Global provides a clear and structured standard to evaluate fire suppression systems for different risk categories.

VID FIREKILL stands as the first company in the world obtaining the FM Approved systems across all hazard categories. [RC1] This whitepaper explains what FM Approval is, why it matters, and how VID FIREKILL's uniquely certified solutions offer the highest level of protection for both buildings and data centers. It provides technical insight, real-world application scenarios, and practical tools to support fire protection professionals in making informed, future-proof decisions.

Whether you are designing a parking facility in a high-rise building or operating a mission-critical data center, this guide will help you understand the value of FM Certification and how to specify a system that protects people, assets, and continuity of service.



FM Certification: a new Industry Benchmark



In safety-critical environments like buildings and data centers, selecting the right fire suppression system involves more than ticking a compliance box—it's about choosing solutions that have been independently tested under rigorous conditions.

FM Global is a commercial property insurance company that also operates **FM Approvals**, an internationally recognized third-party certification body. Their role is to evaluate fire protection products and systems based on strict performance-based testing. Certification from FM Approvals is seen by many professionals—especially in North America—as a mark of reliability, but it's increasingly acknowledged globally.

FM categorizes risks into three levels:

- **HC1** – Low hazard
- **HC2** – Moderate hazard
- **HC3** – High hazard

This classification helps engineers and facility managers align fire suppression systems with the actual risk level of the environment they're protecting. For many, this is especially relevant when dealing with critical infrastructure, high-value assets, or complex installations such as EV-equipped parking or mission-critical server rooms.

While FM Approval is not the only standard in the world—others include UL, VdS, LPCB, and CE markings—it is unique in how it combines testing severity with application-specific evaluation. It's more than just a stamp; it's a signal that the product has withstood tough, real-world simulations.



VID FIREKILL's Position

As of today, VID FIREKILL offers fire suppression systems that are FM Approved across all three hazard categories—HC1, HC2, and HC3. This positions the company as one of the few suppliers globally to meet the full range of certification demands.

This achievement reflects a long-term investment in product development and testing, with a focus on applications such as buildings and data centers, where risk profiles are diverse and downtime is unacceptable.

Rather than telling you what system to buy, this whitepaper aims to help you understand what questions to ask and what performance levels to expect when safety is truly a priority.

The goal is to make certification criteria accessible—not only to specialists but also to designers, owners, and risk managers who share responsibility for protecting people and property.



Understanding FM Approval

Choosing a fire suppression system means putting trust in technology that will only prove its value in the worst-case scenario. That's why independent certification is so important—and why FM Approval stands out.

Unlike other certification marks that simply verify technical specifications, FM Approval goes further. Operated by FM Global, one of the world's largest commercial property insurers, the program combines insurance-driven risk insights with real-world testing. The result is a certification that not only proves a system can work—but that it will work under challenging conditions.

What sets FM Approval apart is its practical orientation. The process simulates real fire conditions and stress scenarios, ensuring that approved systems meet higher thresholds for reliability, responsiveness, and safety integrity. For professionals responsible for high-risk or mission-critical facilities, this level of assurance can make the difference in project decisions.

Understanding FM Approval is not about memorizing acronyms—it's about asking better questions when selecting or specifying a solution: Has this been tested for the specific risk level of my application? Is it part of a system designed for my environment—not just adapted to it?

FM Approval gives you a framework to answer those questions with confidence.

That said, the FM logo alone is not enough. While it's a strong signal of quality and reliability, professionals should always go beyond the label. A truly robust evaluation also looks at how well the system integrates into the building design, whether it aligns with operational requirements, the availability of support and maintenance, and how clearly the manufacturer communicates performance under different risk conditions.

Certification should be the starting point—not the finish line—of a responsible fire protection decision-making process.



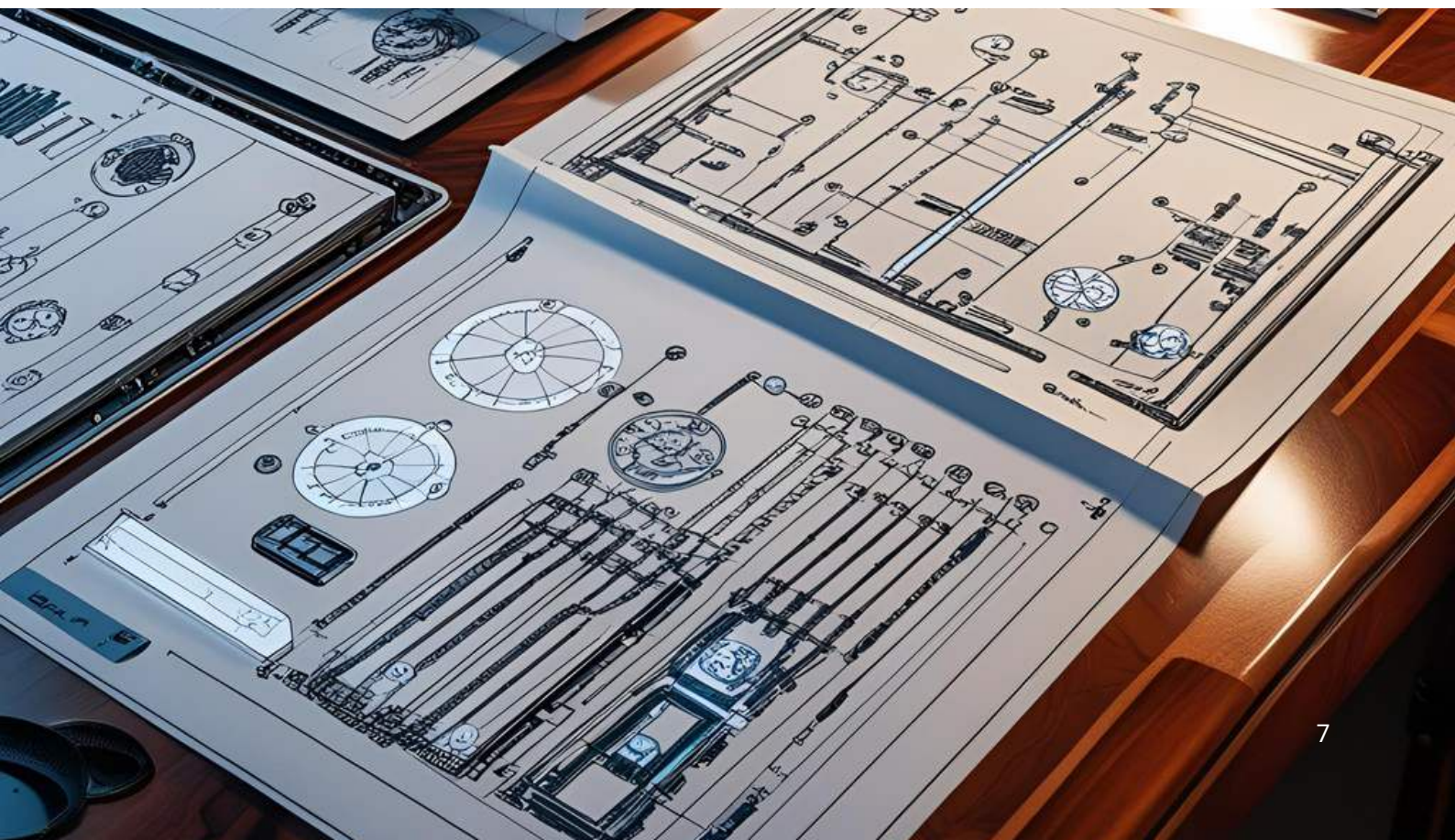
The Certification Process

For those responsible for specifying or approving fire protection systems, understanding how FM Approval is awarded can provide added confidence.

The process begins when a manufacturer submits a product for evaluation. FM Approvals conducts a series of **rigorous laboratory tests**, simulating real fire scenarios and stress conditions relevant to the product's intended environment. These tests go beyond simple pass/fail metrics, examining how a system performs under pressure, over time, and in varying risk conditions.

If the product meets the required standards, the next step is a **factory audit**, where FM inspectors verify that the manufacturing process maintains consistent quality. Importantly, certification doesn't end once the product is approved—**periodic re-evaluation and surveillance audits** are conducted to ensure ongoing compliance.

For decision-makers, this means that an FM Approved label reflects more than a moment in time—it represents a **living commitment** to reliability, updated regularly and verified independently.



Why It Matters

When choosing a fire suppression system, decisions often come down to more than specs or price. What's truly at stake is safety, continuity, and trust—especially in environments where failure is not an option.

For Building Owners and Facility Operators

A certified system helps reduce operational risks, minimize downtime after incidents, and enhance overall business continuity. In sectors like commercial real estate or critical infrastructure, the cost of an ineffective response to fire can be far greater than the cost of investing in a proven system upfront.

For Insurers and Compliance Officers

FM-certified systems simplify underwriting. They provide third-party verification that the solution meets performance expectations, which can reduce ambiguity and disputes in the event of a claim. Some insurers may even offer more favorable terms when FM-certified systems are in place.

For Engineers and System Designers

Certification provides clarity. It reduces friction with local authorities and fire inspectors, and offers a standardized framework that makes technical communication with clients and stakeholders more straightforward. It also supports faster approvals and fewer redesigns.

Ultimately, FM Approval supports better conversations across all decision-makers. It offers a shared language between engineers, insurers, regulators, and owners—one rooted not in marketing claims, but in verified performance. And in high-stakes environments like buildings and data centers, that kind of alignment can make a significant difference.



Application: Buildings & Data Centers

Risk Profiles

Buildings and data centers are high-value environments where fire incidents can lead to serious consequences—not only in terms of safety but also business disruption and asset loss. These environments often include complex infrastructure, critical equipment, and high occupant density, making them particularly vulnerable.

- **Buildings** face risks related to multi-use occupancy, underground car parks, vertical evacuation complexity, and increasingly the presence of electric vehicles.
- **Data centers** house critical IT infrastructure and are designed for non-stop operation. Any incident, even minor, can lead to costly downtime and reputational damage.

Understanding the specific fire load, occupancy type, and operational sensitivity of these environments is essential when evaluating fire protection solutions.

Common Failure Points in Current Systems

Many existing fire suppression solutions were designed for generic industrial settings and are not tailored to modern architectural or digital infrastructure.

- **Overuse of water** can lead to collateral damage, especially in server rooms, underground electrical equipment zones or lead to more business interruption due to long and costly restoration processes.
- **Slow detection or activation times** may allow fires to escalate before suppression begins.
- **Poor integration** with ventilation, electrical, or emergency systems can reduce effectiveness or delay response.
- **One-size-fits-all systems** often fail to adapt to new risks, such as EV-related fires or compartmentalized structures.

These gaps are especially visible in environments that demand a combination of fast intervention, minimal disruption, and asset protection.



Application: Buildings & Data Centers

Specific Challenges: EVs, Heat Load, and Uptime Demands

Modern risks have evolved. Fire protection must now address:

- **EV charging stations and lithium-ion batteries:** These introduce unpredictable thermal runaway events and higher ignition potential.
- **Increased thermal load:** High-performance buildings and densely packed server rooms generate heat that can amplify fire behavior.
- **Continuous operation requirements:** Facilities like data centers or 24/7 transport hubs cannot afford unplanned interruptions. Even routine testing or system maintenance must be planned around operational uptime.

- **Urban and mixed-use integration:** Fire systems in buildings with retail, residential, and parking elements must handle diverse risks within the same structure.

These challenges highlight the importance of using certified systems specifically tested under realistic and high-stakes conditions—one of the defining strengths of FM-approved solutions in categories HC2 and HC3.



Buildings

Modern buildings face increasingly complex fire risks—especially those that include underground car parks, mixed-use areas, or EV charging stations.

In these scenarios, traditional suppression systems may not activate quickly enough or may cause collateral damage through water discharge.

An FM-certified water mist system offers faster response, reduced water usage, and reliable performance under diverse conditions. This is especially valuable in environments where safety, operational uptime, and structural integrity are all key concerns. Examples include residential high-rises, commercial office complexes, and infrastructure hubs like airports or shopping centers.

Designers and facility managers should consider how well the fire suppression system integrates with ventilation, power supply, and evacuation strategies. FM Approval ensures that the system has been tested in realistic scenarios to account for these variables.



Data Centers

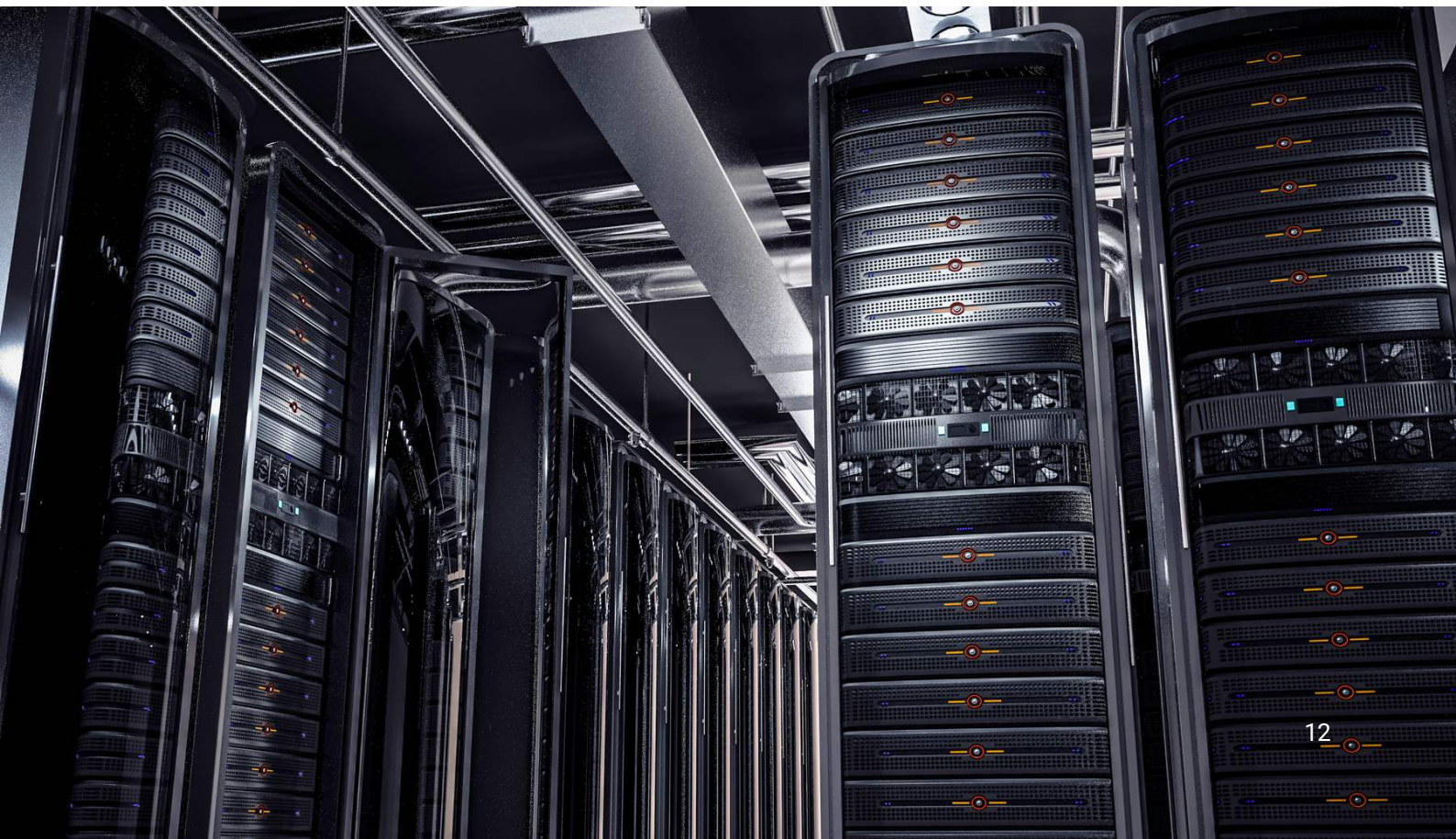
In data centers, the stakes are even higher. Fire is one of the few incidents that can cause both physical damage and prolonged downtime.

Systems that use large volumes of water can threaten sensitive electronics, while systems that don't react fast enough can fail to prevent escalation.

FM HC3 certification is especially relevant in this context. It confirms that a fire suppression system is capable of protecting high-risk, high-density environments where failure has significant operational consequences.

VID FIREKILL's water mist technology is well-suited to data centers because it suppresses fire with minimal water, reducing the risk of equipment damage while still delivering fast, reliable suppression. And because it's certified under the most demanding FM category, it gives IT infrastructure teams and risk managers added peace of mind.

Whether you are responsible for a new construction project or evaluating retrofits, knowing your system has been tested for scenarios like lithium-ion battery fires or enclosed electronic spaces can help you plan with greater confidence—and defend your choices with data.



The VID FIREKILL Advantage

Choosing the right fire suppression system is not just about ticking boxes—it's about finding a partner who understands the real-world pressures of building safety, operational uptime, and long-term reliability. VID FIREKILL offers a distinct set of advantages tailored to meet those needs.

Certified Across All FM Hazard Categories

VID FIREKILL is one of the few manufacturers worldwide with FM Approved systems for **HC1, HC2, and HC3** environments. This makes it possible to address multiple risk profiles—low, medium, and high—using a single provider and a harmonized system architecture.

This comprehensive certification simplifies decision-making for designers and asset owners who need consistent performance across diverse facility types, including those with interconnected uses (e.g., data centers with adjacent parking or residential towers).

The result is a system that's both highly effective and practical to implement—even in complex building layouts or sensitive electronic environments.



The VID FIREKILL Advantage

Application-Driven Product Range

Rather than offering generic solutions, VID FIREKILL develops suppression systems optimized for specific applications:

- Ceiling, wall, and in-rack nozzles for various room geometries
- Dedicated solutions for car parks, server halls, energy storage areas
- Compatible with modern building automation and BMS platforms

This modularity allows specifiers to build protection strategies that reflect the true usage of each space, instead of retrofitting one-size-fits-all answers.

Field Experience and Support

With installations across Europe, Asia, and the Middle East, VID FIREKILL brings global field experience backed by local engineering support. From early-stage design consultation to commissioning and compliance documentation, the team is structured to help fire safety professionals succeed at every step.

Whether you're designing a greenfield data center or upgrading an existing high-rise building, VID FIREKILL offers not only certified products but also the **expertise to help you apply them effectively.**

New Constructions vs. Retrofits: What to Consider

- **New buildings** offer full future-proof design freedom. Systems can be seamlessly integrated into the architectural layout, HVAC, and BMS from day one.
- **Retrofits** often face space constraints, existing system limitations, and the need to avoid operational downtime. VID FIREKILL's compact water mist systems are well-suited for these environments, with minimal structural impact and flexible installation options.

Whether you're working with a blank slate or adapting to legacy infrastructure, choosing a system certified for your risk level—and flexible enough to match your constraints—can save time and reduce complexity.



Comparing Technologies: Water Mist vs. Traditional Systems

Selecting the right suppression technology depends on your priorities—speed of activation, water usage, maintenance, or integration.

Have a look at the table to discover how water mist compares to more traditional options.

No system is one-size-fits-all. The key is choosing what aligns best with your **building's layout, business needs, and risk exposure**. Water mist provides a versatile and certified middle ground—fast, effective, and easier to integrate across diverse environments.

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Feature	Water Mist (VID FIREKILL)	Traditional Sprinklers	Gas-Based Systems
Water Usage	Very low	High	None
Reaction Time	Fast	Moderate	Fast
Damage to Equipment	Minimal	Can be significant	None (but risk of suffocation)
Space Requirements	Compact	Bulky piping and tanks	Requires sealed room
Best For	Electronics, mixed-use spaces	General building and not complex protection	Critical rooms with no airflow

Case applications

FM-Approved Water Mist Protection in a Data Center

Background

A data center, recognizing the critical importance of fire protection for its electronic equipment and uninterrupted operations, sought a fire suppression solution that would minimize water damage while ensuring rapid fire suppression.

Challenge

Traditional sprinkler systems posed a risk of excessive water discharge, potentially damaging sensitive electronic equipment. The data center required a solution that offered:

- **Minimal water usage** to protect electronic assets
- **Rapid activation** to suppress fires quickly
- **Compliance with international fire safety standards**



Case applications

FM-Approved Water Mist Protection in a Data Center

Solution

The data center implemented VID FIREKILL's **low-pressure water mist system**, which had recently achieved **FM Approval**. This system was chosen for its:

- **Real scale tested solution**
- **Extremely low water consumption**, reducing potential water damage
- **Effective fire suppression capabilities** across various areas, including server halls, subfloors, technical rooms, and offices
- **Compliance with FM Global standards**, providing assurance of performance and reliability: ● FM DS 5-32 is the only document available among standards really defining how to protect a data center.

Outcome

The installation of VID FIREKILL's FM-approved water mist system provided the data center with a fire protection solution that met its specific needs. The system's low water usage minimized the risk of damage to electronic equipment, and its rapid activation ensured quick suppression of any fire incidents, thereby maintaining the data center's operational integrity.

Note: This case exemplifies how VID FIREKILL's FM-approved water mist systems can be effectively applied in data center environments, offering tailored solutions that address specific fire protection challenges.



Scenarios That Show the Difference

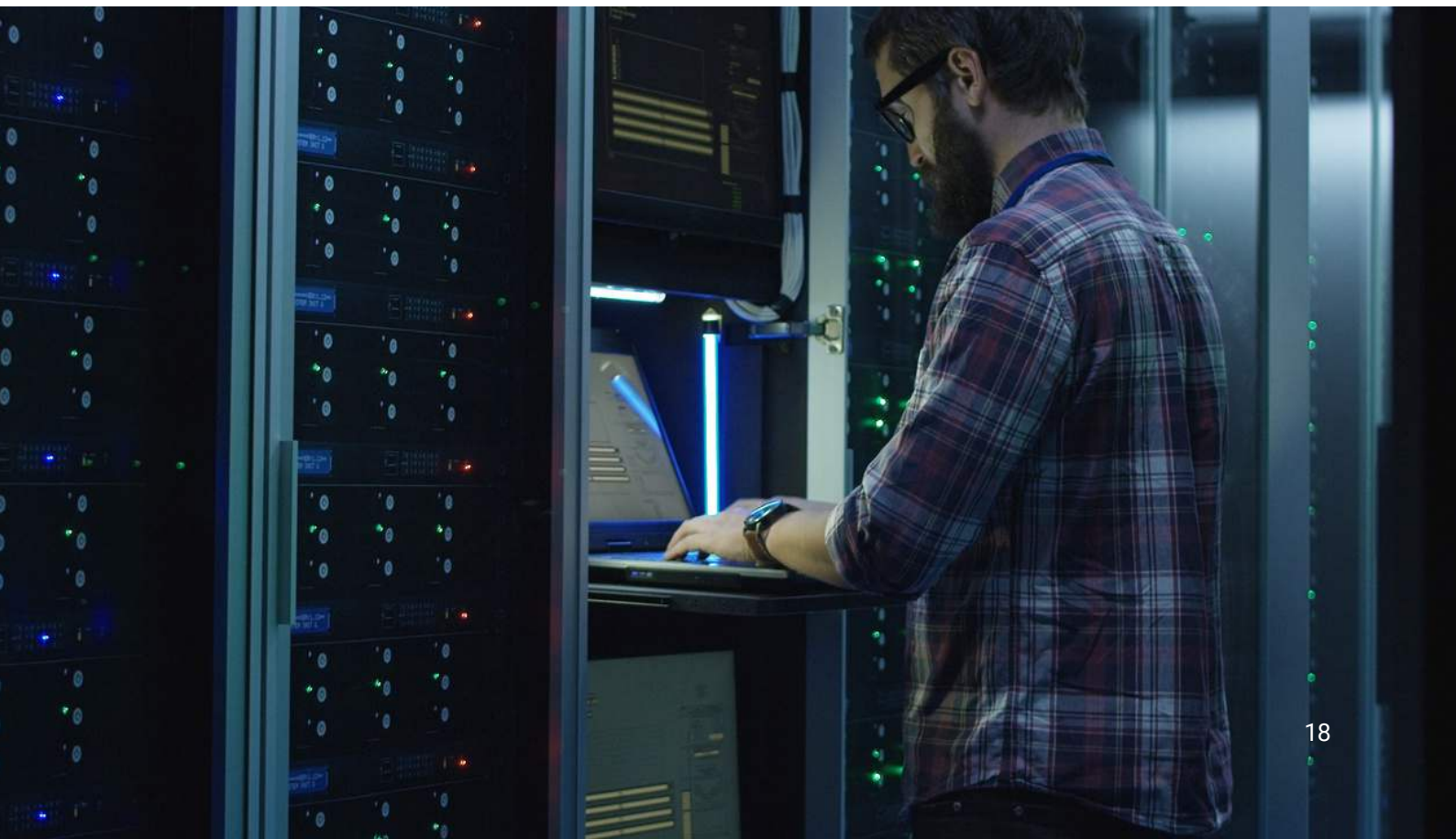
A Day in the Life of a Data Center Engineer

It's Monday morning. The data center is operating at full capacity. Workloads are balanced, backups are underway, and everything is running smoothly—until a heat sensor flags an abnormal spike in a subfloor energy storage compartment.

If this facility were using a generic design, the engineer might face uncertainty: delayed suppression, false alarms, or worst-case scenario, widespread water discharge. The fire could spread quickly, impacting nearby racks. Recovery might take days, costing thousands in downtime and damages.

Instead, thanks to an **FM-certified water mist system**, the fire is contained almost instantly. The system activates only where needed, using minimal water. No surrounding equipment is affected. Within minutes, the engineer logs the event and continues with their day. No disruption. No escalation. No crisis.

These moments aren't hypothetical—they're exactly the kind of real-time decisions that FM-certified solutions are designed to support.



Scenarios that show the difference

Mixed-Use and Retrofit Projects: Adaptability in Action

In a Scandinavian mixed-use complex combining retail, offices, and a parking structure, designers faced challenges common to modern urban construction: multiple risk zones, compact vertical layouts, and a demand for minimal visual and structural impact.

VID FIREKILL FM-certified water mist system provided a tailored response: discreet nozzle placement, low water usage compatible with sensitive tenant areas, and smooth integration with the building's central control system.

In southern Europe, a heritage-listed public building required an upgrade to its outdated fire suppression system xxx. Conventional retrofits would have meant invasive construction and visual disruption. Instead, the engineering team chose VID FIREKILL for its compact piping, unobtrusive installation, and proven performance under FM HC2 requirements.

These projects show that fire protection doesn't have to compromise design, operations, or preservation—when the right system is chosen. In a Scandinavian mixed-use development with integrated parking, retail, and office space, VID FIREKILL systems were selected for their adaptability across zones and compatibility with building design standards. Likewise, in a retrofit of a heritage-listed facility in southern Europe, compact piping and non-intrusive installation were decisive.

These cases demonstrate that FM-certified water mist systems are not only effective—they are adaptable to diverse challenges, from urban density to historical preservation.



Checklists / 1

Key Questions to Ask When Specifying a Fire Suppression System

Use this list to guide early-stage evaluations and compare solutions with clarity:

- 1 What risk category does my application fall into?**
HC1, HC2, or HC3? Ensure the system is certified for that level.
- 2 Is the system FM Approved for my specific use case?**
General approval isn't enough—look for relevant environmental testing.
- 3 What are the water usage and pressure requirements?**
Can the building support them without upgrades?
- 4 Is the system suitable for retrofit or constrained environments?**
Will installation disrupt operations or architecture?
- 5 Does the manufacturer offer technical support during design and commissioning?**
Is training available for local installers or maintenance teams?
- 6 How often is the certification reviewed or renewed?**
Does the manufacturer comply with regular FM audits?
- 7 What are the integration options with existing BMS or safety infrastructure?**
Will it support remote diagnostics or alerting?
- 8 Are there local references or case studies in similar environments?**
Who else has used this solution and with what outcomes?

Checklists / 2

What Should Be FM Certified?

If you're investing in certification, make sure it's applied where it matters most:

- **Car parks, battery storage rooms, and EV charging areas**
(Common zones of high thermal risk)
- **Data halls, server rooms, and underfloor spaces**
(Mission-critical equipment protection)
- **Energy and mechanical rooms**
(High ignition risk and structural impact)
- **Storage areas** for flammable or sensitive materials

Where uncertainty exists, always prioritize FM certification in areas that combine:

- High asset value
- Dense infrastructure
- Continuous operations
- Difficult evacuation scenarios In a Scandinavian mixed-use development with integrated parking, retail, and office space, VID FIREKILL systems were selected for their adaptability across zones and compatibility with building design standards. Likewise, in a retrofit of a heritage-listed facility in southern Europe, compact piping and non-intrusive installation were decisive.

These cases demonstrate that FM-certified water mist systems are not only effective—they are adaptable to diverse challenges, from urban density to historical preservation.



Next Steps: from insight to implementation

Whether you're designing a new facility, upgrading an existing structure, or simply reviewing fire safety standards, now is the time to act.

Learn More

Explore how FM-approved water mist systems apply to real-world infrastructure and get access to product-specific details:

[Buildings](#)

[Data Center](#)

Download Technical Documents

Get the full technical picture with FM certificates, product datasheets, and integration guidelines:

[Resources & Downloads](#)

Speak With a System Expert

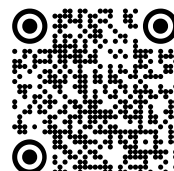
Every project is different. Our team is available to support your design process, provide documentation, or evaluate your current protection strategy.

[Contact us](#)

Choosing fire suppression is not just about compliance—it's about confidence. Let FM certification, and the VID FIREKILL team, help you build it.



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VID FIREKILL
Norgesvej 2
5700 Svendborg, DK
Phone: +45 6262 1024
www.vidfirekill.com
sales@vidfirekill.dk