

Retrofits with BlazeMaster® Fire Protection Systems

The right choice for fire sprinkler retrofits



SCIENCE. SERVICE. SAFETY.



Fire Sprinkler System Retrofits

BlazeMaster® Fire Protection Systems vs. Steel: Which is Best for Retrofits?

If you're evaluating pipe and fittings for a retrofit, your options include traditional steel pipe and BlazeMaster Fire Protection Systems. Compared to steel pipe, BlazeMaster CPVC can provide clear advantages that make them the best option for retrofits for a wide range of light hazard commercial and residential applications:

- **Lower cost.** BlazeMaster Fire Sprinkler Systems are less expensive to install in both material and labor costs.
- **Easier installation.** BlazeMaster CPVC is lightweight and flexible, which makes them easier to transport throughout the jobsite and to install in tight spaces. By comparison, it is cumbersome to carry long lengths of steel pipe through an existing facility while avoiding damage to walls and trying to fit it into elevators.
- **Less disruption to building occupants.** Installation of BlazeMaster Fire Sprinkler Systems is a faster, cleaner and quieter process compared to steel pipe, which makes it less disruptive to building occupants.
- **Lower long-term maintenance costs.** Unlike steel pipe, BlazeMaster CPVC is naturally resistant to corrosion and scaling, which prevents leaks and costly repairs while lengthening system lifetime.
- **Superior sustainability metrics.** BlazeMaster Fire Sprinkler Systems support building owners in reaching green building goals.



About BlazeMaster Fire Protection Systems

- Proven success protecting people and property since 1984
- The most specified non-metallic fire protection piping system in the world
- Over 2 billion feet (600 million meters) of BlazeMaster pipe and fitting systems have been installed worldwide

Case Study: BlazeMaster Fire Sprinkler Systems Reduce Costs on Office Retrofit

BlazeMaster Fire Protection Systems provided the perfect solution for a three-building, 24,000-square-foot complex in Sacramento, California. The 50-year-old structures had never been sprinklered, and local government was requiring them. Since the ceiling had been removed, Alwest Fire Protection, the fire sprinkler contractor, assumed installing steel would be easy and retrofitted the first building using steel.

But fitting the steel pipe into the trusses was a difficult and slow process. Alwest soon realized that BlazeMaster CPVC would be more cost-effective for the remaining two buildings, so they made the switch. The result: Alwest reduced labor by 35% and saved the building owner \$21,000.



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The BlazeMaster Fire Protection Systems Advantage

Save Money on Installation

BlazeMaster Fire Sprinkler Systems can save up to 30% compared to steel systems, depending on the type of structure and quantity of material required. Here are five ways BlazeMaster CPVC can offer a less expensive alternative to steel pipe:

- 1. Lower material costs.** BlazeMaster Fire Sprinkler Systems offer smoother pipe surfaces and superior hydraulics compared to steel, so designers can typically specify smaller diameter pipe while ensuring the same level of flow.
- 2. Easier installation.** BlazeMaster CPVC can reduce the cost of labor because their light weight, inherent flexibility and one-step solvent cement joining process simplifies the installation process. Since BlazeMaster Fire Sprinkler Systems are 84% lighter than steel, one installer can easily complete an entire area of a jobsite by himself using basic hand tools. Better yet, BlazeMaster CPVC is easy to install in tight spaces, which is especially convenient in retrofits. On the other hand, steel is rigid and 84% heavier than BlazeMaster Fire Protection Systems. Steel pipe installation often requires a multiple-person crew, specialized equipment, and additional man hours, especially when retrofitting a building with a finished ceiling.
- 3. Simpler tools.** Retrofitting with steel pipe requires a lot of equipment, including a power source, open-flame torches, pipe wrenches, and threading machines – just to name a few. These tools are expensive to purchase upfront – and they are often lost or stolen on the jobsite and need to be replaced. No special equipment is needed to install BlazeMaster CPVC, eliminating the cost of buying and maintaining specialized tools.



Listed for Diverse Facilities

BlazeMaster Fire Sprinkler Systems are UL listed for use in light hazard occupancies as defined by NFPA 13, 13R and 13D. That means it provides the best solution for applications like:

- Schools
- Healthcare facilities
- Offices
- Places of worship
- Fire stations
- Prisons
- Seating areas
- Multifamily residential complexes
- Single-family residences

- 4. Fast onsite fabrication.** With steel pipe, parts of the fabrication are often performed offsite in advance by a fabricator, which adds cost and time. By contrast, BlazeMaster Fire Sprinkler Systems are fabricated onsite to streamline design and installation.
- 5. Simpler design alterations.** When plans change, it's easy to adapt BlazeMaster CPVC. With steel pipe, parts of the system may have to go back to offsite fabrication and rework is costly.

The BlazeMaster Fire Protection Systems Advantage

BlazeMaster Fire Sprinkler Systems: Engineered for Performance

BlazeMaster CPVC is a thermoplastic made from a base PVC polymer that has been fortified with additional chlorine molecules. The extra chlorine, along with specialized additives, enables BlazeMaster Fire Sprinkler Systems to stand up to intense heat and pressure.

When directly exposed to flame, BlazeMaster CPVC maintains its structure and retains its internal pressure to ensure water is delivered to suppress a fire. A charring layer forms on the outside of the pipe, which functions as a thermal barrier, while the water flowing through the pipe cools the inside.

BlazeMaster Fire Protection Systems:

- Will not sustain a flame
- Limits smoke generation
- Does not melt
- Resists corrosion and scaling
- Meets the requirements of UL 1821

Case Study: BlazeMaster Fire Protection System Streamlines Retrofit of Large School District

Retrofitting a school building can be tricky as the facilities are used even after school and on weekends. Broward County Schools found a solution by using BlazeMaster Fire Sprinkler Systems to bring its buildings up to code with minimal disruption. The key: an installation process that's easier, cleaner and quieter than steel pipe.

"The flexibility of CPVC allows you to make changes on the fly, if necessary. The product allows you to work above ceilings in an occupied building with little to no interruption of operations."

—Tim O'Brien, Sprinklermatic

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BlazeMaster Fire Protection Systems have become the accepted norm in the engineering design community... it is definitely used throughout major light hazard projects in this region more than metal. For contractors, BlazeMaster CPVC is much easier to handle, lighter in weight, easier to cut, fit and make changes on the job site, and they allow you to get into tighter spaces with less difficulty.

—Enrique Suarez, Jr., Mechanical Engineer,
Engineering/design of fire sprinkler retrofit
at Fontainebleau Towers, Miami Beach



The BlazeMaster Fire Protection Systems Advantage

Meet Tight Deadlines with Faster, Less Disruptive Installation

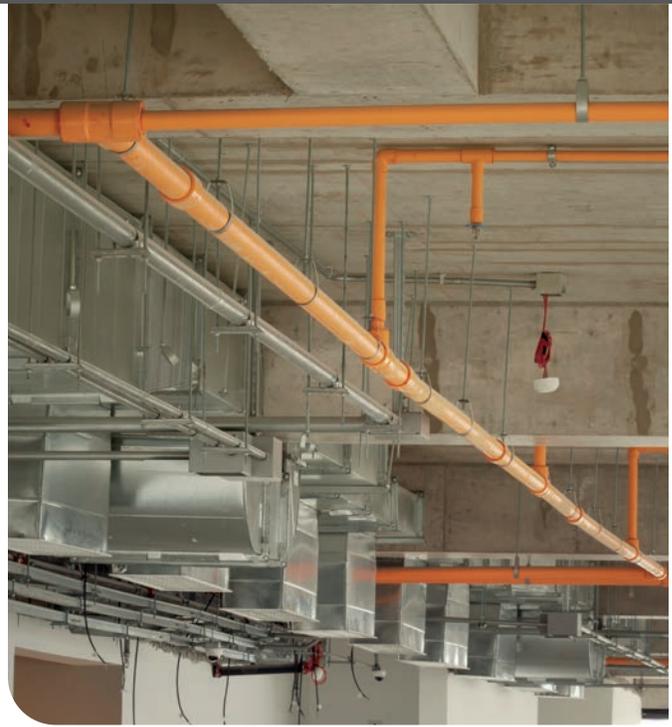
The inherent flexibility and simple solvent cement joining process of BlazeMaster Fire Sprinkler Systems translate to speed of installation. This can be especially critical in meeting tight deadlines.

Equally important, installation is much less disruptive for building occupants. With steel installation, occupants typically must vacate the property. With BlazeMaster CPVC by contrast, contractors can work around occupants without noise and open flame.

Reduce Maintenance Costs

Unlike traditional steel systems, BlazeMaster Fire Sprinkler Systems are not prone to corrosion or mineral build-up (scaling) that can require costly repairs or result in system failure. BlazeMaster CPVC resists corrosion and scaling even in demanding environments such as in salt air or where water pH levels fluctuate.

With steel pipe, the combination of water, treatment chemicals and oxygen can cause corrosion to start within



two years. About one-third of wet sprinkler systems have significant corrosion issues after 25 years, according to a study by a German fire safety firm.

Maintenance costs are lower, especially given that BlazeMaster Fire Protection Systems are designed for a long service life. If repairs are necessary, they are relatively simple for the same reasons installation is easier compared with steel systems. By comparison, steel pipe requires hot work and messy cutting oils.

Case Study: Contractor Meets Tight Deadline on High-Rise Retrofit

BlazeMaster Fire Protection Systems provided the right solution for retrofitting a 338-unit high-rise apartment building in Fort Lauderdale. The facility was one of hundreds of older high-rise residential buildings in Florida that needed to comply with new state fire sprinkler requirements. The contractor, Sprinklermatic, recommended BlazeMaster Fire Sprinkler Systems to make the retrofit faster, less disruptive and less expensive than using steel. The work was completed against a tight state-mandated deadline.

“It’s faster and it reduces the pain (for customers). The quicker I’m able to get crews in and out, the faster building residents can get back to a normal life – and that’s what they’re concerned about.”

—Robin Collier, Sprinklermatic President



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The BlazeMaster Fire Protection Systems Advantage

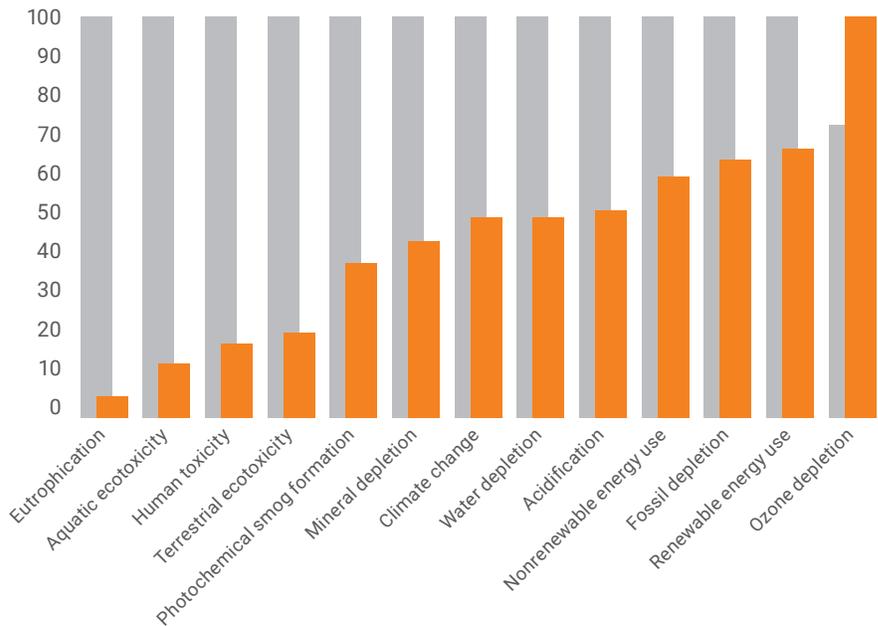
Improve Sustainability

Eco-friendly building techniques are important in health-care, and BlazeMaster Fire Sprinkler Systems offer significant advantages over steel pipe. An [ISO-compliant lifecycle assessment](#) found that BlazeMaster CPVC is

much less harmful to produce and have half the climate change impact of steel pipe. In fact, BlazeMaster Fire Protection Systems outperformed steel in 12 out of 13 categories, including human toxicity, mineral and water depletion, nonrenewable energy use and others.

Environmental Performance Gap

■ BlazeMaster Fire Sprinkler System
■ Steel Piping System



Case Study: Hospital Retrofit Puts Patients First

Mercy Hospital, a 476-bed hospital serving central and southeastern Ohio, turned to BlazeMaster Fire Protection Systems for a 60,000- square-foot renovation over three floors. To avoid disruption for patients and staff, the installation needed to be clean, quiet and fast. In planning the project, contractor S.A. Communale recognized that the facility’s drywall ceilings would present problems if they used steel pipe for the retrofit.

By using BlazeMaster CPVC the contractor eliminated the mess and noise created by cutting and threading steel pipe. S.A. Communale completed the retrofit using a two-person crew installing the fire protection system in an average of two rooms per day – twice the rate of a steel system. Most important for Mercy, patients did not need to be evacuated during the installation.

“We explained to Mercy that CPVC pipe was the best possible material for their installation. In hospitals, CPVC fire sprinkler systems make the most sense because of the space constraints. There’s no space above the ceilings and plastic fittings require less space than steel.”

—Steve Communale, S.A. Communale Inc.



The BlazeMaster Fire Protection Systems Advantage

Choose the Right Orange

While there are different brands of CPVC pipe and fittings, BlazeMaster Fire Protection Systems offers important advantages:

No guesswork on chemical compatibility. There's no need to dig out your high school chemistry book when determining if construction materials are compatible with BlazeMaster CPVC. Just consult the [FBC™ System Compatible Program](#) website. You'll find a comprehensive list of materials approved for use with BlazeMaster Fire Sprinkler Systems as well as a list of materials known to be incompatible. Please note that the FBC System Compatible Program applies only to Lubrizol brands of CPVC, including BlazeMaster Fire Protection Systems, not competing brands.

Performance measures. Based on demanding ASTM testing, BlazeMaster Fire Sprinkler Systems outperformed a competing brand on burst and impact-resistance testing.

Contractors and engineers can confidently specify BlazeMaster CPVC to the highest available pressure rating.

Unmatched support. BlazeMaster Fire Sprinkler Systems are backed by industry-leading training and support, and world-class manufacturing partners with proven records of producing the highest quality materials, in compliance with our Quality Assurance Program.

One-stop shopping. BlazeMaster Fire Protection Systems manufacturing partners are also the top fire protection products manufacturers in the world. All materials, for a fire sprinkler system can be sourced from one place. There is no need to mix and match products or go through the hassle of dealing with multiple vendors.

Find out more about how BlazeMaster Fire Sprinkler Systems are right for your project. Visit [BlazeMaster.com](#)





 **BlazeMaster**[®]
FIRE PROTECTION SYSTEMS

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The FBC™ System Compatible Program is a resource made available to manufacturers of ancillary products intended to be used with CPVC to help determine whether a product is chemically compatible with Lubrizol's FlowGuard®, BlazeMaster CPVC®, Corzan®, and products made with TempRite® Technology. Other manufacturers and/or brands of CPVC piping have not been tested as part of the FBC™ System Compatible Program. The FBC™ System Compatible program is, therefore, only applicable to the chemical compatibility of ancillary products with the Lubrizol brands of FlowGuard®, BlazeMaster CPVC®, Corzan®, and products made with TempRite® Technology. This distinction is made because every brand of CPVC piping is made with unique compounds, some of which may contain resins with different molecular weights and varying chlorine content. These characteristics directly impact the performance of the resulting product. Similarly, various CPVC products contain different performance additives. This too affects the performance characteristics of the ancillary product. For these reasons, Lubrizol has no responsibility for any failures occurring as a result of using products in the FBC™ System Compatible Program with CPVC products other than FlowGuard®, BlazeMaster®, Corzan®, and products made with TempRite® Technology.