

# Commercial Building Fire Protection Systems



SCIENCE. SERVICE. SAFETY.

## Save Time and Money with BlazeMaster® Fire Sprinkler Systems

Approved for any light hazard application, BlazeMaster® Fire Protection Systems provides a wide range of advantages over steel pipe:

- Lower material cost
- Efficient installation with a one-step solvent cement process that can be completed quickly by trained personnel
- Corrosion resistance, which reduces long-term maintenance expenses and ensures sprinkler operation
- Clean and quiet install process, meaning less disruption for building occupants during retrofits
- Less environmental impact to support green building projects

These are key reasons why BlazeMaster Fire Protection Systems is the most specified non-metallic piping system in the world—a proven choice for any light hazard project.

## Diverse Commercial Applications

There's a widespread misconception that BlazeMaster fire sprinkler systems are restricted to residential projects. In fact BlazeMaster pipe and fittings are UL listed for use in light hazard occupancies as defined by NFPA 13, such as:

- Clubs
- Museums
- High-rises
- Schools
- Offices
- Places of Worship
- Hospitals
- Institutional
- Theaters and Auditoriums
- Libraries
- Nursing Homes

## The Rise of BlazeMaster Fire Sprinkler Systems

CPVC (chlorinated polyvinyl chloride) was invented and commercialized by BFGoodrich, now Lubrizol, over 50 years ago. BlazeMaster Fire Protection Systems launched in 1984 and has dependably protected people and property around the world ever since. More than 2 billion feet of BlazeMaster pipe have been installed globally.



## Case Study: BlazeMaster Streamlines Office Retrofit

Switching from steel pipe to BlazeMaster Fire Protection Systems saved \$21,000 on a retrofit of a commercial complex in Sacramento, California. Since the ceiling had been removed, the contractor assumed it would be easy to install steel pipe, but fitting the pipe into the trusses proved problematic. The change to BlazeMaster pipe and fittings not only made the fit into the trusses a non-issue, but also reduced labor leading to dramatic cost savings. Maintenance costs will be lower because, unlike steel pipe, BlazeMaster fire sprinkler systems do not corrode. In addition, there was minimal disruption to the building tenants as work was completed.

“Using BlazeMaster fire sprinkler systems was not top of mind for me prior to this project, but now I’ll always consider BlazeMaster CPVC for commercial retrofits as well as residential applications.”

— Alwest Fire Protection

[View Full Case Study](#)

## Save Time and Money

Compared with steel pipe, BlazeMaster pipe and fitting systems can save up to 30% on labor and material costs. Here are five reasons why:

- **Superior hydraulics saves on material costs.** With a C-Factor of 150, compared to 120 for steel, system designers can specify smaller diameter pipe while ensuring the same level of water flow.
- **Streamlined installation method reduces labor costs.** Lightweight BlazeMaster pipe and fittings are easy to move around a job site, and the one-step solvent cement welding process means fabrication and installation is a one-person job. That reduces labor costs compared to steel, which requires multiple installers.
- **No expensive tools required.** With BlazeMaster Fire Protection Systems, installation is completed using basic hand tools. By comparison, steel requires torches, threading machines, pipe wrenches and more. Lost or stolen tools add considerably to the cost of installing steel pipe, as well as the heavy equipment often needed to transport steel around a job site. BlazeMaster pipe and fitting systems reduce mobilization time and expense because fitters spend more time installing pipe and less time carrying power machines around a job site.
- **Onsite fabrication streamlines design and install.** With steel pipe, parts of the fabrication are often performed offsite in advance by a fabricator, which adds another step—and therefore cost and time—in the process. By contrast, BlazeMaster fire sprinkler systems are fabricated onsite.
- **Simple design alterations reduce costs for rework.** It's easy to make onsite modifications to a BlazeMaster pipe and fitting systems when plans change. Unlike steel, there's no need to wait for new pieces from the offsite fabricator.

## Meet Tight Deadlines

The fast, simple installation method for BlazeMaster Fire Protection Systems helps contractors meet the tightest timelines.

## Ensure Long-Term Performance with Lower Maintenance Costs

Unlike BlazeMaster CPVC, steel is prone to three serious issues:

- **Corrosion** eats away at the interior of the pipe, creating friction along the surface and eventually causing pinhole leaks that result in costly, disruptive repairs. The combination of water, water treatment chemicals and oxygen can cause corrosion to start within as little as two years after installation.
- **Scaling** occurs when minerals in the water attach to the pipe, usually near fittings and corners. Like corrosion, scaling can restrict water flows and diminish performance.
- **Microbiologically Influenced Corrosion (MIC)** accelerates corrosion, infects the water supply and creates system failure.

BlazeMaster pipe and fitting systems prevent all three of these problems. BlazeMaster CPVC is naturally resists corrosion—even in salt air environments and areas with fluctuating pH balances. BlazeMaster is also naturally immune to scaling and MIC. As a result, BlazeMaster fire sprinkler systems can perform for 50 years or more when installed according to specifications. If piping repairs or a change in sprinkler head or drop is needed, BlazeMaster pipe and fittings can be easily cut out and replaced with minimal cost or interruption.

## BlazeMaster Fire Protection Systems Delivers Cost Savings for New School

A West Texas school district saved 5-10% by using BlazeMaster fire sprinkler systems instead of steel on a 140,000 square foot school for 700 students in grades K-8. The BlazeMaster Fire Protection Systems team supported the sprinkler service provider in collaborating with the school board and ensuring successful inspections by the Authority Having Jurisdiction. Throughout the project, BlazeMaster fire sprinkler systems proved to be a more easily adaptable system than steel in accommodating design alterations.

“The many design alterations throughout the construction made the use of BlazeMaster pipe and fitting systems a more easily adaptable system than steel, which would have required refabbing in the field.”

— SFS Security Systems



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## BlazeMaster Fire Sprinkler Systems Help Meet Compressed Timeline with Live-Work-Play Project

BlazeMaster pipe and fittings were a natural choice for a project in Atlanta that combined offices with retail, hotel and residential space. Facing unprecedented market demand, the developer needed the project completed quickly. Using BlazeMaster fire sprinkler systems, the contractor was able to tighten construction schedules and deliver the project on time.

“Whenever we’re facing a tight deadline, we recommend BlazeMaster Fire Protection Systems.”

— Affordable Fire Protection



[View Full Case Study](#)

### Minimize Disruption During Retrofits

The clean, quiet installation method for BlazeMaster fire sprinkler systems also ensures contractors can complete work with limited disruption to ongoing operations. The noise, open flames and large work crews required for steel installation mean occupants typically must vacate a building.

### Meet Sustainability Goals

Compared to steel pipe, BlazeMaster pipe and fittings offer significant ‘green’ advantages for those committed to eco-friendly building techniques. It is much less harmful to produce and has half the climate change impact.

In fact, BlazeMaster fire sprinkler systems outperform steel systems in 12 out of 13 environmental categories, including climate change impact, metal depletion and energy consumption. For details, see the [ISO-compliant, peer-reviewed life-cycle assessment](#)

### BlazeMaster Fire Sprinkler Systems: The Right Choice for Commercial Fire Protection

For your next commercial project, BlazeMaster pipe and fittings offer clear advantages over steel pipe—and other brands of CPVC. Key advantages over competing brands:

- **Easy access for understanding chemical compatibility.** The [FBC™ System Compatible Program](#) website provides everything you need to know to ensure ancillary materials are compatible with BlazeMaster fire sprinkler systems. This important resource applies only to Lubrizol brands of CPVC, including BlazeMaster pipe and fittings systems.
- **Superior performance on burst and impact resistance tests.** BlazeMaster fire sprinkler systems are engineered to exceed ASTM standards for strength. Contractors and engineers can confidently specify BlazeMaster fire sprinkler systems to the highest available pressure rating.

- **Industry-leading support and training.** BlazeMaster Fire Protection Systems offers [a variety of training formats](#) to fit any schedule, and [world-class manufacturing partners](#) produce the highest-quality materials in compliance with our Quality Assurance Program.
- **One-stop shop.** When you choose BlazeMaster fire sprinkler systems, there’s no need to mix and match brands or deal with multiple vendors for a single job—you can purchase every part of the sprinkler system from one brand.

### World-Class Manufacturing Partners

The BlazeMaster CPVC compound is exclusively engineered and produced by Lubrizol Advanced Materials and then extruded and molded into pipe and fittings by our partner manufacturers—Tyco, Viking, and IPEX. Each of our partner manufacturers are selected because of their proven track record of quality and production capabilities. In addition, each partner is required by Lubrizol to satisfy BlazeMaster’s Quality Assurance Program, ensuring that BlazeMaster CPVC is the highest quality pipe and fitting system of its kind.

### Specifications and Innovative Uses for BlazeMaster Pipe and Fitting Systems

You can find the detailed specification for installing BlazeMaster fire sprinkler systems [here](#). In addition, keep in mind that BlazeMaster pipe and fittings are approved for use in unique applications such as:

- **Poured concrete.** BlazeMaster fire sprinkler systems have a unique Underwriter’s Laboratory listing for embedding in concrete walls and ceilings. Embedding BlazeMaster pipe and fittings within a concrete ceiling hides the fire sprinkler system to improve aesthetics and eliminates the cost of drop ceilings and fire sprinkler system hangers.

- **MRI rooms and other healthcare settings.** A BlazeMaster fire sprinkler system is the right choice for special settings such as MRI rooms, where non-ferrous materials must be used to protect sensitive equipment from electrical and magnetic interference. In other areas with sensitive equipment, BlazeMaster CPVC is less likely to interfere with wireless connections that are now common in healthcare.
- **Drain pipes.** While there's a long-standing myth that steel is required for drain pipes, BlazeMaster pipe and fitting systems are permitted under NFPA guidelines and help prevent leaks and reduce total cost of ownership.
- **Low-pressure dry/preaction systems.** Where required to prevent freezing, BlazeMaster fire sprinkler systems are an optimal choice for streamlining installation and reducing costs.
- **Aspirating smoke detection systems.** BlazeMaster pipe and fitting systems are an ideal choice for these systems, used in active fire protection, that draw air through a network of pipes to detect smoke and trigger the sprinkler system.

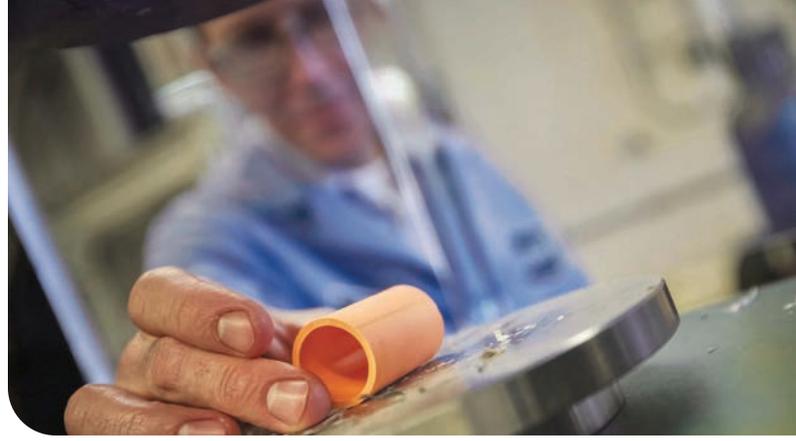
## Easy Installation on Hospital Retrofit Puts Patients First

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, the sprinkler contractor recognized that the facility's drywall ceilings would present problems if they used steel pipe for the retrofit.

By using BlazeMaster pipe and fittings, the contractor eliminated the mess and noise created by cutting and threading steel pipe. The retrofit was completed using a two-person crew installing the fire sprinkler 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 BlazeMaster Fire Protection Systems 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."

— S.A. Communale, Inc.



## The Science of Safety

When installed per its listings, BlazeMaster pipe and fittings resist heat and fire and maintain its structure when directly exposed to flame to ensure water is delivered to suppress a fire. That's because 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 the material to reliably stand up to intense heat and pressure.

When CPVC is exposed to fire, a charring layer is formed on the outside of the pipe and fittings, which then functions as a thermal barrier that reduces the conduction of heat. Water flowing through the piping system will also cool the inside to further resist heat. BlazeMaster fire sprinkler systems have been listed by UL to UL1821 and approved by FM to FM1635.

Equally important, BlazeMaster pipe and fittings offer superior hydraulics compared with steel pipe. Because they feature a smoother interior surface, water flows with less friction than in steel pipe. And the hydraulic performance of steel will decline over time due to corrosion and scaling (mineral buildups).

**Find out more about how BlazeMaster Fire Protection Systems is right for your commercial project.**

**VISIT [BLAZEMASTER.COM](https://www.blazemaster.com)**



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