



eBOOK



SCIENCE. SERVICE. SAFETY.

Addressing 6 Common Misconceptions About CPVC Fire Protection Systems

Engineered for fire protection through groundbreaking research and development at Lubrizol, BlazeMaster® Fire Protection Systems are a proven alternative to steel pipe. But despite a proven track record of providing dependable solutions that save time and money, some in the fire protection industry still have reservations about the performance of CPVC.

A grayscale background image showing a hand holding a CPVC fire protection nozzle. The nozzle is white and has a circular, serrated tip. The hand is wearing a dark sleeve. The background is dark and out of focus.

In This eBook, We Set the Record Straight on Six Common Misconceptions:

Misconception 1: “CPVC won’t perform as well as steel and could even melt in a fire”

Misconception 2: “All brands of CPVC are the same”

Misconception 3: “CPVC is too expensive”

Misconception 4: “CPVC is bad for the environment”

Misconception 5: “CPVC is only for single-family and multi-family structures”

Misconception 6: “CPVC is difficult to install”

By sharing the facts about CPVC, you can make informed decisions about your upcoming projects.

Facts about BlazeMaster Fire Protection Systems:

- Proven protection for people and property since 1984
- Over 2 billion feet installed globally
- The most specified non-metallic piping system in the world



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BlazeMaster CPVC has become the accepted norm in the engineering design community, and is 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, HNGS
Retrofit at the Fontainebleau Towers in Miami Beach, Fla

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MISCONCEPTION 1

“CPVC won’t perform as well as steel and could even melt in a fire”

THE TRUTH

BlazeMaster CPVC, when installed per its listings, resists heat and fire and maintains its structure when directly exposed to flame. This ensures water is delivered to suppress a fire. That’s why BlazeMaster CPVC has been listed by UL to UL1821 and approved by FM to FM1635.

When BlazeMaster CPVC is exposed to fire, a charring layer forms on the outside of the pipe and fittings. This layer 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.

As steel piping corrodes, water flow levels drop. BlazeMaster CPVC, however, keeps the piping system ready for an emergency because it resists scaling and corrosion for the service life of the system while providing natural immunity to microbiologically influenced corrosion (MIC).

BlazeMaster Fire Protection Systems also offer superior hydraulics compared to steel, which yields a maximum flow of water for extended sprinkler head coverage. BlazeMaster CPVC’s C-Factor of 150, compared to steel’s 120, translates to substantial savings in material costs.



MISCONCEPTION 2

“All brands of CPVC are the same”

THE TRUTH

Compared head-to-head against the competition by an independent laboratory, BlazeMaster Fire Protection Systems came out on top in pressure burst testing and impact resistance.

- In pressure testing with 1-inch pipe, BlazeMaster CPVC withstood up to 1,579 PSI, while Spears FlameGuard Pipe, which only held up to 1,413 PSI.
- In impact testing with 1-inch pipe, BlazeMaster CPVC withstood up to 41.3 ft./lbs, while Spears FlameGuard Pipe’s limit was 31.8 ft./lbs.

BlazeMaster Fire Protection Systems is supported by the FBC™ System Compatible Program, the oldest and most trusted chemical compatibility program in the industry. FBC™ System Compatible provides contractors and building owners the information they need about which ancillary products will work with BlazeMaster CPVC – and which ones won’t. This program is exclusive to BlazeMaster Fire Sprinkler Systems – it does not apply to other CPVC brands. Visit the FBC™ System Compatible website www.fbcssystemcompatible.com to learn more.

MISCONCEPTION 3

“CPVC is too expensive”

THE TRUTH

With a lightweight fabrication and easy joining system, BlazeMaster Fire Protection Systems offers a variety of advantages over traditional steel systems that save money through:

- Faster installation. While installing heavy steel pipe typically requires teams of two or more people, installation of lightweight BlazeMaster CPVC is a one-person job that is completed with basic hand tools and a quick, one-step solvent cement process. Better yet, no prefabrication is required.
- Lower material costs. BlazeMaster CPVC offers superior hydraulics over steel, so designers can often use smaller diameter pipe and fittings.
- Lower maintenance costs. Unlike steel pipe, BlazeMaster Fire Sprinkler Systems will not corrode, which reduces costly repairs and delivers a superior total cost of ownership.

Case Studies

- Fast, easy design and installation of a BlazeMaster Fire Protection System enabled a school district in Texas to save 5% to 10% compared to steel.
- In Sacramento, California retrofitting a 24,000-square-foot office complex with BlazeMaster CPVC reduced labor by about 100 man-hours and saved the building owner \$21,000. Those savings will grow over time because CPVC does not corrode, which eliminates costly repairs.



BlazeMaster Fire Protection Systems emerged as a much stronger choice for an environmentally friendly fire sprinkler solution.

Michael Collins, Technical Director
Environmental Resources Management



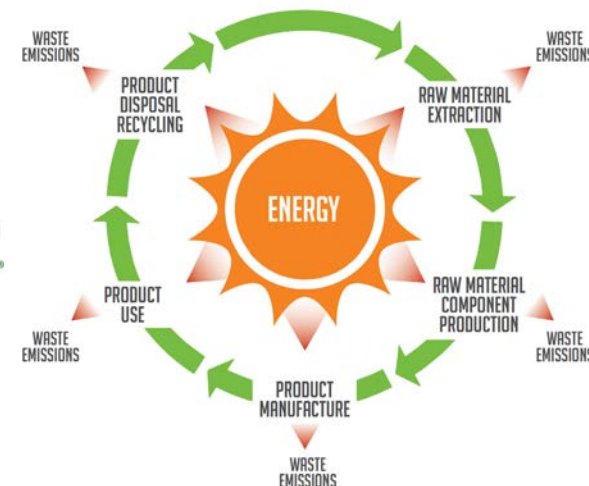
MISCONCEPTION 4

“CPVC is bad for the environment”

THE TRUTH

According to an ISO-compliant, peer-reviewed life-cycle assessment, BlazeMaster Fire Protection Systems outperform steel in 12 out of 13 environmental categories, including:

- Climate change impact
- Metal depletion
- Energy consumption



BlazeMaster Fire Protection Systems has half the climate change impact compared to steel, doing our part to keep the environment healthier for longer.

[See the full life-cycle assessment document.](#)



MISCONCEPTION 5

“CPVC is only for single-family and multifamily structures”

THE TRUTH

UL listed and FM approved, BlazeMaster Fire Protection Systems is listed for all light hazard occupancies as defined by:

- NFPA 13: Standard for the Installation of Sprinkler Systems
- NFPA 13R: Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies
- NFPA 13D: Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

That means BlazeMaster CPVC is listed for use and has been successfully installed in light hazard occupancies as defined by NFPA 13, including:

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|-------------|-----------------|----------------------------|
| ■ Schools | ■ Libraries | ■ High rises |
| ■ Offices | ■ Museums | ■ Places of worship |
| ■ Hospitals | ■ Institutional | ■ Theaters and auditoriums |
| ■ Clubs | ■ Nursing homes | |

Additionally, BlazeMaster CPVC can be installed in ordinary hazard rooms of otherwise light hazard occupancies where the room does not exceed 400 ft² (37m²) per NFPA 13.

MISCONCEPTION 6

“CPVC is difficult to install”

THE TRUTH

BlazeMaster Fire Protection Systems can be installed with a quick and simple one-step joining system:

1. Cut pipe squarely
2. Remove burrs and filings
3. Fit the pipe
4. Apply cement to the outside of the pipe
5. Apply cement to the inside of the fitting socket
6. Insert pipe end into socket while rotating the pipe a ¼ turn and hold for 30 seconds

Because BlazeMaster CPVC is easier to install, it offers a variety of advantages over steel pipe:

- Reduces installation time, and therefore costs, compared to steel
- Eliminates the need for torches or heat-fusion techniques, providing a cleaner and quieter installation
- Eliminates the need for pre-fabrication
- Allows for more installation flexibility in tight spaces and hard-to-reach areas
- Minimizes disturbance to tenants during retrofit installations

In addition, our comprehensive training resources help installers, contractors and distributors understand best practices to ensure efficient, high-quality installations. Training is offered through live online sessions, online self-paced modules, and in-person meetings.





Science. Service. Safety.

At BlazeMaster Fire Protection Systems, “Science. Service. Safety” is more than a tagline. It is the foundation on which we build our industry leadership.

- **Science.** Our scientists work together with our manufacturing partners to continually enhance our compound formulations to meet the needs of the global fire protection market.
- **Service.** Our team continuously collaborates with our customers to identify unmet needs and expand the applications in which BlazeMaster CPVC is listed.
- **Safety.** BlazeMaster Fire Sprinkler Systems meet or exceeds all standards, codes and approvals to be a trusted material choice in the fire sprinkler industry.

BlazeMaster Fire Sprinkler Systems representatives are available to speak with you about any questions you may have about BlazeMaster CPVC, or your next fire protection job.

REQUEST A CONSULTATION
Our Team of Product and
Engineering Experts is
Always Available

CONTACT US ►



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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.