ADDRESSING 6 COMMON MISCONCEPTIONS **ABOUT CPVC FIRE PROTECTION SYSTEMS**



Engineered for fire protection through groundbreaking research and development at Lubrizol – pioneers of the chlorinated polyvinyl chloride (CPVC) fire sprinkler system almost 40 years ago – BlazeMaster[®] pipe and fittings technology continues to set the industry standard.

Although BlazeMaster Fire Protection Systems has a proven track record of cost-effective and time-saving installations and retrofits, some installers and specifiers still have reservations about the durability and strength of CPVC. More and more, though, its advantages over steel are making BlazeMaster CPVC the preferred material in many instances.

Enrique Suarez, Jr., the mechanical engineer at Hufsey, Nicolaides, Garcia, Suarez Associates, Inc. (HNGS), was responsible for the engineering and design work at the Fontainebleau Towers in Miami Beach, Florida. He's enthusiastic about the shift.

"BlazeMaster CPVC has become the accepted norm in the engineering design community... it is definitely used throughout major light hazard projects in this region more than metal," said Suarez. "For contractors, BlazeMaster CPVC pipe and fittings are 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."

This slide deck has been created to give you the most common misconceptions held about CPVC fire protection systems - and reasons why these myths should be extinguished.

If you have any questions regarding the installation of CPVC fire protection systems in your next project, <u>get in touch with our team of experts.</u>

GET IN TOUCH



THE RISE OF CPVC

CPVC, or chlorinated polyvinyl chloride, was invented and commercialized by BFGoodrich, now Lubrizol, over 50 years ago. Since its launch as BlazeMaster Fire Protection Systems in 1984, it has become an advantageous alternative material to steel in fire sprinkler systems:



BlazeMaster Fire Protection Systems has been reliably protecting people and property from fire for nearly 40 years



Over 2 billion feet of BlazeMaster CPVC pipe has been installed globally



BlazeMaster CPVC is the most specified non-metallic piping system in the world



COMMON MISCONCEPTIONS

Despite these facts, some installers, specifiers, builders and architects still hold misconceptions of CPVC:





BANISH YOUR MISCONCEPTIONS

Unfortunately, these misconceptions about CPVC are all too common in the fire protection industry. That is why this slide deck has been created – to provide you with the facts about CPVC, allowing you to make an informed decision on your next job.



MISCONCEPTION 1 "IT 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 effectively suppress a fire.

- BlazeMaster CPVC piping systems have been listed by UL to UL1821 and approved by FM to FM1635.
- 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.





MISCONCEPTION 1 "IT WON'T PERFORM AS WELL AS STEEL, AND COULD EVEN MELT IN A FIRE"



THE TRUTH

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 service life of the system
- Provides natural immunity to microbiologically influenced corrosion (MIC)

BlazeMaster CPVC piping systems offer superior hydraulics compared to steel that:

- Yields maximum flow of water for extended sprinkler head coverage
- Achieves C-Factor of 150 for hydraulic capabilities
- Does not corrode over time, unlike steel



MISCONCEPTION 2 "ALL ORANGE PIPE IS THE SAME"

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. BlazeMaster 1-inch pipe scored higher in pressure burst testing and impact resistance than Spears FlameGuard[®] 1-inch pipe.

BlazeMaster also offers the FBC[™] System Compatible Program, the oldest and most trusted chemical compatibility program in the industry that provides contractors and building owners the information they need about which ancillary products will work with BlazeMaster – and which ones won't. This program is exclusive to BlazeMaster CPVC pipe and fittings – it does not apply to other CPVC brands. Visit the FBC[™] System Compatible website www.fbcsystemcompatible.com to learn more.





MISCONCEPTION 2 **"ALL ORANGE PIPE IS THE SAME"**



TRUTH

In pressure testing with 1-inch pipe, BlazeMaster[®] pipe withstood up to 1,579 PSI, while Spears FlameGuard[®] Pipe only held up to 1,413 PSI.

In impact testing with 1-inch pipe, BlazeMaster[®] pipe withstood up to 41.3 ft./lbs., while Spears FlameGuard[®] Pipe's limit was 31.8 ft./lbs.



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MISCONCEPTION 3 "CPVC IS TOO EXPENSIVE"

THE TRUTH

BlazeMaster CPVC offers a variety of cost-saving advantages over traditional steel systems, including:

- 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 cement process. Better yet, no pre-fabrication 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 CPVC will not corrode, which eliminates costly repairs and reduces total cost of ownership.





MISCONCEPTION 3 "CPVC IS TOO EXPENSIVE"



THE TRUTH

Fast, easy design and installation of a BlazeMaster fire sprinkler system enabled a school district in Texas to save 5% to 10% compared to steel.

In Sacramento, 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.



MISCONCEPTION 4 "CPVC IS BAD FOR THE ENVIRONMENT"

THE TRUTH

According to a 2011 ISO-compliant, peer-reviewed life-cycle assessment, BlazeMaster sprinkler systems outperform steel in 12 out of 13 environmental categories, including:

- Climate change impact
- Metal depletion
- Energy consumption

See the full life-cycle assessment document

ENVIRONMENTAL PERFORMANCE GAP

■ BlazeMaster Fire Protection Systems ■ Steel Piping System





MISCONCEPTION 4 "CPVC IS BAD FOR THE ENVIRONMENT"

THE TRUTH

This means that BlazeMaster fire sprinkler systems have half the climate change impact compared to steel, doing our part to keep the environment healthier for longer.

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

> MICHAEL COLLINS, TECHNICAL DIRECTOR ENVIRONMENTAL RESOURCES MANAGEMENT

> > **BlazelVlaster**[®] FIRE PROTECTION SYSTEMS

MISCONCEPTION 5 "CPVC IS ONLY FOR SINGLE-FAMILY AND MULTIFAMILY STRUCTURES"



THE TRUTH

UL listed and FM approved, BlazeMaster CPVC 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

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 5 "CPVC IS ONLY FOR SINGLE-FAMILY AND MULTIFAMILY STRUCTURES"

THE TRUTH

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

- Schools
- Offices
- Hospitals
- Light manufacturing facilities









MISCONCEPTION 6 "IT'S HARD TO INSTALL"

THE TRUTH

BlazeMaster Fire Protection Systems can be installed with a quick and simple joining process:

- 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 1⁄4 turn and hold for 30 seconds





MISCONCEPTION 6 "IT'S HARD TO INSTALL"



THE TRUTH

Because 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



MISCONCEPTION 6 "IT'S HARD TO INSTALL"

THE TRUTH

BlazeMaster CPVC is easier to install than steel, and our comprehensive training resources help contractors understand best practices to ensure efficient, high-quality installations. <u>Training is offered through live online sessions</u>, online self-paced modules, and in-person meetings.



Installation Best Practices

module within a course contains individual slides. These are listed below and will also need to be completed in order. Once ies have been completed, you will be returned to this page. At that point the Quiz at the bottom will be available. You will here opportunities to pass the quiz.

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Installation Best Practices Introduction	
Mandling and Donage Video	
BaseMaster Pipe & Fittings Handling & Storage	
Surlight Boosure	
Solvert Comert Storage and Handling	
Cold Weather Applications - Solvent Cement	
Cold Weather Applications - Pipe & PEtings	
Health and Safety Precautions	

MODULE STANDARDS, CODES & APPROVALS | SUDE & C

PIPE AND FITTINGS ASTM STANDARDS

 Pipe and Tetragis manufactured per ASTM standards
Blasshketer Corp Opio approved to marke a 25% higher pressure rating at 180°F (82°C). Unrelativities (as a more robust and durable system
Blasshketer CPCC-4130-06 (120 pui (206 kPa) at 73°F (23°C) & 100 pui (680 kPa) at 180°F (82°C)
Nan Blasshketer CPCC-4130-06 (120 pui (206 kPa) at 73°F (23°C) & 80 pui (551 kPa) et 180°F (82°C)



BlazeMaster _____ DPvC 4120-06 320 PSI @ 73% 100 PSI @ 180%
DPvC 4120-05 320 PSI @ 73% 80 PSI @ 180%
DPvC 4120-05 320 PSI @ 73% 80 PSI @ 180%

stallation Tips

SDB (Standard Dimension Rules) means that there is a constant ratio between the wall biolenses of the pipe and the outside diameter of the pipe.
The higher the SDB, the thirse the wall, is can sDB (B s pipe) has a bicker wall and an SDB (1 pipe).
The result of SDB pipe is that all sizes have the same temperature/pressure ratio.



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SCIENCE. SERVICE. SAFETY.

Whether you're an installer, specifier, builder or architect, we'd like to know if you hold any other misconceptions about CPVC.

Remember, not all orange pipe is the same. If you're looking for reliability for life, choose BlazeMaster Fire Protection Systems.

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

ARRANGE A FREE CALL



TO LEARN MORE VISIT OUR WEBSITE BLAZEMASTER.COM

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