BlazeMaster®
FIRE SPRINKLER SYSTEMS

A GUIDE TO RESIDENTIAL FIRE SPRINKLER SYSTEMS

What you need to know about a BlazeMaster® fire sprinkler system, the world's most specified non-metallic life safety piping system.

Modern installation with concealed sprinkler heads

FBC™
Building Solutions

BlazeMaster®
FIRE SPRINKLER SYSTEMS

FLOWGUARD GOLD®
PIPE & FITTINGS

Names you can trust.

Chances are you already know us. BlazeMaster® fire sprinkler systems are based on the same proven CPVC technology as FlowGuard Gold® pipe and fittings, the most specified non-metallic plumbing system in the U.S. Our high-performance CPVC products have been providing a highly reliable, corrosion-resistant, cost-effective plumbing solution to builders for more than 50 years.

As the inventor of CPVC technology, we offer an unmatched track record in the field, as well as a solid reputation for consistent quality and customer service. Together, BlazeMaster and FlowGuard Gold pipe and fittings offer an unbeatable combination of performance, reliability and cost effectiveness and meet all National Fire Protection Association (NFPA) 13, 13R and 13D as well as plumbing code requirements.

You have questions. We offer solutions.

Today there are more piping options than ever before. That means more questions and tougher decisions. Rigid or flexible piping? Multipurpose or stand-alone systems? FBC™ Building Solutions is the only company to offer a full array of piping solutions, including CPVC and PEX piping systems, as well as multipurpose and stand-alone fire sprinkler systems.

When it comes to something as important as choosing a life safety system for your customers, you can't afford to make the wrong decision. As a leader in piping technology, we have the experience and the technical support to be a valuable resource. Our commitment to supporting the market includes having technical specialists out in the field to provide hands-on demonstrations and training, as well as technical and code assistance to help ensure your systems are fully compliant.

Stand-alone vs. Multipurpose Systems.

There are two options when designing a plumbing system and fire sprinkler system for one-and two-family homes (NFPA 13D Applications). Each option offers its own distinct advantages which should be considered before choosing the one that best fits a specific application. The systems can be designed as separate systems (stand-alone) or combined in a single, multipurpose system. In a stand-alone system, the fire sprinkler system is installed as a separate system from the plumbing system.

A multipurpose system, as defined by NFPA 13D, is intended to service both domestic cold water and fire protection needs. Network, integrated, or looped systems are different types of multipurpose systems.

Stand-alone.

There are many reasons for choosing a stand-alone fire sprinkler system. Most notably from a life safety perspective, a stand-alone design ensures the integrity of each individual system by allowing the plumbing system to be shut off independently from the fire sprinkler system.

That means there is no adverse effect on the water supply of a fire sprinkler system while making repairs or modifications to the plumbing system. Stand-alone systems are universally approved in all U.S. jurisdictions. This removes the guesswork regarding code approval. Also, stand-alone systems are the only option when installing fire sprinklers for multi-family residences (NFPA 13R Applications). CPVC, iron or copper can be used in stand-alone systems, however, PEX is not approved.

CONSIDER YOUR OPTIONS BEFORE

Multipurpose.

Multipurpose systems, which can be created by combining BlazeMaster® fire sprinkler pipe and fittings with either a FlowGuard Gold® CPVC plumbing system or FlowGuard™ Flex PEX plumbing system, are attractive for other reasons. Since they can be installed completely by a plumber or in combination with a fire sprinkler contractor, they offer flexibility with the trades you choose to work with as jurisdictions may have different licensing requirements and expectations for installers. As a combination system, it will also likely require less pipe, which translates into environmental benefits, as well as potential material cost savings.

In addition, a BlazeMaster®/FlowGuard Gold® multipurpose system is the only design that provides the flexibility to use either CPVC or PEX fire sprinkler pipe. It is important, however, to check local code requirements before installation, as multipurpose piping systems are not approved in all jurisdictions.

LEFT – BlazeMaster® and FlowGuard Gold® multipurpose system
ABOVE RIGHT – BlazeMaster® stand-alone system

This Stand-alone System can easily become a Multipurpose System.

CHOOSING THE SYSTEM THAT BEST FITS YOUR NEEDS.

Comparing Stand-alone and Multipurpose Systems.

Feature	Stand-alone System	Multipurpose System
Future Plumbing Components (water softeners, filters, etc.)	Easily incorporated in design.	May affect original hydraulic design.
Water Flow Alarm	Easily incorporated in design.	If a water flow switch is required/desired, a special expensive flow switch is required to determine water flows.
Codes and Requirements*	Approved in all jurisdictions.	May not be approved in all jurisdictions.
Can Shut-off Plumbing System Independently of Fire Sprinkler System	Yes.	No.
Plumbing System Pressure Reducing Valves	No effect on fire sprinkler system.	May require increased pipe sizes.
Visible Signage	Not required.	Must be posted indicating multipurpose system is installed.
Material	PEX is not permitted.	PEX may be used.
Installer*	Typically a fire sprinkler contractor.	Plumber or fire sprinkler contractor.

**Verify local code requirements*

CPVC: A superior life safety solution and the most cost effective.

Once you choose a non-metallic fire sprinkler system, you have one more choice to make – CPVC or PEX. As the world's only manufacturer of both CPVC and PEX piping systems, we have extensive experience and knowledge regarding the strengths and weaknesses of both high-performance plastics. As a result, we are able to confidently recommend CPVC as the preferred material, largely based on its superior life safety performance. Plus, an all CPVC system is the most cost effective. Consider all the benefits an all-CPVC fire sprinkler piping system has to offer:

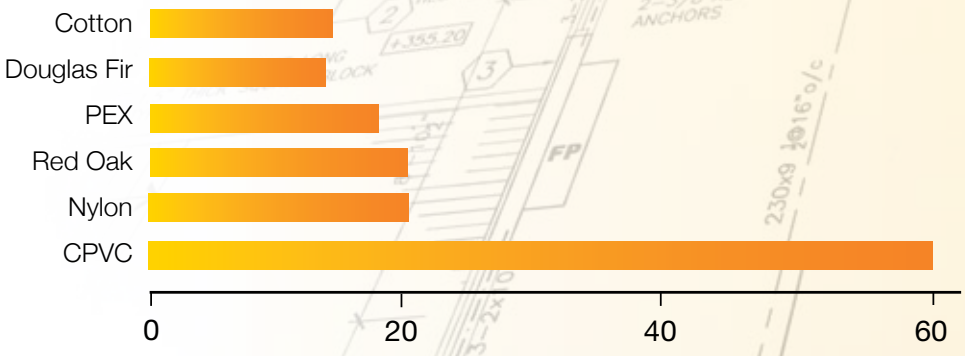
Superior flame and smoke properties – CPVC will not sustain burning. It must be forced to burn due to its very high Limiting Oxygen Index (LOI) of 60. LOI is the percentage of oxygen needed in any atmosphere to support combustion. Since the Earth's atmosphere is only 21% oxygen, CPVC will not burn unless a flame is constantly applied and stops burning when the ignition source is removed. PEX, on the other hand, will continue to burn long after the flame has been removed. Also, any smoke that is generated from CPVC is no more toxic than that from traditional building materials, such as wood. Universally approved – CPVC is the only non-metallic piping material approved for use in both multipurpose and stand-alone fire sprinkler systems. PEX, in contrast, is only approved for use in multipurpose systems.

Fast, easy, reliable installations – Our proven solvent cement joining system keeps projects on-time and within-budget. The joints are actually stronger than the pipe or fitting alone and can be pressure tested within a matter of minutes.

Design flexibility – With more listings and approvals than any other non-metallic fire sprinkler system, a BlazeMaster CPVC fire sprinkler system

CPVC is recommended for its superior life safety performance.

Limiting Oxygen Index (LOI) Comparison



LOI is the percentage of oxygen needed in an atmosphere to support combustion. High LOI of CPVC means that it cannot burn under normal atmosphere conditions.

can be efficiently installed in more applications, including exposed in unfinished basements or with sidewall heads to minimize freeze issues.

Color coding – Our CPVC piping systems are color coded to easily differentiate between the fire sprinkler system (orange pipe) and the plumbing system (tan pipe). This makes future renovations and repairs safer and easier to complete and pass inspection which, in turn, provides all parties added peace of mind regarding the long-term integrity of the system.

Superior water flow – Our systems, both stand alone and multipurpose, are less expensive to design and install, largely as a result of the superior water delivery. Manufactured to IPS (Iron Pipe Size) SDR 13.5 dimensions, BlazeMaster fire sprinkler pipe allows for increased water flow and fewer sprinkler heads over similarly sized multipurpose PEX systems. PEX, manufactured to CTS (Copper Tube Size) SDR 9 dimensions, has a small inside diameter and may limit the amount of water required to supply extended coverage sprinklers. This requires more sprinkler heads, more pipe and more cost.

Larger diameter of BlazeMaster pipe provides superior flow needed for extended coverage sprinklers which can reduce installation costs.

PERFORMANCE CHARACTERISTICS	BlazeMaster® and FlowGuard Gold® Pipe & Fittings	All – PEX Multipurpose Systems
Combustibility	Will not sustain combustion.	Easily sustained & propagated.
Cost	Most cost effective.	May be expensive.
Easy Inspection & Approval	Yes.	No, requires additional testing over CPVC systems.
Easy to Identify Plumbing and Fire Sprinkler Lines	Yes, color coded.	No, not color coded.
Water Flow	Full, unobstructed flow.	Smaller tube internal diameter of pipe can restrict flow.
Permeability	Not permeable by trace amounts of common aromatic solvents that may be present in soil due to pesticide applications.	Some solvents and pesticides may permeate through the wall of the pipe.
High Temperature Considerations	When installed in attics, no additional insulation is necessary on attic side of fire sprinkler pipe because pipe is rated to temperature of 150°F.	When installed in attics, adequate insulation must be provided on the attic side of fire sprinkler pipe to avoid exposure of piping to temperatures in excess of pipe's rated temperature of 120°F.
Affected by Chlorine or Common ORP Water Disinfectants	No.	Yes – some PEX is susceptible to disinfectants (ie. chlorine, chloramines).
Product Consistency	All compound and finished goods produced to one industry standard. Interchangeable pipe and fittings are available from various approved FlowGuard Gold and BlazeMaster pipe and fitting manufacturers.	Varies by manufacturer. System components must be purchased from single source.
Kinking	No.	Yes.
Hanger Spacing	Less hangers required.	More hangers required.

Make the right call.

Choosing the right installation partner is as important as choosing the right fire sprinkler system. You can rest assured you've partnered with highly trained fire sprinkler installers simply by asking to see their BlazeMaster training card. BlazeMaster Fire Sprinkler Systems leads the industry in promoting the value of training and best practices by offering the most comprehensive, hands-on training program in the fire protection industry. That's just one more reason to choose a BlazeMaster fire sprinkler system, as well as a fire sprinkler professional who's properly trained to install it.

For the most cost-effective, proven fire protection system – stand-alone or multipurpose – there is no better solution than BlazeMaster CPVC pipe and fittings.

Lubrizol

9911 Brecksville Road
Cleveland, Ohio 44141-3201 USA

888.234.2436 ext.4477393
216.447.5750 FAX

Visit **www.fbcbuildingsolutions.com**
or call **888-234-2436** ext. 447-7393
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