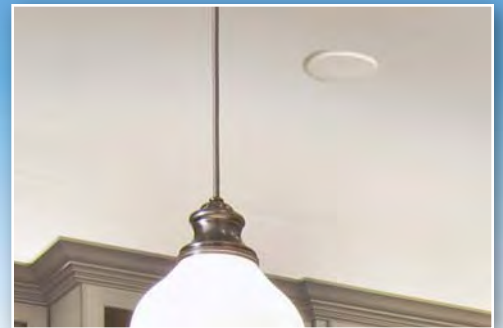
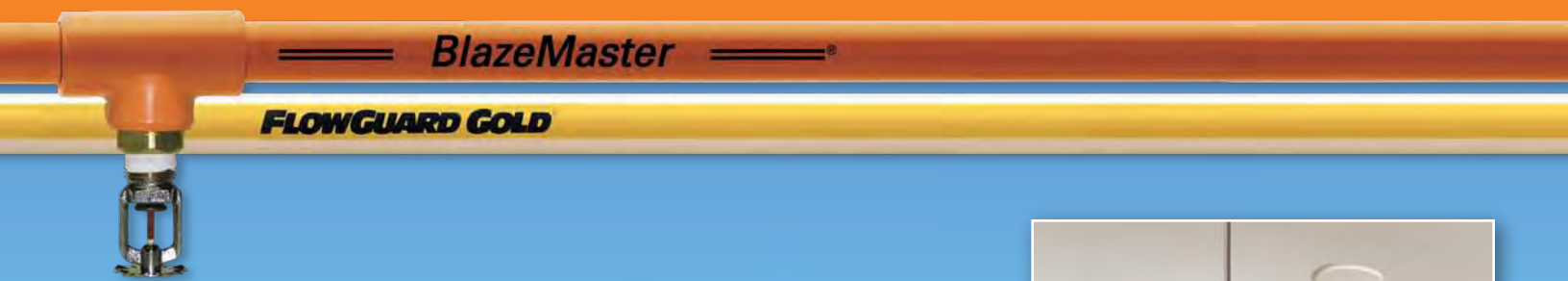


**BlazeMaster**<sup>®</sup>  
FIRE SPRINKLER SYSTEMS

# A GUIDE TO RESIDENTIAL FIRE SPRINKLER SYSTEMS



Modern installation with concealed sprinkler heads.





BlazeMaster®

FLOWGUARD GOLD




**BlazeMaster®**  
FIRE SPRINKLER SYSTEMS



### Names you can trust.

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

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 the requirements of National Fire Protection Association (NFPA) 13, 13R and 13D, as well as pertinent plumbing codes.



Let us help you choose  
a system that meets your  
specific needs.

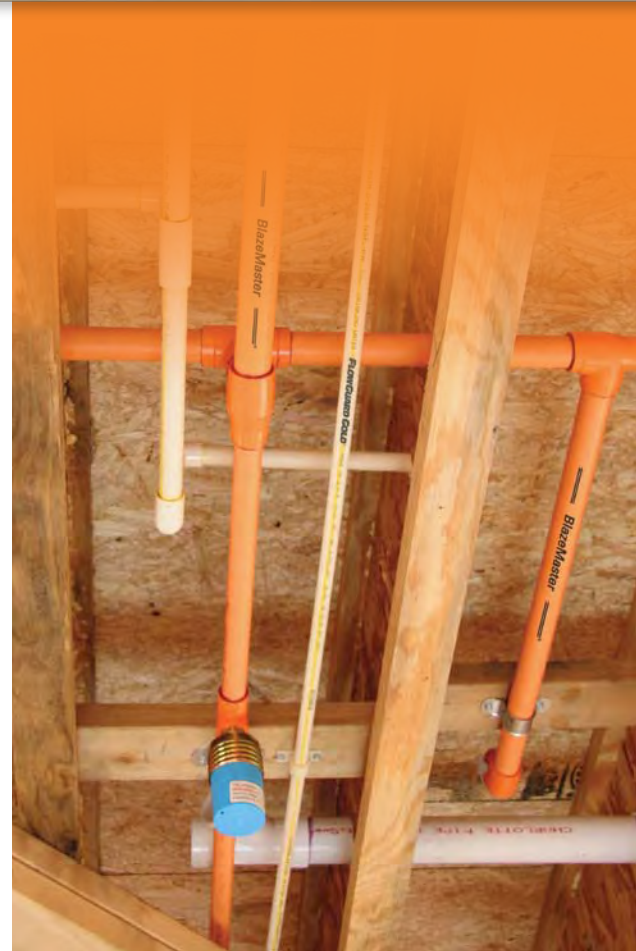
BlazeMaster

**FLOWGUARD GOLD**

## **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? Stand-alone or multipurpose systems? Lubrizol is the only provider to offer a full array of piping solutions, including stand-alone and multipurpose 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 expertise to be a valuable resource. We support the market with a national network of fire protection specialists who work 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.

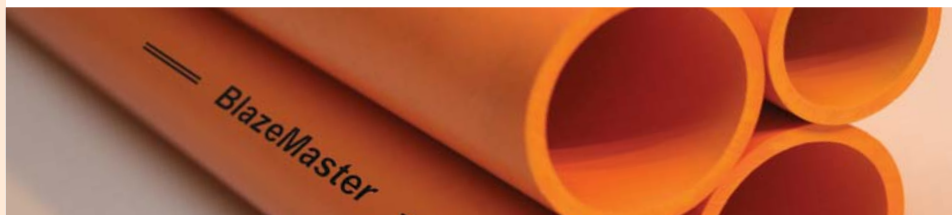
There are two options when designing a fire sprinkler system for one-and two-family homes (NFPA 13D applications). Each option offers its own distinct advantages which should be considered before choosing the one that best fits a specific application. With a stand-alone option, the fire sprinkler system is installed separately to work independently from the plumbing system.

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

## 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 for multi-family residences (NFPA 13R applications), as multipurpose systems are not approved for these applications.



# UNDERSTAND YOUR

## Multipurpose.

A multipurpose system which can be created by combining BlazeMaster® fire sprinkler pipe and fittings with a FlowGuard Gold® CPVC plumbing system is attractive for other reasons. **It can be installed completely by a plumber or in combination with a fire sprinkler contractor.** This means more labor options (depending on local licensing requirements). As a combination system, it will also likely require less pipe, which translates into environmental benefits, as well as potential material cost savings.

It is important, however, to check local code requirements before installation, as multipurpose piping systems are not approved in all jurisdictions.

**LEFT** – BlazeMaster multipurpose system

**ABOVE RIGHT** – BlazeMaster stand-alone system





This stand-alone system can easily become a multipurpose system.



# OPTIONS TO MAKE THE SMART CHOICE.

## Comparing Stand-Alone and Multipurpose Systems.

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

\*Verify local code requirements

## CPVC: A superior life safety solution.

Once you choose a non-metallic fire sprinkler system, you have one more choice to make – CPVC or PEX. 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 BlazeMaster® CPVC systems as the preferred choice, largely based on its superior life safety performance. Plus, an all CPVC system is the most cost-effective when compared to metallic or PEX systems.

### Consider all the benefits an all CPVC piping system has to offer:

**Superior flame and smoke properties** – BlazeMaster 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,

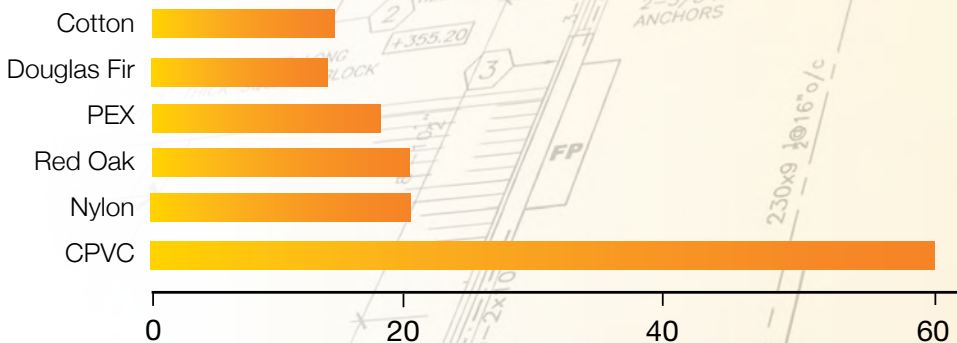
CPVC will not burn unless a flame is constantly applied and stops burning when the ignition source is removed. PEX, on the other hand, will continue to burn long after the flame has been removed. Also, any smoke that is generated from CPVC is no more toxic than that from traditional building materials, such as wood. Universally approved – CPVC is the only non-metallic piping material approved for use in both stand-alone and multipurpose fire sprinkler systems. PEX, in contrast, is only approved for use in multipurpose systems.

**Fast, easy, reliable installations** – The proven joining system for CPVC pipe and fittings 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 fire sprinkler system can be efficiently installed in more applications, including exposed in unfinished basements or with sidewall heads to minimize freeze issues.

## A BlazeMaster Fire Sprinkler System 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. The high LOI of CPVC means that it cannot burn under normal atmosphere conditions.*



**Color coding** – CPVC piping systems are color coded to easily differentiate between the BlazeMaster® fire sprinkler system (orange pipe) and the FlowGuard Gold® 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.

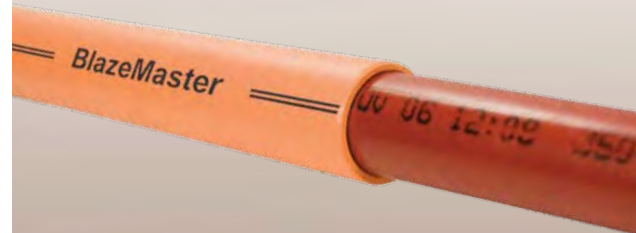
**Superior water flow** – BlazeMaster systems, both stand-alone and multipurpose, are less expensive to design and install, largely as a result of the superior water delivery. Manufactured to IPS (Iron Pipe Size) SDR 13.5 dimensions, BlazeMaster fire sprinkler pipe allows for increased water flow and fewer sprinkler heads over similarly sized multipurpose PEX systems. Manufactured to CTS (Copper Tube Size) SDR 9 dimensions, PEX has a small inside diameter and insert fittings which reduce water flow. As a result, there is not enough water to supply cost-effective, extended coverage sprinklers. In order to meet minimum flow requirements, PEX pipe must often be upsized, which results in increased materials costs and more sprinkler heads.



3/4" PEX Pipe

3/4" BlazeMaster Pipe

**Larger diameter BlazeMaster pipe provides the superior water flow needed for extended coverage sprinklers. This can lead to a lower installation cost.**



**PERFORMANCE CHARACTERISTICS**

**BlazeMaster® and FlowGuard Gold® CPVC Pipe & Fittings**

**All – PEX Multipurpose Systems**

<b>Combustibility</b>	Will not sustain combustion.	Easily sustained & propagated.
<b>Cost</b>	Most cost effective.	May be expensive.
<b>Easy Inspection &amp; Approval</b>	Yes.	No, requires additional testing over CPVC systems.
<b>Easy to Identify Plumbing and Fire Sprinkler Lines</b>	Yes, color coded.	No, not color coded.
<b>Water Flow</b>	Full, unobstructed flow.	Smaller tube internal diameter of pipe can restrict flow.
<b>Permeability</b>	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.
<b>High Temperature Considerations</b>	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.
<b>Affected by Chlorine or Common ORP Water Disinfectants</b>	No.	Yes – some PEX is susceptible to disinfectants (i.e. chlorine, chloramines).
<b>Product Consistency</b>	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.
<b>Kinking</b>	No.	Yes.
<b>Hanger Spacing</b>	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, which is earned only after the successful completion of a BlazeMaster training course. We lead the industry in promoting best practices by offering the most comprehensive, hands-on training program. That's just one more reason to choose a BlazeMaster fire sprinkler system.



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



# Lubrizol

Visit [blazemaster.com](http://blazemaster.com) or call **855.735.1431** to learn more.



Member



® is a registered trademark of The Lubrizol Corporation.  
™ is a trademark of The Lubrizol Corporation.  
© The Lubrizol Corporation 2012, all rights reserved.

01-12  
FS-RESDNLT