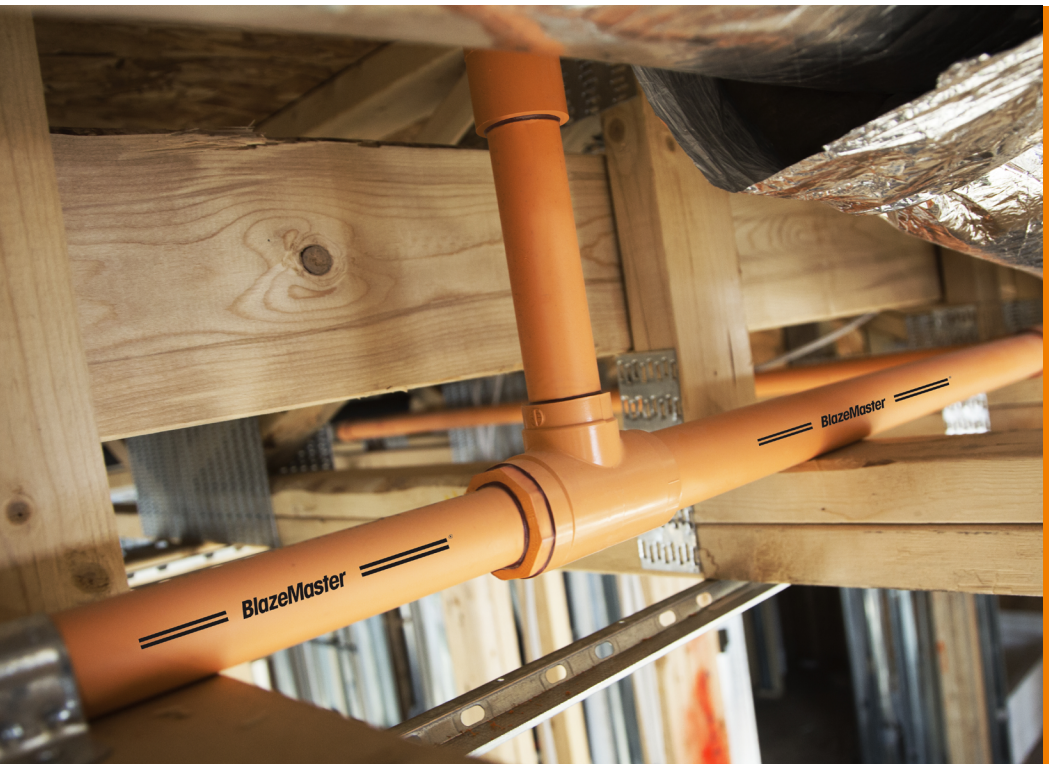
GUIDE TO CPVC FIRE SPRINKLERS



FOR RETROFIT AND RESIDENTIAL

BlazeMaster®
FIRE PROTECTION SYSTEMS

WHETHER YOU'RE A BUILDER, ARCHITECT, DESIGNER OR INSTALLER, A BLAZEMASTER FIRE PROTECTION SYSTEM PRESENTS ADVANTAGES THAT PROTECT MANY THINGS INCLUDING YOUR PROFITABILITY AND REPUTATION.

BlazeMaster®
FIRE PROTECTION SYSTEMS

Engineered for fire protection through groundbreaking R&D at Lubrizol - pioneers of the chlorinated polyvinyl chloride fire sprinkler system over 30 years ago - BlazeMaster Pipe & Fittings technology continues to set the industry standard.

This guide has been created to give you insight into how CPVC fire protection systems can be used for residential and retrofit projects in the UK, and will cover:

- What UK certifications and approvals CPVC meets
- The best use of CPVC in UK buildings
- The benefits of CPVC vs traditional steel solutions
- How BlazeMaster Pipe & Fittings have been installed in the UK already

If you have any questions regarding installing CPVC fire protection systems into your next residential or retrofit project, get in touch with our expert team.

GET IN TOUCH

THE HISTORY OF CPVC

The BlazeMaster brand has become recognised in fire protection, not just here in the UK, but also around the world. Here, we take a look back at the history of CPVC:

- CPVC piping was first developed by Lubrizol, the makers of BlazeMaster.
- BlazeMaster Pipe & Fittings, the world's first CPVC fire protection piping, was introduced over 30 years ago.
  - The product was reliable, strong and had many benefits compared to the corrosive metal systems on the market.
- The 1980s and 1990s saw BlazeMaster Pipe & Fittings earn the trust of the fire safety industry.
  - It achieved important safety certifications in the UK, the United States and Canada too.
- In the early 2000's, the cost of steel overtook CPVC piping for the first time.
  - BlazeMaster's one-step solvent cement solution helped to reduce installation costs even further, while making the process easier to complete.
- Now, BlazeMaster Pipe & Fittings continue to lead the way in the CPVC fire protection market.

UK CERTIFICATES AND APPROVALS

BlazeMaster Pipe & Fittings have long been an approved solution in the UK for all of your retrofitting and residential fire sprinkler requirements. As well as being listed by UL, FM Global and LPCB for use in NFPA 13 light hazard systems, it also meets BS 9251 and BS EN 12845.

While steel fire protection systems have been the traditional choice for retrofits and residential installations, UK certifications held by the BlazeMaster brand prove that our CPVC piping system delivers the same, if not heightened, reassurance when compared to each other. This is proven by the brand's achievement in meeting these three strict certifications and approvals for fire safety globally and in the UK and globally.

NFPA® 13

NFPA 13

The industry benchmark for design and installation of automatic fire protection systems, NFPA 13, addresses sprinkler system design approaches, system installation, and component options to prevent fire deaths and property loss. This is awarded by the National Fire Protection Association, a global not-for-profit organisation which was established in 1896.

BSI British Standards

BS 9251:2005

BS 9251

BS 9251 is the main British Standard covering fire sprinklers in this country. BS 9251 gives guidance for the design, installation, components, water supplies and back flow protection, commissioning, maintenance and testing of fire protection systems installed for life safety purposes with additional benefits for property protection in residential and domestic occupancies.

BSI British Standards

BS EN 12845:2004+A2:2009

BS EN 12845

BS EN 12845 covers the classification of hazards, provision of water supplies, components to be used, installation and testing of the system, maintenance and the extension of existing systems. It also identifies construction details of buildings which are the minimum necessary for satisfactory performance of fire protection systems complying with this standard.

All of these approvals or certifications are paramount requirements for any fire protection system that you are looking to install, and it is these certifications that are held by the BlazeMaster CPVC Fire Protection System.

BEST USE OF CPVC
FIRE PROTECTION SYSTEMS

SINGLE FAMILY RESIDENCIES

The Welsh government have become pioneers of fire safety after announcing new regulations in 2016 that state all new build and change of use single family units, must have an automatic fire suppression system. BlazeMaster Pipe & Fittings are an easy-to-install solution which will help house builders and developers in Wales meet this new regulation.

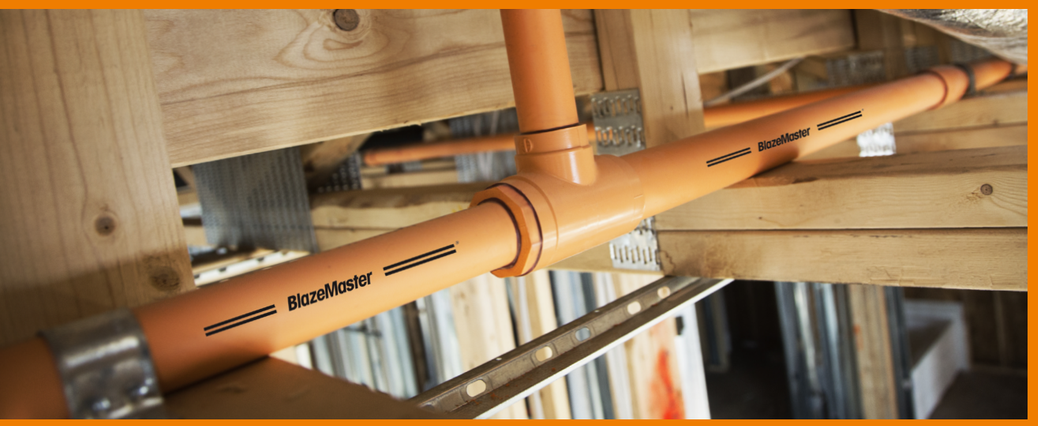
MULTI-OCCUPANCY

The regulation in Wales also includes flats, care homes, registered group homes, sheltered housing and other rooms for residential purpose too (other than hotels, hospitals, prisons and short stay hostels). The ease of installation that BlazeMaster CPVC offers, compared to steel solutions, provides multi-occupancy builders and developers with another and more advantageous solution to fire safety.

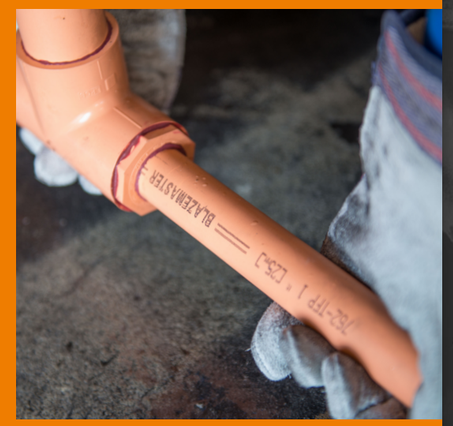
RETROFIT

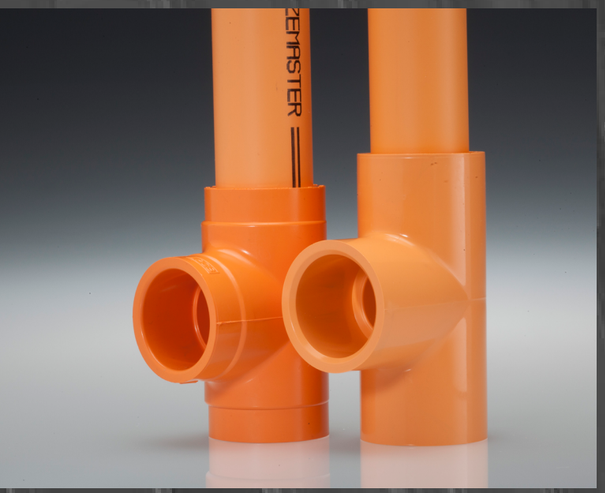
While the Welsh government have stated that all new and change of use residential buildings should have a fire protection system, existing buildings are not covered by the new requirements.

Despite this, CPVC systems can be retrofitted into residential buildings, including care homes, across the whole of the UK. The benefits of retrofitting with CPVC include a quicker and easier installation, meaning the most vulnerable people in our communities are protected but not disrupted too much.



It isn't just regulation changes in Wales that are focussing the UK's fire industry's attention on CPVC fire protection systems. Research completed by Lubrizol has found that there are significant benefits of CPVC vs traditional steel solutions.





BENEFITS
OF CPVC vs STEEL

Metal piping fire protection systems have, for a long time, presented fire sprinkler engineers with a number of challenges; fluctuations in the cost of materials can mean installers and developers are exposed to unpredictable cost increases.

Metal systems have also historically struggled with corrosion over time, and the difficulty of working with prefabricated installations haven't helped either. It was for these reasons that Lubrizol invested 30 years in developing the CPVC piping product and created the BlazeMaster CPVC Fire Protection System.

Here's a look at the benefits that CPVC provides installers, specifiers and users with, compared to steel.

ENVIRONMENTAL

The industry's understanding of manufacturing's environmental impact has become more sophisticated. It's not just about what comes out of smokestacks and sewer pipes. The impacts range from securing the resources and the amount of energy used in the manufacturing process to the ultimate disposition of the material.

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

- Climate change impact
- Metal depletion
- Energy consumption

CORROSION

Long-term, corrosion is always going to be an issue for steel and other metallic alternatives. The higher the corrosion levels inside the pipe, more friction is created which decreases the flow of water in the event of an emergency - potentially stopping the system from working altogether. CPVC in comparison, however, has been proven to:

- Eliminate scaling and corrosion for more than 50 years of service life, for lasting performance, even in salt-air environments
- Have natural immunity to Microbiologically Influenced Corrosion (MIC)

COST

As CPVC installations are quicker and easier to do, cost savings can be invested elsewhere to help your company grow and be more successful. The initial installation cost of CPVC versus steel was tested by Lubrizol. In the example of a 40-bed care home requiring a retrofit fire protection solution, CPVC's installation time was 640 hours, compared to steel's 1,323 hours. A saving of over 50% on installation time. As well as the short-term savings, CPVC also delivers a long-term cost benefit to customers as the piping:

- Does not require as much continual maintenance, unlike steel
- Has hydraulic capabilities v steel systems meaning smaller pipes are required
- Repairs can be made easily and quickly, unlike steel

HYDRAULICS

As well as the benefits of a pipe that doesn't corrode, the hydraulic performance of CPVC is heightened compared to steel too. The technology of BlazeMaster CPVC ensures optimal flow rates and excellent hydraulic capabilities (C-factor of 150) that will not diminish over time, unlike steel. This increased hydraulic performance often means smaller diameter piping can be used in place of the larger diameters pipes required of a steel system, safely reducing the over all cost of a system installation.

BlazeMaster's piping systems' superior hydraulics, also yield the required flow of water for extended coverage sprinkler heads too.

INSTALLATION

CPVC piping can be installed with a quick and simple one-step joining system, which eliminates the need for torches or complicated heat-fusion techniques that would traditionally be used in steel installations. As CPVC is lightweight too, it means installations in hard-to-reach areas can be completed more easily. This also means that installation of CPVC:

- Will disturb fewer tenants than an installation of steel
- Is a cleaner and quieter installation, unlike steel
- Does not require pre-fabrication, unlike steel
- Requires no electricity to install

The Many Benefits of BlazeMaster CVPC Fire Protection systems can help your company to grow and be more successful

BlazeMaster® CASE STUDY

CHALLENGE

When the decision was made to rebuild and expand a large school in the county of Hampshire, school and fire safety officials wanted the new buildings to have the best possible fire protection systems.

Much of the work on the £18 million project would be done while Park Community School in Havant was in session. Builders required a material that was affordable, flexible enough to accommodate design changes and was easy to install relatively quietly.

SOLUTION

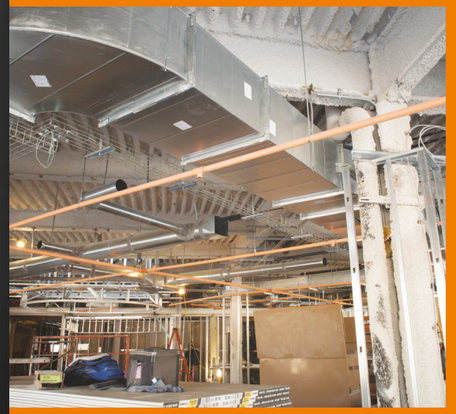
“BlazeMaster Pipe & Fittings were chosen for those reasons”, said Colin Taylor, head of the Oxfordshire office for Domestic Sprinklers, which has operations throughout England. “We believe it’s the easiest medium to work with and it allows a flexibility to the design.”

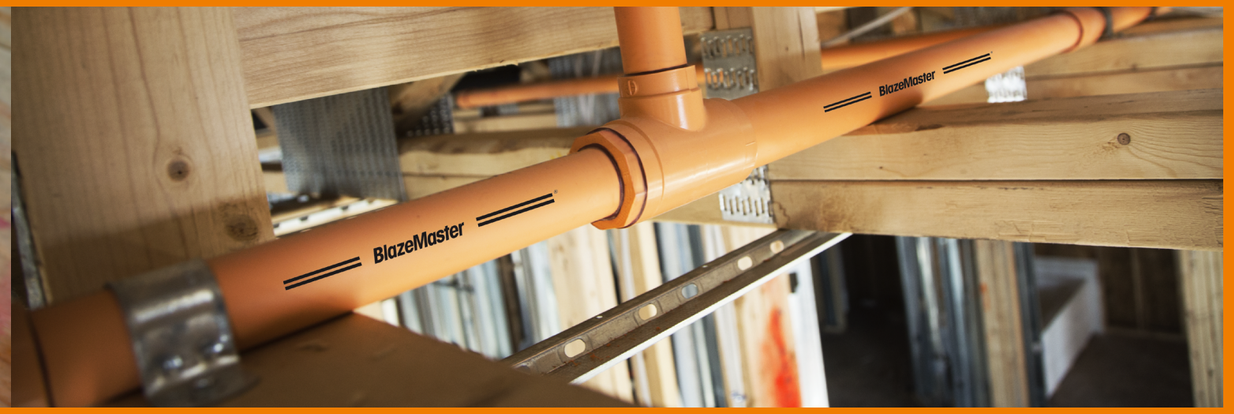
Because Hampshire County Council is self-insured, it had the option of choosing high-performing BlazeMaster Pipe & Fittings over the more expensive and difficult-to-work-with steel. Work on the large project began in late 2014 and was completed in summer 2015.

OUTCOME

Using BlazeMaster Fire Protection Systems made it easier to meet project deadlines and remain on budget. Taylor said, “The amount of changes that were forced upon us during the installation would have resulted in very high additional costs if a steel piping system had been used.”

The job, which included several multiple-story buildings, required 913 sprinkler heads. “The nice thing about BlazeMaster Pipe & Fittings is that installing it is a one-man job, meaning that all the engineers on site could get on with their own areas because it’s a lighter and quieter installation than steel.” Much of the work was done while school was in session, so contractors had to minimise disruptions.





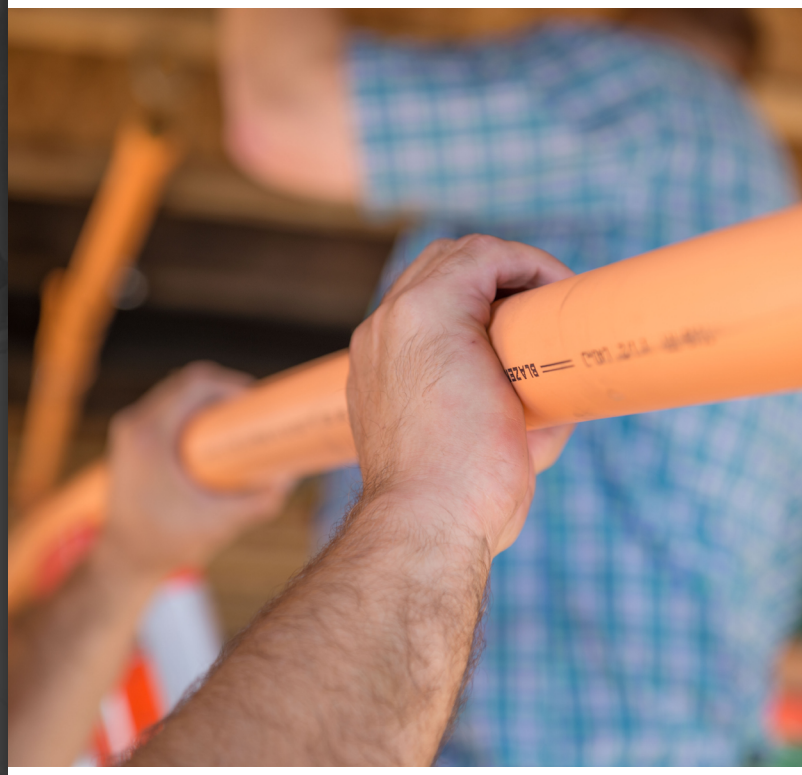
CHOOSE THE RIGHT SYSTEM WITH CONFIDENCE

Whether you're a builder, architect, designer or installer, a BlazeMaster Fire Protection System presents advantages that protect many things including your profitability and reputation.

Our UK and European BlazeMaster Pipe & Fittings representatives are available to speak with you about any questions that you need answering regarding this guide or your next CPVC fire protection requirements.

Consult with our experts today, and find out more information on:

- Costs and timings
- Product technical specifications
- Next available training workshops
- Any other question you have in mind



Request to speak to our expert team today and we will be in touch soon to arrange a call.

Get in touch with our expert team on +44(0)7710 372281

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Visit **LubrizolCPVC.com** or call **+44(0)7710 372281** to learn more.

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