FIRE PROTECTION SYSTEMS

A HISTORY OF INNOVATION IN THE FIRE PROTECTION INDUSTRY
THE WORLD LEADER IN MECHANICAL PIPE JOINING SOLUTIONS FOR FIRE PROTECTION SERVICES

Since the first patent in 1919, Victaulic® has delivered innovative pipe joining solutions that help customers succeed worldwide. Look inside many of the world’s most recognizable landmarks and industrial facilities, and you’ll find Victaulic solutions at work making bold design innovations possible, speeding time to completion, allowing for unpredictable seismic movements and setting the stage for scalability.

From concept to commissioning, Victaulic® provides the technologies and services necessary to simplify your next project.

Our global infrastructure of manufacturing plants and distribution centers optimize supply chain logistics.
CONTINUING EDUCATION

Doing business with Victaulic® isn’t just a matter of buying a product and being left to get on with the job. At Victaulic®, we provide start-to-finish solutions that anticipate your project’s every need.

You are assured the on-site support of a field representative, and further professional engineering expertise is just a phone call away if you need help with any special requirements or to solve a particular engineering challenge.

Victaulic® is now also offering a wide variety of continuing education courses created for owners, engineers, contractors, the inspection community, and anyone else seeking to expand their knowledge of Victaulic® and the industry surrounding the grooved mechanical market. From one-hour seminars to full-day events, these courses provide education on key industry concepts and Victaulic® solutions.

For more information on Victaulic® Continuing Education Courses or to schedule your training, please contact your local sales representative or email us at: VictaulicUniversity@victaulic.com

BUILDINGS & APPLICATIONS

Commercial Buildings  Parking Garages  Storage Rooms  Industrial Facilities  Tunnels  Datacenters, Museums, Libraries

AND MANY MORE ...
WHERE INNOVATION AND SOLUTIONS ARE JOINED TOGETHER
VICTAULIC THROUGH AND THROUGH

At the core of all the benefits that Victaulic® solutions bring to a project—such as productivity, safety, design flexibility and quality—are the unique features of our products.

When you need to trust a system inside out, there is only one manufacturer to choose. If it doesn’t say Victaulic® on the outside, it’s not Victaulic® on the inside.

Products Tested and Type Approved by Various Approval Bodies

VICTAULIC® GROOVED END PIPING SYSTEMS PROVIDE:

- **Easy system maintenance and expansion**—through simple coupling disassembly that allows for easy access.
- **Alignment ease**—through a design that allows for full rotation of the pipe and system components before tightening.
- **Noise and vibration attenuation**—by isolating the transference of vibration at each joint.
- **Self restrained pipe joints**—Couplings engage the pipe grooves to hold the pipes against full pressure thrust loads without the need of supplemental restraints.
- **Rigidity**—with an angled pad design that provides positive clamping of the pipe to resist torsional and flexural loads.
- **Flexibility**—with the inherent axial movement and deflection properties of flexible couplings in a groove system. May be used to accommodate pipeline thermal expansion and contraction, misalignment and settlement, and seismic stress absorption.
Victaulic® listened to contractors looking for a fast, easy-to-install coupling that provides a direct wrench feel while improving battery life. The FireLock EZ™ Style 009N Rigid Coupling has no loose parts to drop or cause injury, ships to the jobsite ready to install and promises fast installation and no rework, saving the contractor both time and money.

Now available in pipe sizes ranging from DN32-DN300 / 1¼ - 12".
“I know what I am getting with Victaulic. I have known their products for many years and have come to rely on them. I planned 30 hours manpower per floor with a classic coupling and have saved 13 hours per floor by specifying the Victaulic Style 009 Firelock EZ™ Installation-Ready Coupling. Overall the time saving on assembly in this project has been 40 percent.”

Stéphane Lalanne – Comsa EMTE

Installation-Ready™ means fast, dependable no-nonsense productivity

- No loose parts to drop or cause injury
- Overhead assemblies require less effort
- Fast, consistent installations
- Easy visual confirmation
- 1¼ – 12” | 32 – 300 mm
- For services up to 365 psi | 25 Bar

Improved battery life

<table>
<thead>
<tr>
<th>Improved battery life</th>
<th>Reduced installation effort</th>
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<tr>
<td>Style 009H</td>
<td>Style 009H</td>
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<td>New Style 009N</td>
<td>Coupling fully assembled</td>
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<tr>
<td></td>
<td>“pad-to-pad” visual confirmation</td>
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<td>New Style 009N</td>
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<td></td>
<td>Direct wrench feel</td>
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<td>at least a 50% improvement</td>
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victaulic.com
INNOVATIVE GROOVE SYSTEM ™

THE BIG IDEA THAT IS CHANGING DN25/1" SMALL DIAMETER PIPING
THE IGS SOLUTION IS NOT ONLY FAST, BUT ALSO ELIMINATES OIL DRIPPINGS AND SHAVINGS TYPICALLY PRODUCED DURING THE THREADING PROCESS. THIS ALLOWS CONTRACTORS TO USE THE PORTABLE RG2100 THROUGHOUT THE JOBSITE WITHOUT WORRY, IN TURN INCREASING PRODUCTIVITY.

SIMPLIFY:
- Eliminate Mess – no oil, shavings, tape, or dope
- Increase tool portability
- Use one pipe schedule (Schedule 10)

SAVE:
- Effort – eliminate pipe wrenches
- Up to 55% less pipe prep
- Up to 2x faster to install

CONFIRM:
- Replace threaded connections with mechanical joints
- Bolt pad to bolt pad visual confirmation
- No tool adjustment – groove within specification every time

firelockIGS.com

victaulic.com
FIRELOCK
INSTALLATION-READY
FITTINGS

THE MOST INNOVATIVE CHANGE TO FIRE PROTECTION FITTINGS
NO LOOSE PARTS
- Eliminate the time needed to look for an extra coupling or bolt
- Reduce the number of times up and down the ladder or lift

REDUCE INSTALLATION TIME
Installs up to 10 times faster than threading
- Eliminate the work of pipe wrenches
- No tape, no dope, no mess
- Eliminate the set-up and clean-up of the threader
- No need to change cutting dies
- No cutting oil

Up to 4 times faster than traditional couplings and fittings
- Tee: 22 pieces vs. 1 piece
- Elbow: 15 pieces vs. 1 piece

SMALLER TAKEOUT DIMENSIONS
Save space – reduce your take-out dimensions
- Up to 45% shorter take-out than traditional coupling/fitting assembly
- Fits in tighter ceiling spaces
- One-piece leaves a free hand

AVOID THE COST OF INTERNAL GALVANIZED FITTINGS
- No wetted metal eliminates corrosion
- No need for galvanized fittings to address internal corrosion
FIRELOCK™ & FIRELOCK NXT™ SYSTEMS

FireLock NXT™ devices offer another leap forward in valve design and operation. Featuring a lower operating pressure and ultra-fast trip time, due to the elimination of the air-to-water differential, FireLock NXT™ devices deliver greater operational dependability and are easier to install, service and maintain. In addition, the compact trim and diaphragm design reduces the valve’s center-to-back take out distance up to a full 178 mm | 8” when compared with competitive valves.
“THE INNOVATIVE DESIGN OF THE NEW FIRELOCK NXT™ LINE WENT BEYOND THE VALVE ITSELF. TO REDUCE THE FOOTPRINT REQUIRED FOR THE TRIM TO THE BARE MINIMUM, TRIM COMPONENTS WERE REDESIGNED TO OPTIMIZE PERFORMANCE AND SAVE SPACE.”

Daniel Wake – Victaulic Product Manager
FIRE-PAC
SERIES 745

EASILY ACCESSIBLE AND PERFECTLY COMPACT

The Victaulic FireLock™ Series 745 Fire-Pac is a completely pre-assembled and tested fire protection valve with trim and optional components enclosed in a metal cabinet.
"THE CHOICE OF A FIRE-PAC SYSTEM MEANT EASY ACCESSIBILITY AND SPACE-SAVING, WHILE STILL BEING ATTRACTIVE TO THE EYE. FURTHERMORE, THE COMPACT FORMAT OF THE FIRE-PAC ENABLED INSTALLATION OF A SYSTEM WHICH WAS COMPACT AND READY FOR USE WITHOUT THE NEED TO MODIFY THE AREA, SAVING BOTH TIME AND COSTS".

Nicolas Godart, Director of Implementation for Fire Protection, Eiffage Energie Thermie Mediterranée, FRPD

Pre-assembled valve, trim and all components in secure enclosure.

Included in the FireLock™ Fire-Pac are a water supply shutoff valve, the sprinkler system fire protection valve, alarm line pressure switches, air supervisory pressure switches, and valve position supervisory switch, with pressure gauges and FACP that are easily viewed through a window in the cabinet door.

Minimize installation footprint. Greater usable floor space – eliminate mechanical closets.

The Series 745 Fire-Pac is the ideal option for installation of Victaulic® FireLock NXT™ dry, deluge or preaction systems – especially when systems are:

- Located in high traffic areas
- Installed in series and share common supply and drain lines
- Designed in zoned control areas

Common installation environments

- Industrial or mining facilities
- High-security spaces
- High Rise Buildings
- Parking garages
- Airports
- Data centers
- Stainless steel cabinet available for corrosive applications

victaulic.com
The Victaulic Vortex™ Fire Suppression System is built on 95 years of innovation and product development experience and combines the best characteristics of both water mist and inert gas systems. Water is introduced to a jet stream of nitrogen creating a uniform blend of water droplets and nitrogen up to 10 times smaller than a traditional water mist system, resulting in nearly zero wetting of protected surfaces and 50% better heat absorption.
“MY CLIENTS WERE VERY IMPRESSED WITH THE VORTEX SYSTEM WHEN THEY SAW THE LEVEL OF FIRE PROTECTION IT PROVIDES WITHOUT HUGE AMOUNTS OF WATER OR TOXIC CHEMICALS. IT’S ALL ABOUT PROTECTING THE PEOPLE AND ASSETS, MINIMAL IMPACT ON THE HAZARD ENVIRONMENT AND THE FAST RETURN TO NORMAL OPERATIONS. THE VORTEX SYSTEM DELIVERS.”

Owner, Integrator

The only hybrid nitrogen-water fire suppression system with:

NO NEED FOR ASSURANCE OF TIGHT ROOM INTEGRITY
Unlike other systems, maintaining room integrity is not essential; fires are extinguished in open, naturally ventilated areas.

SUSTAINABLE DESIGN
Utilizing only non-toxic agents, water and nitrogen – personnel are safe, even during activation; oxygen in the space is maintained at safe breathing levels.

Minimal Water Presence
The average Victaulic Vortex™ droplet size is less than 10 microns, and the minimal amount of water released per emitter – as little as one gallon per minute – virtually eliminates any wetting in a space.

RELATIVE AMOUNT OF WATER REQUIRED
GPM / LPM FLOW PER EMITTER, NOZZLE OR SPRINKLER

<table>
<thead>
<tr>
<th></th>
<th>Standard sprinkler</th>
<th>High pressure mist</th>
<th>Victaulic Vortex</th>
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<tbody>
<tr>
<td>Flow</td>
<td>&gt;25 / 94.6</td>
<td>~8 / 30.2</td>
<td>0.26 / 0.98</td>
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Save precious time by eliminating the need to cut and measure hard pipe, while achieving consistent installations and performance.
VicFlex™ Sprinkler Fitting Systems offer confidence by providing 100% kink resistance and the tightest bend radius in the market. Up to 10x faster than threaded black pipe, VicFlex™ Flexible Sprinkler System eliminates messy cutting tools and custom arm-over fabrication. The VicFlex™ System features brackets, hoses and fittings for a wide variety of sprinkler system applications including: commercial suspended ceilings, commercial metal or wood stud hard lid/drywall ceilings, block wall institutional spaces, clean room environments, or industrial duct systems.

What if you never had to touch a ceiling tile again?

The VicFlex™ Style AB1 Bracket eliminates the need to handle or cut holes in ceiling tiles reducing the need to coordinate with the ceiling trade.

The AB1 Bracket is designed so that it does not obstruct or damage ceiling tiles, providing a faster and simpler installation, saving time and money.

With the VicFlex™ Series AH2-CC Braided Hose, Victaulic demonstrates its reputation of setting precedents for others in the fire protection industry by being the first of its competitors to innovate the branch line connection. In previous models, pipefitters had to tape or dope the threads of the branch line nipple and thread it into the branch line outlet, using a pipe wrench to tighten the connection. The AH2-CC provides a pipefitter-friendly option by eliminating the need to use a pipe wrench on the branch line side, reducing installation time and potential for pipefitter injuries.
Victaulic® FireLock™ sprinklers are designed for a wide variety of applications and are available with a broad range of finishes and temperature ratings, aesthetic and performance requirements.

Victaulic® offers a complete line of accessories, guards, shields, escutcheons, expansion and cover plates – all designed to provide you with a single source for your next sprinkler project.
Maximum Corrosive Protection

VC-250 is an optional, corrosion-resistant coating developed by Victaulic® to increase the protection of FireLock™ sprinklers from visual and physical changes such as exposure to weather or exposure to areas that may be specified as chemical environments. When applied, this nickel based, multi-layer coating fully encompasses each FireLock™ sprinkler to provide increased corrosion resistance while maintaining functionality.

Sprinkler Range

- Standard Commercial
- Extended Coverage
- Storage
- Residential
- Decorative
- Dry
- Window Nozzles
- Foam Nozzles
- Open Spray Nozzles
- Specific Application

Storage Sprinkler Solutions

Featuring a K-Factor of 25.2 imp/36.8 S.I., the LP-46 sprinkler is designed to control fires in single, double and multiple row storage units without the need for in-rack sprinklers.

The LP-46 sprinkler features an easy system design, factored upon a twelve head calculation with 10’x10’/304,8 x 304,8 cm spacing, which results in an up to 20 percent reduction in the number of sprinkler heads typically necessary.

Also available in upright version for dry systems.
FEWER SPRINKLERS NEEDED

TYPICAL INSTALLATION:

FireLock ECLH Sprinklers  40% less time and labor

Traditional Installation

20
K16.8

Now utilizing glass bulbs
Victaulic® provides an integrated product delivery process that walks you through every step of your project. Let us assist you with on-board installation training, software solutions and construction drawings.
“THE SERVICES I RECEIVED FROM THE VICTAULIC® CONSTRUCTION PIPING SERVICES TEAM WERE EXTREMELY PROFESSIONAL, ACCURATE, AND USER FRIENDLY. THE SCOPE OF WORK WAS EXACTLY AS REQUESTED AND MADE FABRICATION AND SHIPPING VERY EFFICIENT. THE SCHEDULE EXCEEDED THE OWNERS REQUIREMENTS.”

Jim Moeller, Division Manager
Quality Plus Services

Drawing, Coordination, Training and Software Solutions for the fire protection industry.

Lean on Victaulic® for a full range of capabilities from software and content development to fabrication analysis and optimization. No matter your design challenge, Victaulic® can help you mitigate risk while navigating today’s toughest standards and delivering high performance building systems.

Victaulicfire.com/CAD offers an extensive library of CAD files and software product content created in each software’s native platform.

Victaulic Tools for Revit.

Model your most complicated device room faster than ever before with the enhanced features and add in’s developed by Victaulic. Edit, tag, and create assemblies seamlessly, and create fabrication drawings within Revit for the very first time. Visit www.victaulicsoftware.com for more information.

victaulic.com
EIFFEL TOWER

MAXIMUM SAFETY AND TOP QUALITY FOR FRANCE’S LANDMARK BUILDING
Eiffel Tower Victaulic® preaction fire protection system can withstand pressures of up to 21 bar

When the safety and security team at the Eiffel Tower was looking to install a new fire protection system they needed a system which would provide the highest possible level of safety for a construction which is visited by around seven million people each year.

Following a tender process, SETE, the company which runs the Eiffel Tower selected a Victaulic® preaction system to meet the stringent fire safety standards in the tower.

In a construction like the Eiffel Tower, a premature water response could be as disastrous as a fire. In a preaction system, the pipe lines are pre-charged with pressurized air. Water is held from the piping by an electrically actuated solenoid, which is activated by an alarm signal. If an alarm system detects smoke, for example, the valve opens to fill the system piping. If temperatures rise from an actual fire, the sprinkler bulb bursts to distribute water immediately. False alarms are minimized by requiring two events to occur before the system is activated. Water is only then distributed to the site after a sprinkler is heat-activated.

The Victaulic preaction system was selected for its pressure rating of up to 21 bar where most systems are only rated up to 17.5 bar. The Victaulic preaction system is also approved by the CNPP (National Centre for Prevention and Protection), and many other systems on the market do not have this approval. CNPP was a major consideration, as it would have been difficult to insure such a public building without it. The preaction system in the Eiffel Tower can also be easily drained and reset if the alarm is activated.

The 500-head sprinkler system in the tower is supplied by a column of pressurized water which rises from the mechanical room all the way up to a height of 100 metres on the second floor. The system provides fire safety in the public areas of the tower, in the kitchen, where temperatures of up to 141°C are created, and in the restaurant on the second floor. It is sensitive to varying degrees of heat (68°C in the restaurant and buffet, 93°C in the general kitchen area and 141°C next to the chip fryer).
AUCKLAND INTERNATIONAL AIRPORT

FIRE PROTECTION INSTALLATION IN OPERATIONAL COLD STORAGE FACILITY
Installing a fire protection system at -21° Celsius

The original glycol system presented serious safety concerns for the cold storage warehouse in the Auckland International Airport. Since there was no secondary trigger devise, there was risk of accidental operation which could result in possible freezing in the piping or damage to the piping or sprinklers. These risks, along with the high cost and inefficiency of glycol, pushed Protech Design to consider other options. They found a more dependable solution for fire protection in such a harsh environment – a FireLock NXT™ Preaction System from Victaulic.

Since this site had no secondary holding facility for back-up during system installation, it was critical for the freezer to remain functional throughout the entire construction phase and meant that Argus Fire Protection labor forces were working in an operating freezer of -21°C. Further complicating the process, battery life of installation tools were drained exponentially faster due to the cold temperatures. The situation demanded a prefabricated fire protection system that could be quickly and easily installed, ensuring that contractors and machinery were inside the cold facility for as brief time as possible.

Auckland airport employed Argus Fire Protection to remove the existing glycol system and install a roof-only, double interlock preaction system. The easiest, fastest and most economical installation method proved to be the Victaulic FireLock NXT™ Series 769 Double Interlocked Preaction valves, which were delivered to the site fully pre-trimmed allowing direct connection to the riser requiring only minimal on-site work. Victaulic® Firelock EZ™ Style 009N rigid couplings were chosen to join the system as they significantly reduced the time spent in the cold and allowed the pipe-fitters to install them without removing their gloves.

To ensure dependable pneumatic detection, Victaulic® LP-46 upright sprinklers were chosen to be installed. In a large cold storage facility such as this, where the threat of fire rapidly spreading has historically been high, the LP-46 has a deflector which is specifically designed to disseminate the water in a pattern that will most effectively control growing storage fires. Installing this type of system saw the elimination of in-rack pipes and sprinklers, ensuring more flexibility for storage and racking and maximum operational performance for the facility.
CASE STUDIES

“HAVING A SYSTEM THAT WAS QUICK AND EASY TO INSTALL WITH FAST DELIVERIES HELPED US CONTROL COSTS AND MEET THE DEADLINE FOR THIS FAST-PACED PROJECT.”

Erik Olsson, Project Manager
Powerheat AB

Malmö Plaza, Malmö, Sweden

Swedish engineering company, OF, had many factors to consider when choosing a fire protection provider to renovate the Malmö Plaza. Not only did the system have to be effective and reliable, it also had to be installed in the shortest possible time. While keeping the shopping mall open for business throughout the project. OF wanted a single supplier for all the fire protection system requirements, which included sprinkler heads, 10 wet alarm valves and couplings and flexible hoses to join the distribution piping.

Victaulic® was selected for its ability to meet each requirement. Key to the decision, however, was the company’s FireLock EZ™ Style 009N which is known to be the fastest way to get the job done. “It’s probably twice as quick to install as a conventional coupling,” said Erik Olsson, Project Manager at installation company, Powerheat Sprinkler System Sweden AB. “The schedule was tight and to keep the mall open 90% of the work had to be done at night. We had to drain the system of water at the end of every day and fill up the pipes again every morning when the shopping center opened so it was important for us to have material that was reliable and quick to work with so that our progress was fast.”

Product availability was another critical factor. Any potential delays on the jobsite were avoided because items could be ordered and delivered in less than 24 hours. “Without doubt, Victaulic has the best distribution system in Sweden,” Olsson commented.

Powerheat Sprinkler System used VicFlex™ stainless steel sprinkler fittings for further time and cost savings. This pre-assembled flexible system is easier to position than rigid piping, and eliminates the need for installers to co-ordinate with the ceiling trade on the jobsite. Its use made for quick and easy installation, as everything could be prepared before the ceiling was put in place. Olsson explained: “The supporting system for the gypsum ceiling was built on Monday, we installed the VicFlex™ brackets on Tuesday and then they closed it up with gypsum. It was as quick and easy as that. If we hadn’t had the VicFlex™ hoses, we would have had to fill up with pipes and wouldn’t have been able to keep pace with the speed of the builder’s schedule.”
Whether new construction or retrofit, Victaulic® delivers a level of versatility unmatched in fire protection systems technology for today’s engineering marvels.

For a complete list of references please visit victaulic.com

Otogar-Bağcilar Metro, Istanbul, Turkey

The Otogar – Bağcilar Metro tunnel project in Turkey incorporates 16 pump rooms along with two parallel running pipes of 22km each in the tunnel. When choosing a pipe joining method for the fire protection system in the tunnel, several requirements were considered including fast installation time and a challenging design that required piping to be installed at steep angles.

Victaulic® grooved pipe joining products were chosen to be installed on the system with the help of 3D modelling completed by the Victaulic Construction Piping Services (CPS) team. Victaulic® flexible couplings provide angular deflection at each pipe joint, enabling the contractors to eliminate additional bends and reduce overall material cost. In addition, couplings are up to five times faster to install than alternative joining methods, allowing for fast installations that resulted in an accelerated construction schedule.

With consistent job-site support from Victaulic®, an addition of 110 units of Victaulic® FireLock NXT™ Preaction devices were specified to complete the 16 pump rooms. Victaulic® CPS supplied CAD drawings and a bill of materials for these FireLock NXT™ Preaction devices, supporting the project from start to finish.
Bellagio Spa Tower, Las Vegas, Nevada

The Bellagio Spa Tower in Las Vegas, a 30-story hotel tower including expanded spa facilities and approximately 900 hotel rooms, required a fire protection system to fit in with its elegant style.

Victaulic® provided the full line of fire protection products and services, including decorative concealed commercial sprinklers for the wet and dry sprinkler system.