

UNITED ARAB EMIRATES  
Burj Khalifa

## Victaulic Mechanical Piping Systems

IDEALLY SUITED FOR

# Commercial Buildings

HVAC

Plumbing

Fire Protection

[WWW.VICTAULIC.COM](http://WWW.VICTAULIC.COM)



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# Mechanical Piping Systems

**Save time and increase profits by using Victaulic wherever possible. Everyone wins.**



## Contractors

- Faster installation times translates to fewer man-hours and less exposure to risk
- Meet and exceed tight project schedules with proprietary pipe joining technologies
- Improve jobsite safety—join pipe without the use of a flame
- Reduce risk by utilizing Victaulic as a single supplier for all piping systems
- Minimize risk to your schedule and your bottom line by making Victaulic your integrated project delivery partner

## Owners

- Reduce owner liability and risk of injury by eliminating hotworks
- Reduce downtime on system retrofits and expansions
- Create a more sustainable environment
- Generate revenue faster with a shorter building construction schedule

## Engineers

- Reduce risk with visual verification of joint integrity
- Accommodate piping system movement in smaller spaces, with less stress on components
- Specify with confidence; Victaulic products are expertly designed and engineered
- Provide system solutions where needed with enhanced design versatility





## Original Invention

Grooved End Pipe Joining, or the “grooved” concept, as it is known today, was born in 1925 when Victaulic introduced the first mechanical pipe joint to successfully use a mechanical coupling combined with grooved pipe ends to join piping systems. They called this invention, the Victory Joint.



**victory + hydraulic =**

**Victaulic®**

Today you will find Victaulic grooved mechanical systems used in a nearly endless number of piping applications all over the world.

While the grooved concept has become synonymous with faster and easier installations, not all manufacturers of grooved products are the same.

**There is only one Victaulic.**

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# Grooved Pipe Joining Technology

## How does it work?

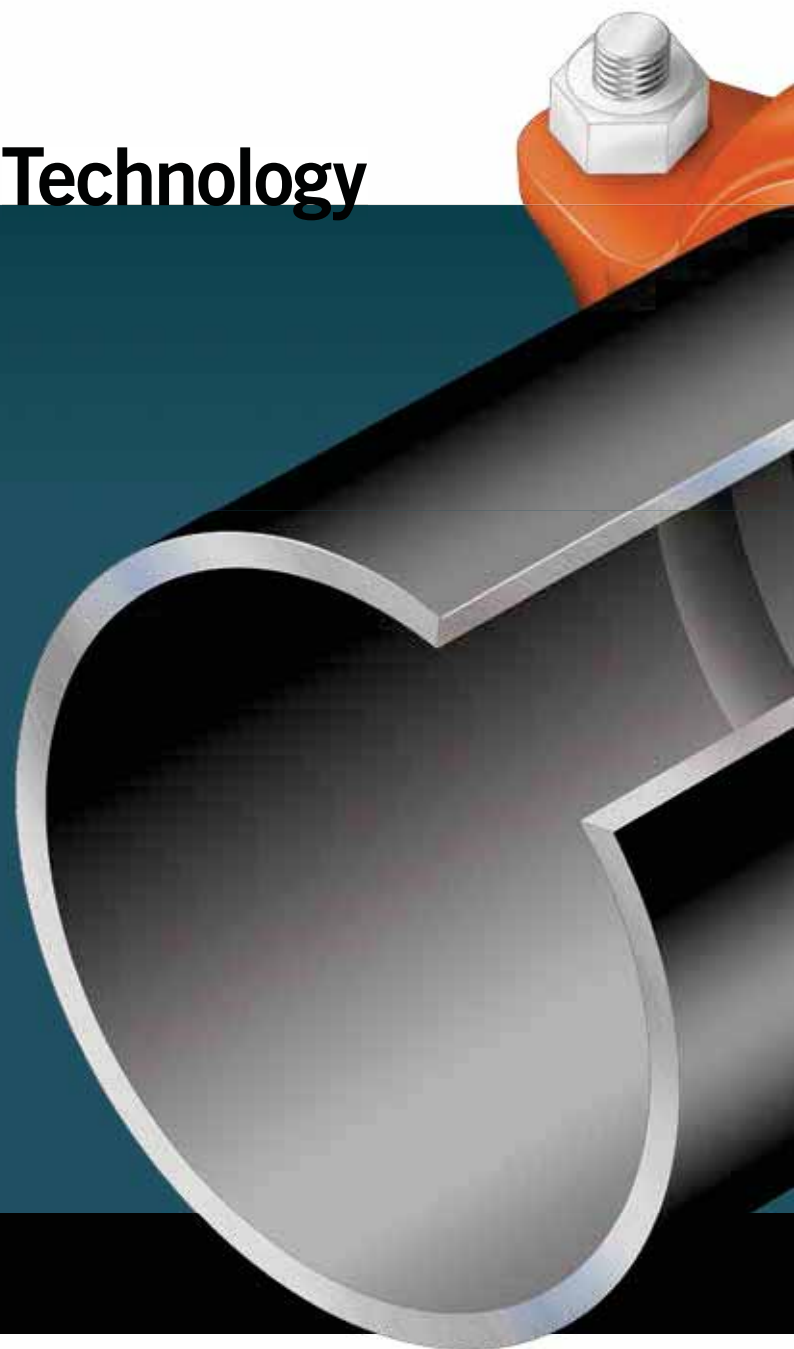
The groove is made by cold forming or machining a groove into the end of a pipe.

A gasket encompassed by the coupling housing is wrapped around the two grooved pipe ends, and the key sections of the coupling housing engage the grooves.

The bolts and nuts are tightened with a socket wrench or impact wrench.

### TYPES OF GROOVED COUPLINGS

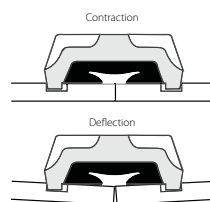
- **Flexible coupling** – allows for controlled linear and angular movement, which accommodates pipeline deflection as well as thermal expansion and contraction.
- **Rigid coupling** – does not allow for movement, similar to a flanged or welded joint.



## Your design benefits from our product features

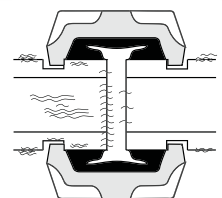
### FLEXIBILITY

Accommodates for predictable, controlled thermal piping movement.



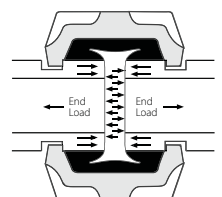
### NOISE AND VIBRATION ATTENUATION

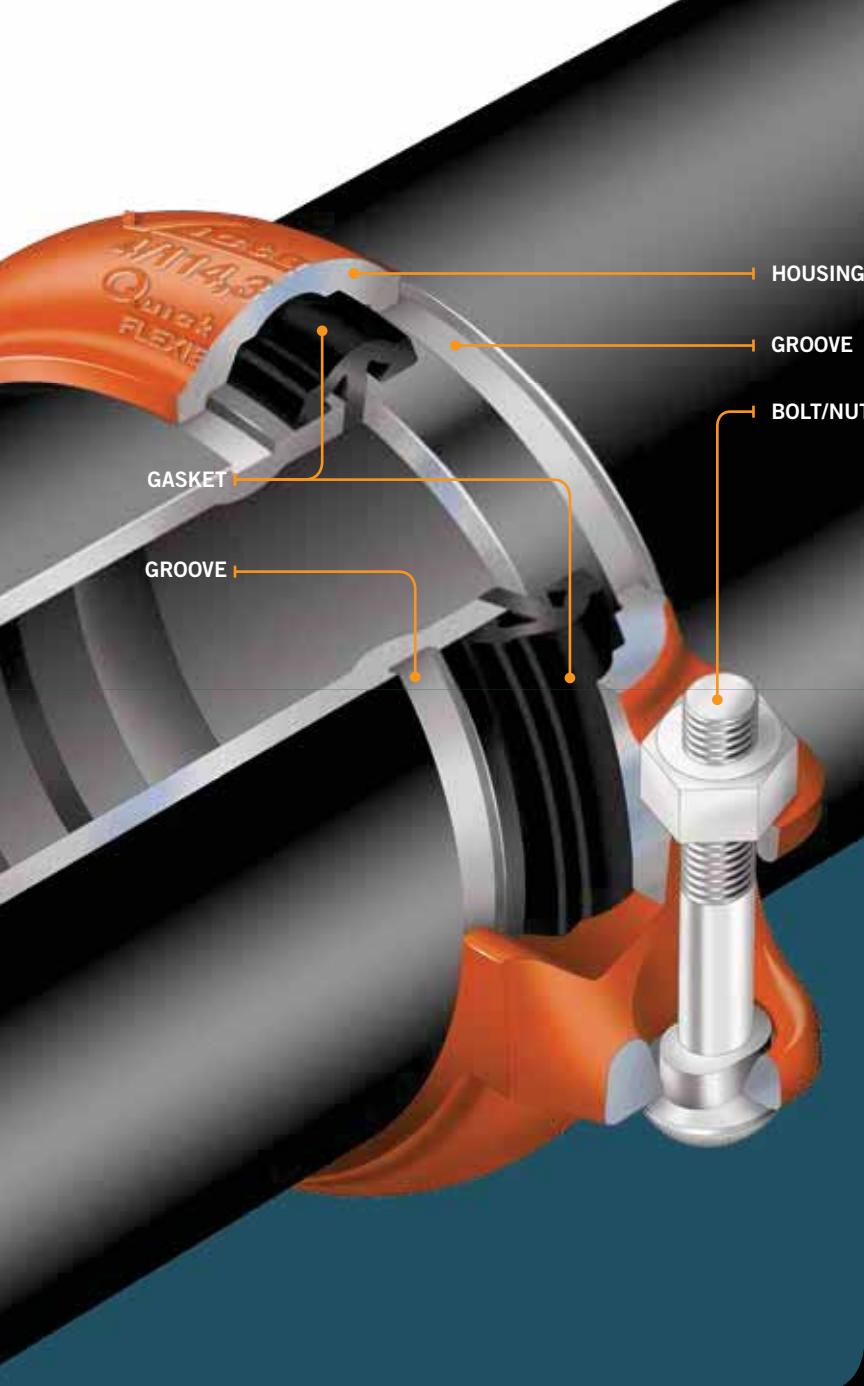
Reduces the transmission of noise and vibration throughout a piping system.



### SEISMIC STRESS ABSORPTION

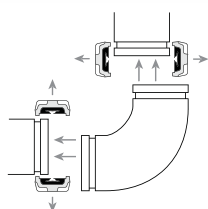
Features significant pressure restraint and end load capacity, capable of withstanding piping movement generated from seismic forces.





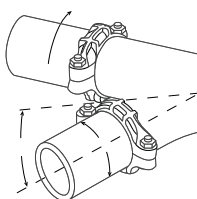
#### SYSTEM MAINTENANCE AND EXPANSION

Offers a union at every joint, providing easy access for maintenance and system expansions.



#### ALIGNMENT EASE

The grooved coupling can be oriented in any direction, easing concerns when installed in tight spaces.





# The Victaulic Difference

Over 85 years of innovation.

85+



## Advanced Groove System **AGS**®

A wider, wedge-shaped groove facilitates proper coupling positioning and offers unprecedented assembly, as well as speed and reliability, giving contractors the speed they want, and engineers the performance they need.

**Two-piece** coupling housing for all sizes. **Twice** the end load capabilities. 14–60"/350–1525 mm sizes. **Patented**

[WWW.VICTAULIC.COM/AGS](http://WWW.VICTAULIC.COM/AGS)



## Installation-Ready Technology

Characterized by a single unit coupling design, installation-ready technology allows an installer to assemble a coupling by simply inserting the coupling onto the grooved end of a pipe, fitting, valve or accessory and then tightening the nuts. Up to **10 times** faster to install than other joining methods.

1¼–8"/32–200 mm sizes, depending on the coupling style. **Patented**

[WWW.VICTAULIC.COM/INSTALLATIONREADY](http://WWW.VICTAULIC.COM/INSTALLATIONREADY)



## Hydronic Balancing

Victaulic provides balancing products that allow contractors to **improve productivity** on the jobsite, and that allow engineers to accurately control building temperatures, while optimizing energy efficiency. Balancing valves enhance comfort and **cut energy costs** through precise control of building temperature.

Victaulic KOIL-KIT™ Coil Packs provide a **customizable coil solution** delivered to the jobsite as a pre-connected unit for faster and easier installation.

[WWW.VICTAULIC.COM/BALANCING](http://WWW.VICTAULIC.COM/BALANCING)



# YEARS

## Technology timeline

- 1925** Victaulic introduces the first grooved end coupling, the "Victory Joint"
- 1930** AWWA-size ductile iron system introduced
- 1946** First field-grade cut groovers brought to market
- 1957** Victaulic introduces roll grooving
- 1979** First mechanical coupling for joining high density polyethylene (HDPE) pipe
- 1983** First angled-bolt pad rigid coupling introduced
- 1991** Victaulic introduces first small diameter IPS-size pipe press connect system
- 2005** Advanced Groove System for large diameter piping systems is introduced
- 2006** Couplings featuring patented installation-ready technology are introduced
- 2011** Victaulic introduces Vic-Press™ for Schedule 10S stainless steel



Since 1925, Victaulic has been at the forefront of mechanical piping systems innovation with more than 1,000 patents for piping related products.

# The Victaulic Difference

A global solutions provider depended on for over 85 years.



## KEY

★ Foundry Location      ● Distribution Center Location      ● Featured Project Location



## Victaulic is specified for the world's most demanding projects.

### IN EVERY PART OF THE WORLD

- Global manufacturing and a growing sales network

### VICTAULIC IS AN ISO 9001 CERTIFIED COMPANY

- All global locations earn the highest certified ratings possible



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# Heating and Cooling Systems

By specifying and installing Victaulic systems, engineers, owners and installing contractors conserve time and financial resources through:

- Compressed construction schedules
- Lower total installed cost
- A safer work environment
- Reduced system downtime



## Heating

A complete product line for  $\frac{3}{4}$ –60"/20–1525 mm size heating applications.

### APPLICATIONS

- Hot (hydronic) heating
- Glycol systems
- Boiler piping systems
- Dual temperature systems
- Water source heat pumps
- Perimeter heating/finned tube
- Fan coils
- Coil headers
- VAV box with hot water coils
- Passive or active solar systems



*Products for use on:  
Carbon Steel Pipe  
Galvanized Pipe*





AGS®

[WWW.VICTAULIC.COM/HVAC](http://WWW.VICTAULIC.COM/HVAC)

## Cooling

A complete product line for ¾–60"/20–1525mm size cooling applications.

### APPLICATIONS

- Chilled cooling water
- Condenser water
- Glycol systems
- Cooling towers
- Brine systems
- Special coolant systems
- Central chiller
- Ice chiller systems
- Air handling units



### Victaulic Grooved Systems

- Require 45 percent less man-hours on average over welding
- Eliminate costly fire watch and hazardous fumes and flames
- Reduce material handling by 30–70 percent
- Reduce energy consumption





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# Plumbing Systems

By eliminating the need to braze or solder, contractors can reduce the risk of rework.

Victaulic systems are also the fastest joining method available, installing nearly twice as fast as welding, brazing or soldering, and 20 percent faster than “press” products.

[WWW.VICTAULIC.COM/PLUMBING](http://WWW.VICTAULIC.COM/PLUMBING)



## Plumbing

A complete product line for ½–60"/15–1525 mm size plumbing applications.

### APPLICATIONS

- Potable water systems
- Storm water systems
- Roof drains
- Vacuum plumbing systems
- Drain, waste and vent systems



*Products for use on:  
Copper Tube  
Stainless Steel Pipe  
Galvanized Pipe*

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# Fire Protection Systems

Victaulic provides an exhaustive and innovative product line exclusively designed for Fire Protection systems.

[WWW.VICTAULIC.COM/FP](http://WWW.VICTAULIC.COM/FP)



## Fire Protection

A complete product line for ½–8"/15–200 mm size fire protection applications.

### THE PRODUCT LINE INCLUDES

- Devices, valves, couplings, fittings, flexible sprinkler fittings, hole cut products and a full offering of automatic sprinklers
- Complete system solutions for wet and dry pipe applications
- Pipe preparation tools and accessories



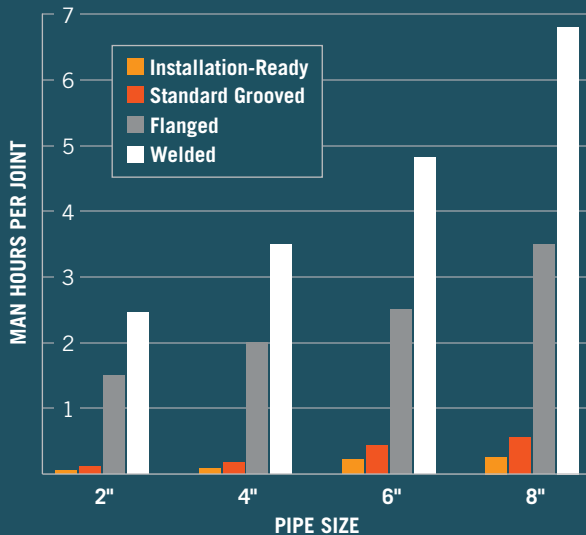
*Products for use on:  
Carbon Steel Pipe*



# System Solutions

## Meet and exceed tight schedules.

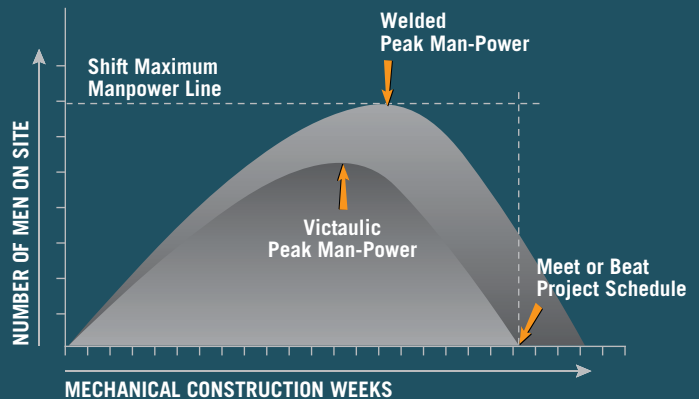
Standard grooved couplings install up to 5 times faster than welded joints and up to 3 times faster than flanged. Victaulic couplings featuring installation-ready technology install in half the time of standard grooved couplings.



[WWW.VICTAULIC.COM/SCHEDULE](http://WWW.VICTAULIC.COM/SCHEDULE)

## Improve safety and reduce risk.

By specifying Victaulic products and eliminating hotworks, an engineer can reduce risks during the design phase, contributing to a reduction in an owner's potential liability and costs. Eliminating hotworks when possible reduces risk for clients, occupants and contractors.



[WWW.VICTAULIC.COM/SAFETY](http://WWW.VICTAULIC.COM/SAFETY)

## Create a more sustainable environment.

### VICTAULIC PRODUCTS...

- Are made from 90 percent recycled material using Lean, responsible manufacturing processes.
- Keep building systems operating at peak efficiency because they allow for easy access to the system for unscheduled and routine maintenance.
- Match the life of the buildings in which they are installed, are recyclable, and can be re-used.
- Eliminate dangerous fumes and reduce energy consumption.

[SUSTAINABLEPIPING SOLUTIONS.COM](http://SUSTAINABLEPIPING SOLUTIONS.COM)





## Engineered by Victaulic to reduce risk and meet the needs of the end-user.

- Victaulic engineers elastomer formulations, designs gasket/seal geometries, and manufactures its own gaskets.
- Victaulic produces all of its own prototypes.
- Victaulic conducts metallurgical tests on every pour from its foundries.
- Victaulic uses product testing standards and industry specifications in addition to its own engineering expertise and strict requirements.
- Victaulic is a vertically integrated company, supporting continuous process improvement and consistent global manufacturing.
- Victaulic utilizes state-of-the-art analytical equipment.
- Victaulic relies on historical data from nearly one century of product development and manufacturing.

There is only one piping product manufacturer whose commitment to quality adds this kind of value, and that company is Victaulic.



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# System Solutions

## ENGINEERED TO MEET REAL NEEDS



### Accommodate piping movement with less stress on components.

The dimensions of the Victaulic coupling key are narrower than the pipe groove, allowing room for that coupling key to move in the groove while maintaining the pressurized seal of the gasket.

Additionally, the width of the coupling housing allows for pipe end separation, therefore leaving room for controlled linear and angular movement.

The mechanical coupling remains a self-restrained joint and the unique pressure responsive design provides sealing even under deflection and pipe movement.

#### VICTAULIC COUPLINGS ACCOMMODATE FOR THERMAL PIPING MOVEMENT IN FOUR WAYS:

- Providing an expansion joint that utilizes grooved mechanical pipe components
- Allowing the system to “free-float”
- Utilizing the linear movement/deflection capabilities of flexible grooved couplings
- Providing an expansion loop that utilizes grooved mechanical components

[WWW.VICTAULIC.COM/THERMAL](http://WWW.VICTAULIC.COM/THERMAL)





## Maintain operational integrity of piping systems during a seismic event.

Testing performed at the Real-Time Multi-Directional Experimental Laboratory at the Center for Advanced Technology for Large Structural Systems at Lehigh University in Bethlehem, Pennsylvania, USA proved the suitability of Victaulic grooved mechanical couplings to maintain operational integrity of piping systems during seismic events.



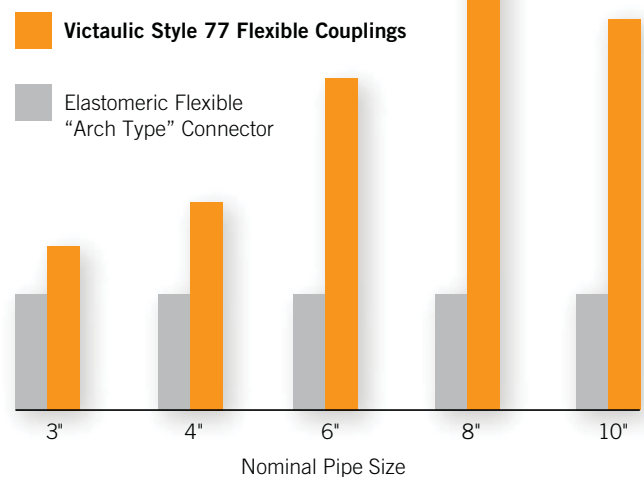
[WWW.VICTAULIC.COM/SEISMIC](http://WWW.VICTAULIC.COM/SEISMIC)

## Dampen overall vibration amplitude by 80–90 percent.

Seattle-based SSA Acoustics LLP conducted field measurements and concluded that when placed in a formation of three couplings linked near to each other in close proximity to the source of vibration, Victaulic mechanical piping systems deliver unsurpassed vibration isolation and sound attenuation characteristics.

### PERCENT\* ADDITIONAL ATTENUATION PROVIDED BY THREE (3) VICTAULIC STYLE 77 FLEXIBLE COUPLINGS

\*average for frequency range of 10–100 Hz



[WWW.VICTAULIC.COM/NOISEANDVIBRATION](http://WWW.VICTAULIC.COM/NOISEANDVIBRATION)



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# Your Integrated Project Delivery Partner

**Minimize risk to your schedule and your bottom line.**

Victaulic works with your business from design through construction to ensure your project runs as efficiently as possible.

## Design to construction

### Estimating

**3D Modeling** for multiple platforms  
(Revit, MEP, etc.)

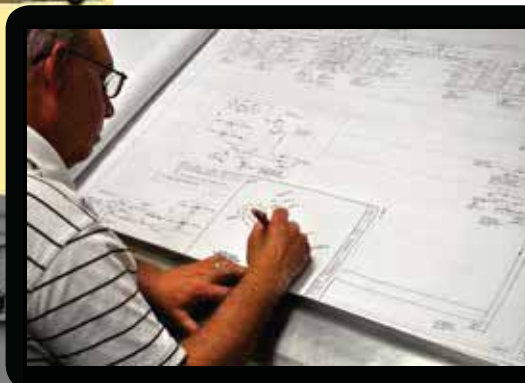
**BIM Coordination Packages** can help to reduce  
man-hours, calendar days and unexpected costs.

### Product Specification and Selection Services

**Value Engineering** such as accommodating  
system movement, vibration attenuation,  
system flexibility, alignment ease etc.



3D MODELS





VICTAULIC FABRICATION CELL

## Lean construction

**Lean Prefabrication Concepts** can increase through-put by removing bottlenecks.

- Lean manufacturing concepts applied to fabrication shop and field
- Lean fabrication shop evaluations
- VicFabrication Cell

**Virtual Truck Loading Software** allows for “one-touch” fabrication. patent-pending

## Integrated supply chain

**Safer System Installations** translates to fewer man-hours, lower costs and less exposure to risk.

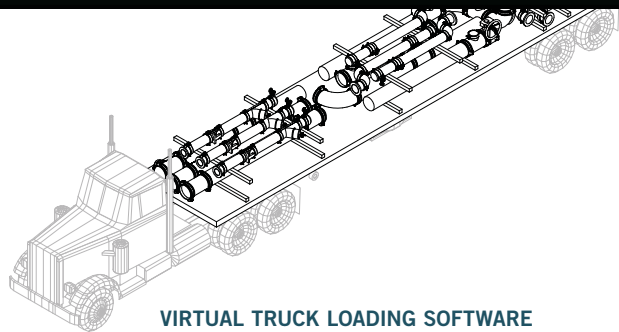
**Bag and Tag Services** minimize material handling.

**Coordinated Shipments** deliver products when and where you need them.

**Training and Continuing Education Opportunities**

**Inspection Services** places a guarantee on the pipe installation for the life of the system.

**Full Scope Product Offering**



VIRTUAL TRUCK LOADING SOFTWARE



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# Piping. Systems. Solutions.

Visit [www.victaulic.com](http://www.victaulic.com)

- Searchable product and global project database
- Downloadable product submittals and literature
- Piping software demos and modules
- Engineering support

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