



Durable, trouble-free and light, steel pipe systems

Piping solutions for financial efficiency, logistical simplicity, and peace of mind.



Contents

One Less Thing to Worry About.....	3
The Advantages of Choosing Alvenius.....	3
Lighter Pipes, Easier Handling	3
Alvenius Buy-Back.....	3
Fast, Reliable Couplings.....	4
Installation Up to Ten Times Faster	4
Solutions for Every Tunnel Need	5
Alvenius K10 and K70 Coupling Systems	5
Grooved Quick-Coupling System	5
Surface Coatings for Every Challenge	6
Tough – Hot-Dip Galvanizing (HDG)	6
Tougher – CorroFlo® Thermoplastic Coating	7
Toughest – RocShield® for Extreme Durability.....	7
The World's Finest Steel – Made in Sweden	8
Strength in Every Spiral.....	8
Committed to Low CO ₂ Emissions.....	8
Total Piping Solutions for Tunneling.....	10
Specifications at a Glance	10
Key Advantages	10

One Less Thing to Worry About

Alvenius delivers flexible piping systems that work

Harsh environments, tough conditions, maximum reliability, and ease of installation—Alvenius FlowMax® complete steel pipe systems are unrivalled in tunnel applications.

Our corrosion-protected system includes complete solutions with pipes, couplings, and fittings, backed by proven expertise and industry knowledge.

With tight deadlines, non-negotiable project completion dates, and clearly defined tunnel openings, the pressure on consultants and partners is immense.

That's why you can trust Alvenius to deliver all the way—on time, with the right functionality, and with total quality that eliminates system downtime and interruptions.

The Advantages of Choosing Alvenius

Broad Range and High Pressure Capabilities

Alvenius FlowMax pipes are available in diameters from 48 to 610 mm, designed for both low- and high-pressure systems—up to 100 bar.

Every pipe undergoes pressure testing up to 1.5 times its nominal pressure.

Certified Quality

Alvenius is certified according to ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and ISO 3834-2 (Welding Quality).

FlowMax pipes are dimensioned according to the SS-EN 13480 series, with tolerances conforming to SS-EN 10217-1.

Fire-Safe and Rapid Installation

Alvenius piping systems are assembled without welding or hot works.

This eliminates the safety risks associated with welding operations in tunnel environments.

Lower Operational Costs

Our high-strength steel and spiral-welded pipe construction allow for thinner walls, maximizing internal diameter relative to external diameter—resulting in lower flow resistance.

Lower flow resistance means:

- Potential to use smaller or lower-power pumps
- Possibility to reduce the number of pumps in the system

Lighter Pipes, Easier Handling

For the same pressure class, Alvenius spiral-welded pipes are significantly lighter than standard alternatives.

Even at 10 bar working pressure, plastic pipes become heavy and difficult to handle.

Alvenius has developed special pipes to meet demands for weights under 30 kg.

For example: Alvenius FlowMax 5.8 m, DN150 mm, weighs just 29 kg, compared to a standard steel pipe at 109 kg.

Lighter, tougher pipes offer clear advantages:

- Easy handling during installation and assembly/disassembly
- Improved ergonomics for workers
- Shorter times for maintenance and repairs
- More efficient transportation

Alvenius Buy-Back

A Sustainable and Economical Solution. Minimize – Reuse – Recycle.

At Alvenius, we manufacture high-quality pipes—not only proven by decades of experience but verified through rigorous third-party testing.

Our goal is to offer a product where energy recovery or landfill disposal are not the only options after its first life cycle.



Fast, Reliable Couplings

Recommended for Demanding Tunnel Operations

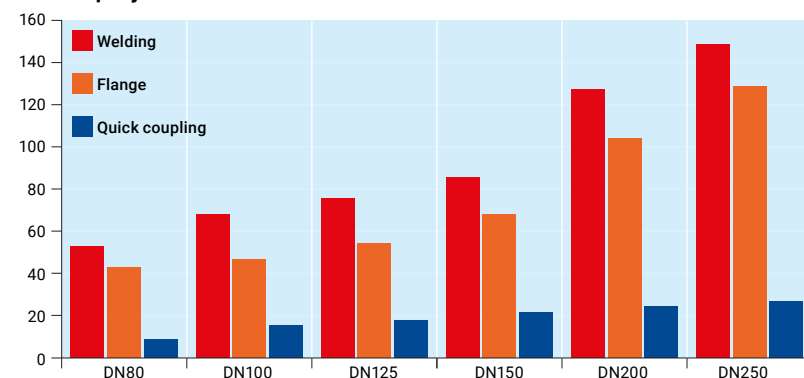
One of the key advantages of choosing Alvenius piping systems is exceptionally fast and simple installation—all thanks to our advanced quick-coupling technology.

Installation Up to Ten Times Faster

With Alvenius, no welding, no special tools, no extensive training, and no hot work are required. All you need are pipes, couplings, gaskets, and a socket wrench.

Compared to conventional welded systems, Alvenius quick-couplings enable assembly up to ten times faster, without the need for certified welders or hot work permits.

Minutes per joint



Solutions for Every Tunnel Need

Flexible Piping Options Tailored for Tunnel Construction

Choosing the right coupling for your system parameters—pressure, temperature, angular deflection, and media type—is easy with Alvenius.

No matter your requirements, Alvenius has the perfect solution.



Alvenius K10 and K70 Coupling Systems

K10 Quick-Coupling System

Developed according to metric standards, the K10 system is suitable for pressures up to 40 bar depending on pipe diameter.

K70 Articulated Coupling

For even faster and more flexible installation, the K70 system requires only a single bolt to be tightened.

Technical Highlights

- K10 Dim.: Ø48–318 mm
- K70 Dim.: Ø76–152 mm
- Self-sealing gasket, capable of handling vacuum under certain conditions
- Standard gasket material: EPDM rubber, resistant to chemicals
- Operating temperature range: -35°C to +110°C
- Option for nitrile or silicone gaskets for extended contact with petroleum products
- Vibration-resistant design
- Allows angular deflection up to 4°



Grooved Quick-Coupling System

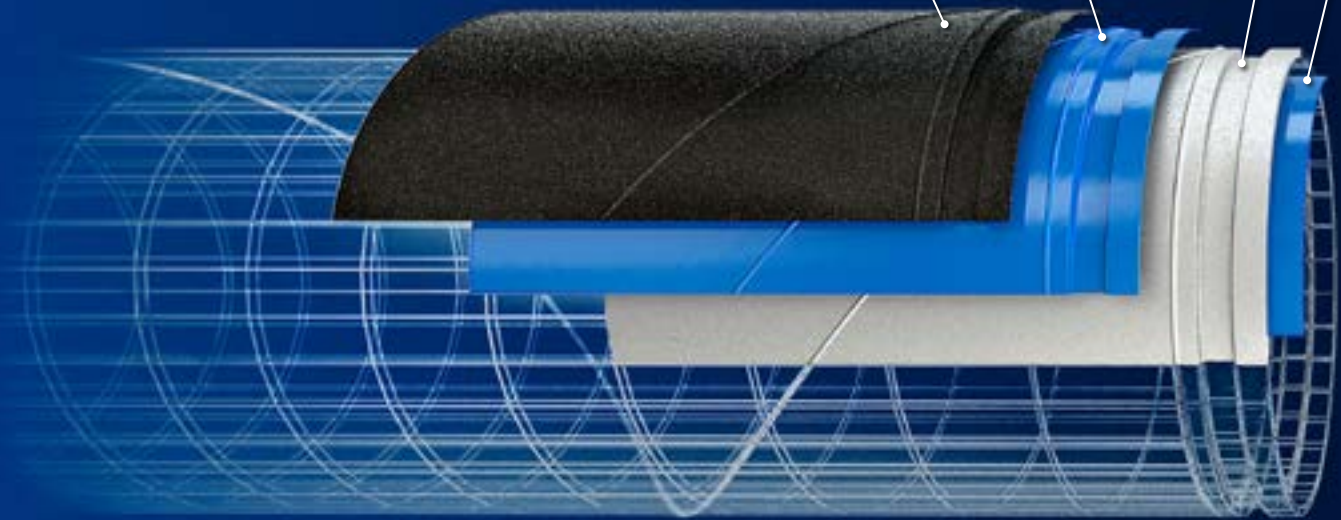
Our quick-coupling system for road tunnel applications is based on ISO standards, handling pressures from 15 bar to over 100 bar.

Depending on the pipe diameter, pressure class, and installation type, you can select between rigid or flexible couplings.

Key Features:

- Standard EPDM gaskets
- Operating temperature: -35°C to +110°C
- Up to 2.5° angular deflection
- Vibration-resistant
- Accommodates axial movement thanks to built-in axial play

RocShield® CorroFlo® High-Strength Steel CorroFlo®



Surface Coatings for Every Challenge

Added Reliability for Tunnel Operations

Alvenius FlowMax pipes are engineered for high efficiency, featuring thin walls and low flow resistance.

But for Alvenius, efficiency alone isn't enough. In order to perform at the highest level over time in aggressive environments, pipes require exceptional surface protection.

That's why all FlowMax pipes are coated with high-performance protective finishes, tailored to meet the challenges of real- world tunnel operations.



Tough – Hot-Dip Galvanizing (HDG)

HDG is the ideal surface protection for pipes that need to be assembled, dismantled, and reassembled multiple times without losing strength.

The robust zinc layer provides:

- Outstanding impact resistance
- Excellent weather and corrosion protection
- Unique self-healing properties—minor surface damages are automatically resealed by the zinc coating
- HDG offers an extra level of security and resilience for tunnel construction projects where reliability is critical.



These firefighting pipes have been installed in the Stockholm subway for over two decades. While the exterior shows clear signs of age, the interior remains in impeccable condition.

No matter what type of media your piping system is handling, the right surface coating dramatically enhances pipe performance.

Each application demands its own specific protection—and with Alvenius, you can be confident that you'll get the coating solution you need to secure long-term reliability and operational excellence.



Tougher – CorroFlo® Thermoplastic Coating

CorroFlo takes protection a step further, offering a range of unique advantages:

- Extremely low flow resistance with an absolute roughness value of 0.05 mm
- Enables smaller or lower-power pumps without compromising efficiency
- Possibility to reduce the number of pumps in the system
- Excellent adhesion—no risk of cracking or flaking
- Certified for drinking water according to KTW-BWGL
- Electrically insulating
- Air operating temperature: up to +60°C
- High chemical resistance against acidic and alkaline substances• Ideal for outdoor use—UV-resistant and flexible down to -70°C
- Meets C5 corrosion class for extreme salt-rich environments
- Environmentally friendly—free from Bisphenol A
- 500 µm coating thickness
- 800% elongation at break



Toughest – RocShield® for Extreme Durability

For maximum endurance and resistance to heavy wear and handling, FlowMax pipes can be further reinforced with RocShield—an additional 500 µm LDPE coating applied over the CorroFlo layer.

RocShield delivers:

- Enhanced resistance to chemicals, abrasion, and mechanical impact
- Exceptional impact strength and abrasion resistance
- Stronger, tougher surfaces
- Improved grip for safer and easier pipe handling

The World's Finest Steel – Made in Sweden

It's no coincidence that Alvenius FlowMax pipes deliver the highest quality on the market. Our pipes are manufactured using SSAB's Domex® high-strength steel, specifically optimized to meet Alvenius' demanding performance standards.

Strength in Every Spiral

FlowMax pipes are spiral-welded using pressure vessel-grade steel, combining exceptional form stability with thin wall thickness and superior strength.

Thanks to the outstanding material properties, FlowMax pipes offer a unique combination of high strength, smooth surfaces, and ultra-thin walls—something no other manufacturer can match.

Certified Excellence:

- ISO 9001 (Quality Management)
- ISO 14001 (Environmental Management)
- ISO 3834-2 (Welding Quality Assurance)
- FlowMax pipes are dimensioned according to the SS-EN 13480 series, with tolerances according to SS-EN 10217-1.

Committed to Low CO₂ Emissions

SSAB, the supplier of Domex® steel, is among the world's leading steel manufacturers in minimizing CO₂ emissions—7% better than the European average.

This commitment to environmentally responsible production fully aligns with Alvenius' mission to create a greener, more sustainable future.

When you choose Alvenius FlowMax, you choose superior performance, sustainable innovation, and steel that's built for the challenges of tomorrow.

SSAB	Steel Grades			
	Yield Strength, Rp0.2 [MPa]	Tensile Strength, Rm [MPa]	Elongation at Break [%]	EN 10149-2 Equivalent
Domex 240 YP	240	360 – 460	28	S235
Domex 420 MC	420	490 – 620	20	S420 MC

K10 Pressure Ratings					
DN*	Pipe Dimension		16	Working Pressure[bar]	
	Inch	OD [mm]		25	40
65	3	76.1	•	•	•
100	4	101.6	•	•	•
125	5	133.0	•	•	•
150	6	152.4	•	•	•
200	8	203.2	•	•	•

* = Other dimensions available on request

FlowMax Pressure Ratings						
DN*	Pipe Dimension		16	Working Pressure[bar]		
	Inch	OD [mm]		25	40	63
80	3	88.9	•	•	•	•
100	4	114.3	•	•	•	•
125	5	139.7	•	•	•	•
150	6	168.3	•	•	•	•
200	8	219.1	•	•	•	
250	10	273.0	•	•	•	
300	12	323.9	•	•	•	

* = Other dimensions available on request

DN (Nominal Diameter):
The standardized internal diameter used for specifying pipes, fittings, and valves. It represents an approximate value, not the exact internal measurement.

Inch (in):
The imperial unit of measurement used to describe pipe dimensions. Commonly used alongside millimeters for international specifications.

OD (Outside Diameter) [mm]:
The external diameter of a pipe, measured from outer edge to outer edge. A critical measurement for pipe compatibility and installation.

Total Piping Solutions for Tunneling

Everything you need for fast, safe, and reliable tunnel installations built to perform under pressure.

Alvenius delivers everything you need for a high-performance piping system in tunnel construction.

FlowMax and K10 systems include pipes, couplings, valves, bends, tees, adapters, threaded outlets, and more—designed to meet the toughest operational demands underground.

Specifications at a Glance

Dimensions:

- FlowMax: 89–610 mm
- K10: 48–318 mm

Standard Length:

- 6.0 meters
(Other lengths available on request.)

Steel Quality:

- SSAB Domex® 240 YPD-ALV
- SSAB Domex® 420 MCD-ALV

Surface Coatings:

- HDG (Hot-Dip Galvanization)
- CorroFlo Thermoplastic Coating
- RocShield High-Resilience Coating

Pressure Rating:

Designed according to SS-EN 13480 standards

Key Advantages

Weight Savings:

FlowMax pipes are approximately 40% lighter than conventional standard pipes in the same dimension.

Fast Assembly:

Up to 10 times faster installation compared to traditional methods

No extensive training or special tools required

Flexibility:

Systems are built for easy assembly, disassembly, and reassembly, making them ideal for dynamic tunnel environments.

Fire Safety:

No welding, no hot work required—minimizing risks during installation.

Low Operating Costs:

Low flow resistance enables the use of smaller, more energy-efficient pumps.

Full Range of Accessories:

Alvenius offers a complete package of pipes, fittings, valves, and couplings, tailored to your project's needs.

Choose Alvenius for complete, high-performance, and future-ready piping solutions in tunnel construction worldwide.





Since 1951, Alvenius has delivered advanced quick coupling steel pipe systems, earning a global reputation for performance, reliability and innovation.

Our solutions support critical operations in Mining, Fire Protection, Tunneling, Industry, Water Supply and Snow Making.

With engineering rooted in Sweden and a global customer base we understand the standards, environmental conditions and requirements that vary from market to market.

Our international experience ensures that we can support your needs. Wherever you are, we're ready to support your success with smart, durable piping solutions.

Get in touch and discover what Alvenius can do for you.



Member of Boxholm Group