



Performance in Piping

Swedish Manufacturer of Steel Pipes





Alvenius – performance pipes since 1951

Scorching deserts. Wide-sweeping ski slopes. Complicated tunneling. Mines, harbours and refineries. These are some examples of areas where Alvenius has been working successfully since the 1950s.

Alvenius' success is based on Swedish steel, and our FlowMax® pipes are spirally welded with unique pressure vessel-class, high-strength steel. This means we can make the pipes thin-walled yet strong. And the spiral welding means they stay straight.

There are many advantages: low weight, a larger internal diameter but the same external diameter and the same working pressure.

We are also able to make pipes with stepless internal diameter, thanks to the spiral welding method.

Complete systems

System Alvenius includes everything needed to design an efficient, reliable pipe system with a long service life – pipes, couplings, valves, bends, T-pieces, transition pieces, threaded sockets, etc.

Flexibility and speed are keywords at Alvenius. Quite simply, you receive exactly what you need, no matter how large or small your need may be. Need small series? Then there are few manufacturers that can match us.

One-stop shopping. One contact for your entire pipe purchase.

How many calls do you want to make to buy pipes, couplings, coating, carriage?

One is all you need – to Alvenius.

We have the full range of expertise in-house. And expertise, flexibility, quality and delivery precision are built into each pipe or system that we deliver.



World-leading steel. Made in Sweden.

It's not a coincidence that Alvenius pipes are of the highest quality on the market. They are made of steel from the Swedish company SSAB, optimised for our specific requirements.

High strength, smooth surface, good flatness and extremely narrow thickness tolerances are typical properties of the steel grades. For Alvenius, this means steel that is light, strong and durable.

Alvenius is certified according to the quality standard ISO 9001, the environmental standard ISO 14001 and the welding quality standard ISO 3834-2.

The FlowMax® pipes are designed and manufactured according to the pressure equipment directive PED 2014/68/EU and SS-EN 13480 series. Tolerances according to SS-EN 10217-1. This means FlowMax® pipes are of the highest possible quality.

Low CO₂ footprint

SSAB is also committed to continuous environmental work aimed at minimising the adverse environmental impact of its operations. SSAB is one of the best in the world in iron ore-based steel-making when it comes to CO₂ efficiency: 7% better than the European average.

And this is totally in line with Alvenius' dedication to green production.



Swedish steel for maximum performance

Steel qualities				
SSAB	Yield strength, ReH [MPa]	Tensile strength, Rm [MPa]	Elongation at break [%]	EN 10149-2 equivalent
Domex 240 YP	240	360 – 460	28	S235
Docol 260 LA	260	350 – 430	16	N/A
Domex 420 MC	420	490 – 620	20	S420 MC

Weight (kg/m)											
Pipe size ¹⁾		Wall thickness (mm)									
Size (in)	Size (mm)	1.25	2.0	2.1	2.8	3.0	3.3	3.6	4.4	5.7	6.3
2 ½"	76.1	2.3	3.7	3.8	5.1						
3"	88.9	2.7	4.3	4.5	5.9						
4"	101.6	3.1	4.9	5.2	6.8						
4"	114.3	3.5	5.5	5.8	7.7						
5"	139.7	4.3	6.8	7.1	9.5						
6"	152.4	4.7	7.4	7.8	10.3						
6"	168.3	5.1	8.2	8.6	11.4						
8"	203.2	6.2	9.9	10.4	13.8	14.8	16.3	17.7	21.6	27.8	30.6
8"	219.1	6.7	10.7	11.2	14.9	16.0	17.6	19.1	23.3	30.0	33.1
10"	254.0		12.4	13.0	17.3	18.6	20.4	22.2	27.1	34.9	38.5
10"	273.0		13.4	14.0	18.7	20.0	21.9	23.9	29.1	37.6	41.4
12"	318.0		15.6	16.4	21.8	23.3	25.6	27.9	34.0	43.9	48.4
12"	323.9		15.9	16.7	22.2	23.7	26.1	28.4	34.7	44.7	49.3
14"	355.6					26.1	28.7	31.2	38.1	49.2	54.3
16"	406.3					29.8	32.8	35.8	43.6	56.3	62.1
18"	457.0					33.6	36.9	40.3	49.1	63.4	70.0
20"	508.0					37.4	41.1	44.8	54.6	70.6	77.9

1) Stepless dimensions on request

Available pressure classes							
Pipe size (Victaulic style)			Working pressure, bar				
ISO DN	Inch	DY (mm)	16	25	40	63	80
80	3	88.9	x	x	x	x	x
100	4	114.3	x	x	x	x	x
125	5	139.7	x	x	x	x	x
150	6	168.3	x	x	x	x	x
200	8	219.1	x	x	x	x	x
250	10	273.0	x	x	x	x	x
300	12	323.9	x	x	x	x	x
400	16	406.4	x	x	x		
500	20	508.0	x	x			



Low flow resistance
+ Lower operating costs
= Better total economics

Still believe a pipe is... just a pipe?

Then it's time to reconsider. Piping solutions from Swedish Alvenius Industries are quite different from what you are used to.

Larger inner diameter for the same outer diameter

Thinner walls give a larger inner diameter. Because of the high quality steel and the spiral welding technique, the pipes are light-weight and strong.

This means that we can use a thinner steel coil, which in turn gives you a pipe that has a larger inner diameter for the same outer diameter. Or you can keep a specified flow but reduce the outer dimension.



Compare with any pipe material and Alvenius FlowMax® pipes are thinner and lighter.

It's the inside that counts

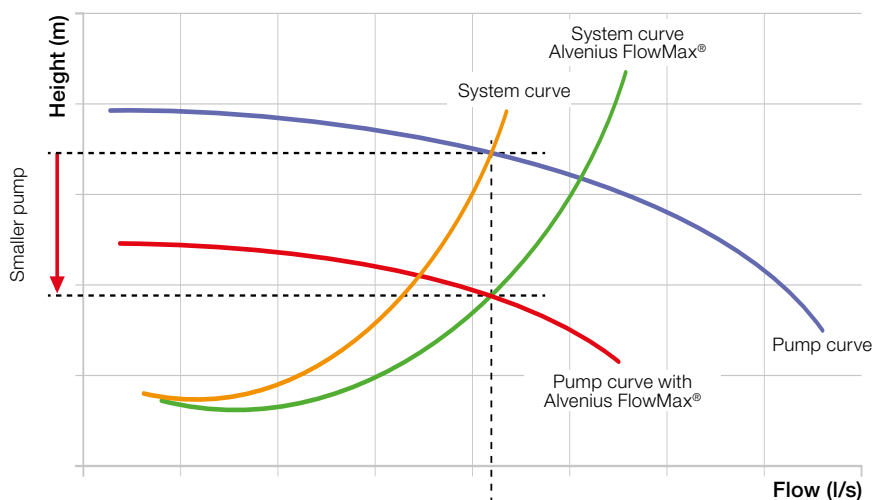
Because the FlowMax® pipes has a CorroFlo® coating, the inside surface is slippery, i.e. friction is reduced and flow resistance is the lowest possible. Meaning you save up to 50% in energy consumption.

FlowMax® pipes offer a range of advantages:

- You can choose a pipe of smaller diameter but keep the same pump capacity
- You can select a smaller pump
- In larger systems you can reduce the number of pumps

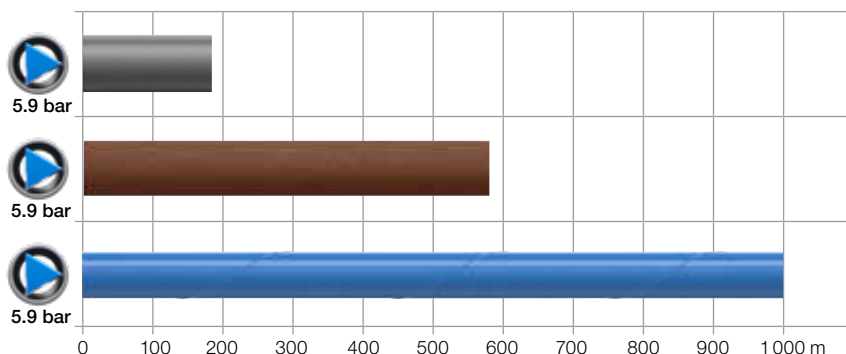
The result – lower investment costs and lower running costs.

Pump sizing with pipes of the same DN



Pump over longer distance with the same pressure

Conditions – Pump pressure 5.9 bar. Required end pressure 5 bar. Flow 150 l/s. DN300. PN25.



PE, 5 bar, 180 m
ID 229.2 mm. Speed 3.64 m/s

Ductile Iron, 5 bar, 580 m
ID 301.4 mm. Speed 2.10 m/s

Alvenius FlowMax®, 5 bar, 1000 m
ID 316.9 mm. Speed 1.90 m/s



Alternate joining methods

One of many advantages with Alvenius solutions is that installation is very easy due to the quick-coupling systems.

No welding. No special tools. No time-consuming training plus entirely without hot work.

Quick couplings (VICTAULIC)

Alvenius offers quick coupling systems in both metric and ISO standards for pressure from 16 bar up to over 100 bar.

Different types of quick couplings are available, depending on the type of installation, the dimensions and the pressure rating. They are available as rigid or flexible couplings with a wide range of rubber gaskets, depending on the application and the type of medium to be pumped.

- Self-sealing gasket. Also suitable for vacuum under certain circumstances
- Standard gasket of EPDM rubber, also resistant to chemicals
- Working temperature -35°C to +110°C
- Option to use nitrile or silicone gaskets for long-term contact with petroleum
- Deflection up to 2.5°
- Insensitive to vibrations
- Absorbs axial movement in the pipe system thanks to axial play in the coupling



Plain end couplings (STRAUB)

Plain end couplings eliminate the need for any pipe end preparation and are available in different types, depending on the type of installation, the dimensions and the pressure rating.

- Self-anchoring
- Resists axial force
- Detachable
- Re-usable



Flanges

Alvenius pipes are available with flanges welded onto the pipe ends. The flanges are available in ANSI and DIN standards with different pressure ratings.

- Strong due to better impact resistance
- High safety factor against pressure fluctuations, water hammer and outside impacts



A coated pipe is a profitable and reliable pipe

No matter what media you pump in your piping system, a surface coating enhances the performance dramatically. Especially for distribution of drinking water, where coating is a must.

That's why the FlowMax® piping system from Alvenius is completely covered and coated with highly effective CorroFlo®.

For extra protection the pipes outside can be coated with RocShield®.

HDG

HDG (hot-dip galvanization) is ideal for pipes that are fitted and subsequently removed thanks to the very robust coating.

The deep protection makes HDG pipes more impact-resistant and more resistant to wind and weather than untreated pipes. The zinc layer also has a unique 'self-healing' property if the surface layer becomes damaged.

CorroFlo®

Alvenius FlowMax® pipes are coated internally and externally with CorroFlo®.

FlowMax® pipes are ideal in environments where, for example, acidic water and aggressive chemicals are a problem. Tests have shown that the pipes meet the requirements for the toughest corrosivity category, C5-M (marine environment), and have an expected service life of at least 75 years – even in aggressive environments.

The pipes have a low-pressure drop thanks to low internal friction.

RocShield®

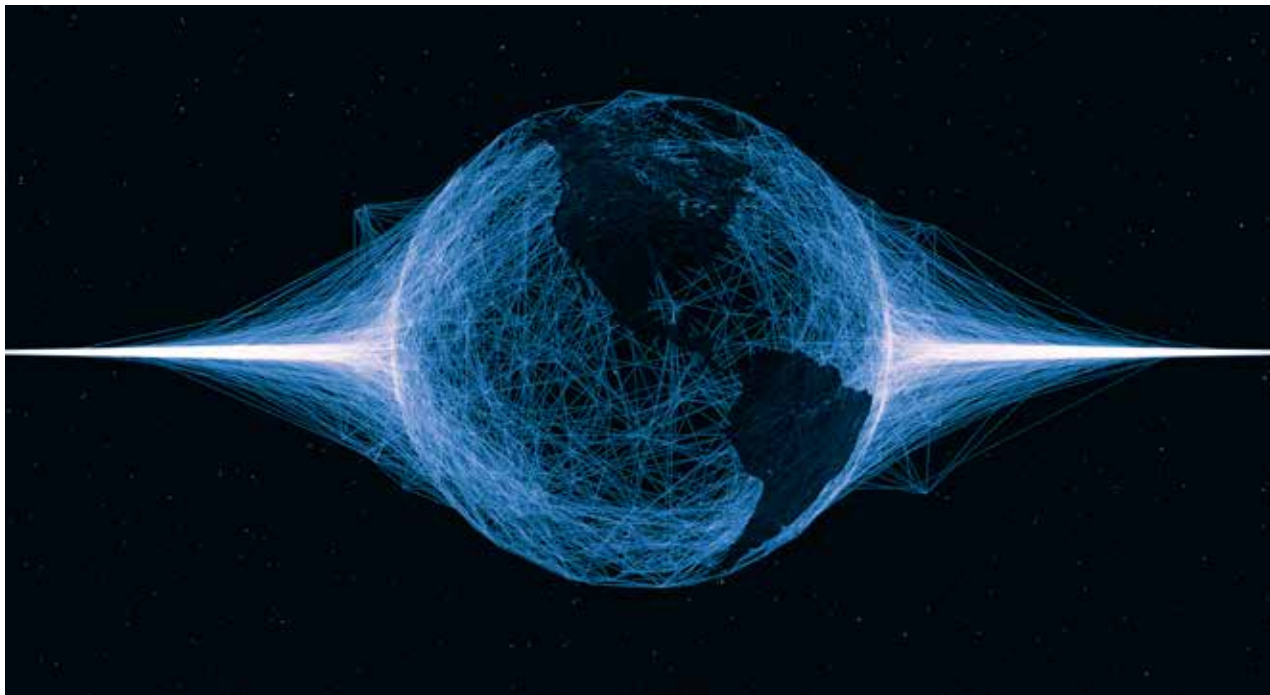
For additional durability and resistance to abrasion and impacts, the exterior of FlowMax® pipes can be coated with RocShield® = 500 µm LDPE on top of the CorroFlo® coating.

RocShield® produces a stronger, harder surface with greater resistance to weather and chemicals, with many advantages:

- Simpler, safer handling due to the grip-friendly outer surface
- Very high resistance to abrasion and mechanical impact
- Very high resistance to impacts







Alvenius was founded in 1951 and ever since we have focused on supplying the global market with high-quality quick coupling steel pipe systems.

Today, Alvenius focuses its expertise on the segments tunnels, mines, industry, fire protection and extinguishing, water and wastewater systems and artificial snow making.

We have a presence in Asia, Africa, the Middle East, North and South America, Europe and, of course, our domestic market Sweden.

Our international approach offers many advantages.

Above all else, it means that we understand the conditions and demands of your particular market – wherever that may be.



Member of Boxholm Group



AB Alvenius Industrier • P.O. Box 550 • SE-631 07 Eskilstuna • Sweden • Phone: +46 16 16 65 00 • Fax: +46 16 12 26 34
Email: info@alvenius.se • alvenius.com

