

OUR SOLUTIONS FOR MISCIBLE GAS INJECTION





Introduction

When we talk about miscible gas injection (MGI), often the following ideas spring to mind:

- High pressure
- Corrosive environment
- Resistance at low temperatures

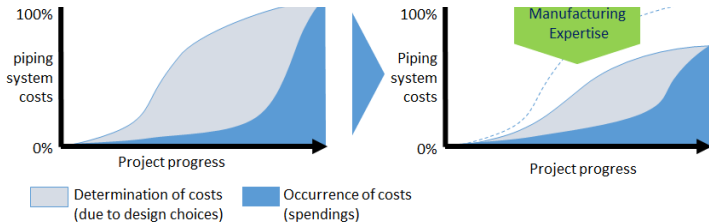
Our unique resources and industrial knowledge help your company find smart solutions designed to cost for the toughest procurement challenges and offer attractive technical solutions.

We go beyond your specifications ensuring the integrity of your line pipe.

How can integrating our manufacturing expertise help you save money?

Ignorance of cost drivers and state-of-the-art in pipe manufacturing may lead to suboptimal choices early in the project when balancing integrity, CAPEX and OPEX. Cost overruns may be discovered during the project, but possible savings may not be identified, and OPEX or integrity issues will only be discovered after project finalization. We are able to identify cost drivers for you and exchange with you on design and manufacturing options to optimize your project allowing you to drive project performance according to your needs.

Manufacturing expertise leads to optimized design choices and reduced spending.





Context

MGI is a mature technology and its deployment in more complex or bigger fields can lead to challenges.

The necessary injection systems need to be adapted to each oil field and might be difficult to design and procure. The more sour the injectant and the higher the injection pressure, the more challenging the task for the project team.

Our deep expertise in metallurgy, manufacturing and weld execution, ensures that we are able to significantly contribute to your projects, especially early on for instance when the basis of design is determined.

Heavy Wall Pipe

Grade B, 6, others

Depending on your design and safety requirements, with exceptional properties and extraordinary sizes.

Compatible with our weld offer

Typical services and ranges:

Depending on OD, starting from 25mm and up to and beyond 100mm wall thickness. Extreme flexibility in various sizes, expertise to ensure testing, surface enhancements, logistics, fittings, and more.

We support your design to cost by choosing manufacturing technology based on dimension and quantity.



Injection Line Pipe

Non-sour: Up to X80Q

Sour: Up to X65QS

Compatible with our weld offer

Typical product dimensions:

114.3 to 508mm OD

For high pressure scenarios, we have delivered up to 55mm wall thickness.

Hydro testing, coating, and more.

P22 can also be used in sour, cold, exposed conditions

Corrosion and pressure:

Low hardness plus good weldability

(e.g. 3 cycles simulated PWHT), low-temperature toughness performance, high pressure hydro testing.



Welding

Why automatic welding with Serimax?

- Ensures consistency for each weld
- Improve productivity with narrow gap welding (up to 50mm wall thickness)
- Automatic welding methods meet requirements with a better safety margin

The controlled heat input of our automatic welding process produces reliable and repeatable results. In addition, in most cases it is possible to avoid post-weld heat treatment (PWHT), even under the strictest acceptance criteria.

Case Study

Country: Oman

Line Pipe: 168.3, 219.1, 323.8 and 508mm OD (13kt)

Wall Thickness: up to 50.2mm

Product Grade: X65QS with 3LPE high temperature (+90°C)

Automatic Welding: 323.8 and 508mm OD

Non-standard sampling and testing criteria such as:

- Toughness tests at -40°C
- Simulated PWHT, three cycles
- Project specific corrosion testing
- Hydro-test up to 870 bar
- Reinforced non-destructive testing (NDT)

VALLOUREC

Part of our product range next to a 1.80m person. We offer the largest dimensional range of seamless pipe.



Global Figures

1.4 million metric tons shipped (2015)

€3.8 billion in sales (2015)

>20,000 Employees



50 Production facilities worldwide across 20 countries

6 R&D centres worldwide





Onshore & Offshore Line Pipe

Onshore

We offer the largest dimensional range of seamless pipe (diameter and wall thickness)

- Flowlines & gathering lines
- Transmission lines
- Water & gas injection
- Process piping

Offshore

Specialist supplier for deep and ultra—deep offshore line pipe projects

- Infield flowlines,
- Export lines
- Water & gas injection
- Riser pipe



Products & Services

Products

- X52 – X80
- Low and high temp service grades
- High yield grades for ultra heavy wall products (above 50mm)
- Homogenous fine grain steel for superior properties (yield, toughness, low hardness, corrosion resistance)
- Sour service expertise
- Controlled steel sources

Services

- Project management
- Qualification and testing
- Enhanced surfaces
- Marking and traceability
- Pipe end solutions
- Packaging + logistics



Welding Solutions

Serimax is a specialised welding company offering a range of services to support industry demands from basic to sophisticated welding parameters with over 40 years experience.

Welding Solutions for:


- Onshore
- Offshore
- Construction
- Fabrication of power, chemical or refinery plants

Passionate about what we do, we invest heavily in R&D, to meet tomorrow's challenges head on.

www.serimax.com

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References

Country: Kazakhstan 
Line Pipe: 300km sour service
Outer Diameter: 60.3 to 406.4mm
Wall Thickness: up to 28mm
Product Grade: 6 to X60QS

Country: Russia 
Line Pipe: 1.5kt
Outer Diameter: 508mm
Wall Thickness: 33.7mm
Product Grade: X70Q

Country: Saudi Arabia 
Pipeline Welds: 6020 welds
Outer Diameter: 168.3 to 914.4mm
Wall Thickness: 12.7 to 42.9mm
Product Grade: X65QS

Challenges



Corrosion, high pressure
gas injection pipeline

Challenges



High pressure gas feed
for South Stream Pipeline.

Challenges



Internally coated pipe, heavy wall,
sour service