

*PE 100(-RC)*  
*Solid wall extruded*

up to  $\varnothing$  3500mm

- 3260mm
- 3000mm
- 2830mm
- 2720mm
- 2500mm
- 2300mm
- 2250mm
- 2000mm
- 1800mm
- 1600mm
- 1500mm
- 1400mm
- 1200mm
- 1000mm
- 900mm
- 800mm

# XXL piping systems

**Exceptional in dimension and quality**



# AGRU PE 100 (-RC) XXL piping systems



The most economical long-term solution for seawater intake / discharge, outfall, sewage and industrial process lines.

Two state-of-the-art production plants for pipes and fittings, sophisticated welding technology, extensive know-how in engineering and logistics. This is just one part of the AGRU service, which provides a customer-related one-stop shopping solution.

We follow our client's needs and support them during the entire project-realization phase – from the beginning to the approval. This qualifies AGRU as the most experienced and reliable EPC partner.



Watch the movie:



**ISO 9001**

Quality management systems



**ISO 14001**

Environmental management systems



**ISO 45001**

Occupational health and safety



**EN 12201**

Plastic piping systems for water supply



**ISO 4427**

Plastic piping systems for water supply



**ASTM F714**

Standard Specification for PE, DR-PR Based on OD

# Polyethylene - material of choice

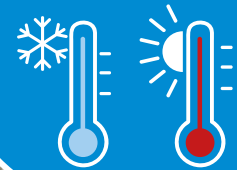
## COST AND TIME SAVING INSTALLATION

- Extremely flexible and lightweight
- Homogeneous and durable welding connections
- Allowing various installation methods
- Fast & safe offshore sinking process
- Reducing manpower on site
- UV resistant
- Good seismic resistance against ground settlements and movements of soil

## EFFICIENT AND MAINTENANCE-FREE OPERATION

- Smooth surface, perfect flow characteristics
- Resistant against corrosion and abrasion
- Insensitive to pressure surges (up to 200% of the operating pressure)
- Physiologically safe
- Fully recyclable

Installation under  
challenging weather  
conditions possible

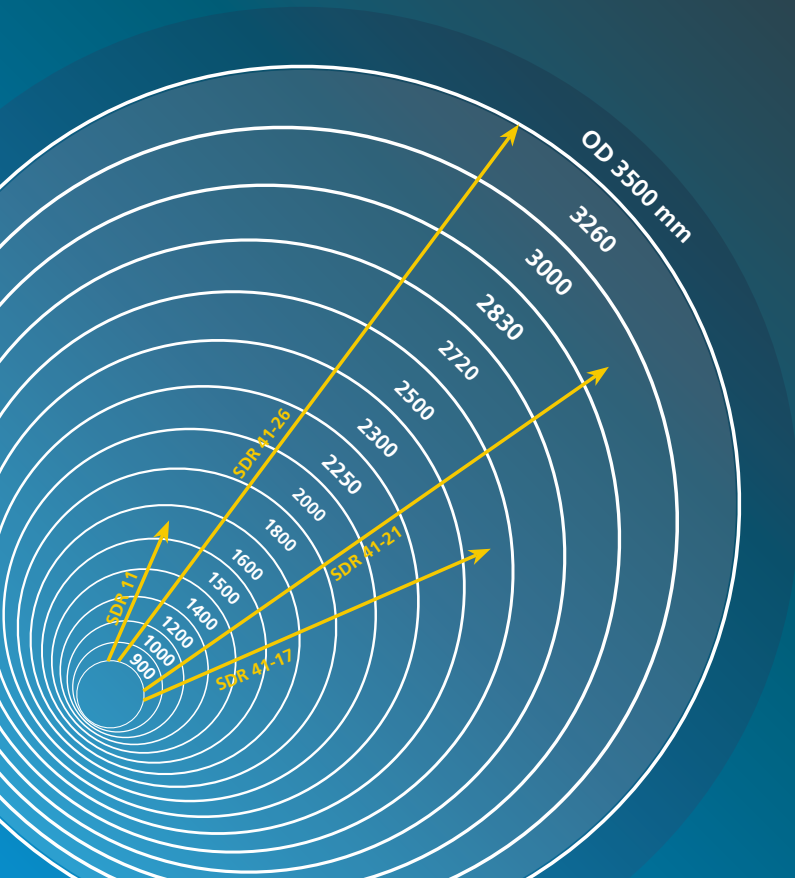


# We provide system solutions

AGRU provides the full dimension range according to current standards. Pipes are produced project specific with seamless lengths up to 600 m.

## PIPE SUPPLY RANGE

Non-“standard” dimensions can be produced on demand.



## A state-of-the-art production plant



### NEW STANDARDS IN PLASTICS TECHNOLOGY

We are proud to introduce our new state-of-the-art production facility, which specializes in custom XXL solutions to perfectly meet your needs. With the largest machining capacity in Austria, this facility is equipped to meet the highest standards of precision and efficiency, enabling the machining of very large and heavy plastic parts up to 4x4x4 metres.

# Value engineering

## RAW MATERIAL

High-quality resins (including well dispersed high-grade additives) are used for AGRU XXL Piping Systems which are in conformance to both, PE 100 (-RC) and PE 4710 requirements.



## PRODUCTION TECHNOLOGY – DEVELOPED BY AGRU

Due to ongoing innovation in production technology, AGRU expands its leading position for XXL piping systems and is now producing the world's largest solid wall extruded PE 100 (-RC) / PE 4710 pressure pipe.



## UNCOMPROMISING EXCELLENT QUALITY

AGRU implements stringent quality control, that exceeds international standards. Additionally, each product produced is fully documented and traceable along the entire supply chain – from raw material to the final product.

# Fitting supply range

## FLANGE COMPONENTS

AGRU provides the complete range for durable flange connections including:

- EPDM gaskets with steel inserts
- Backing rings / blind flanges in various steel qualities
- Bolt sets in various steel qualities (screws, nuts, washers)

AGRU provides a complete system solution. Fittings are available up to OD 3500 mm acc. to the respective pipe SDR.



Sweep bends	Bend 11° - 90°	Tee	Reduced Tee	Stub Flange	Reducer	End Cap	Toploadsaddle	E-Coupler
OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD / branch Ø [mm]	OD [mm]
800	800	800	800 / ≤700	800	800/630/800/710	800	800 / ≤500	800
900	900	900	900 / ≤800	900	900/710/900/800	900	900 / ≤500	900
1000	1000	1000	1000 / ≤900	1000	1000/900	1000	1000 / ≤500	1000
	1200	1200	1200 / ≤1000	1200	1200/1000	1200	1200 / ≤710	1200
	1400	1400	1400 / ≤1200	1400	1400/1200		1400 / ≤710	1400
	1500	1500	1500 / ≤1200	1500	1500/1200		1500 / ≤7100	1500
	1600	1600	1600 / ≤1400	1600	1600/1400		1600 / ≤900	1600
	1800	1800	1800 / ≤1600	1800	1800/1600		1800 / ≤1000	1800
	2000	2000	2000 / ≤1800	2000	2000/1800		2000 / ≤1200	2000
	2250	2250	2250 / ≤2000	2250	2250/2000		2250 / ≤1200	2250
	2300	2300	2300 / ≤2000	2300	2300/2000		2300 / ≤1200	
	2500		2500 / ≤2250	2500	2500/2250		2500 / ≤1200	
	2720			2720			2720 / ≤1200	
	2830			2830			2830 / ≤1200	
	3000			3000			3000 / ≤1200	
	3260			3260			3260 / ≤1200	
	3500			3500			3500 / ≤1200	

Special dimensions on request. Smaller dimensions according to standard catalog.

# From customized parts to the final product.

## DESIGN, ENGINEERING, IN-HOUSE FABRICATION

Vast capabilities allow AGRU to provide tailor-made and timely solutions, all from a single source – this qualifies AGRU as the most valuable partner for EPC contractors!



Pre-fabricated by AGRU



Ready for global shipping



# Proven and reliable jointing methods



## Heated plate butt welding

Homogeneous welding connections across the entire wall thickness provide a monolithic system that maintains full pressure rating without any weak points. Heated plate butt welding is a long-term and proven welding method that is available for all dimensions!

### CLEAN, FAST, SAFE

AGRU offers highly automated welding procedures with full documentation and traceability. This welding method requires less labor and keeps you one step ahead of any other fusion technology.



Step 1



Step 2



Step 3





# AGRU XXL electrofusion coupler

AGRU supplies large diameter bifilar electrofusion couplers which can conduct full pressure conform welds in tight spaces or are suitable for pipe repair situations.

UP TO  
OD 2250 MM

COMPACT, FULLY PRESSURE CONFORM



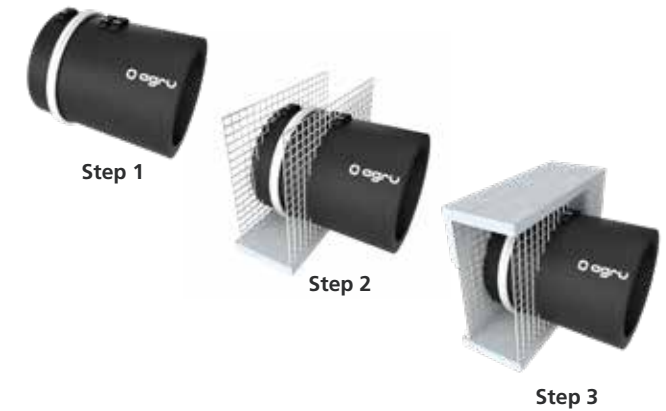
# Connections to building structures



## AGRU puddle flange

AGRU supplies special fittings for water tight transitions to buildings and other concrete structures.

**PROJECT OPTIMIZED, WATER TIGHT**



# Flange connections

AGRU supplies mechanical connections that enable detachable transitions to buildings and/or other pipe materials.

**PROJECT OPTIMIZED, DETACHABLE, SAFE**



# Pipe branches

The spigot saddle system topline utilizes a specialized clamping system that offers an efficient and flexible solution to create branches that are electro-fusion welded to existing or new pipelines in on- or offshore locations.

**DESIGN-FLEXIBLE, SAFE**



# Special applications



## AGRU Flex Restraint

The AGRU Flex Restraint is a flexible bar for electro-socket welding onto PE 100 (-RC) pressure pipes. This way, a rigid system by fixed points can be created that absorbs high forces to prevent axial movement.

This special fitting is placed onto the pipe with a tensioning belt and is homogeneously welded by electro-socket welding in accordance with AGRU installation guidelines, based on DVS 2207-1.

The AGRU Flex Restraint offers a strength of 40 kN in axial direction. If higher forces have to be absorbed, several Flex Restraints are to be distributed around the circumference.

### APPLICATION:

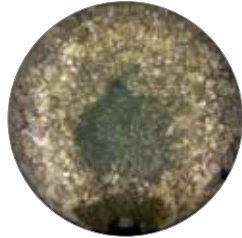
- Create a rigid system by using AGRU Flex Restraints
- Fixing concrete ballast blocks
- Create wall anchors
- Secure offshore pipes during installation using concrete ballast blocks.



# AGRU solution for chlorination pipes

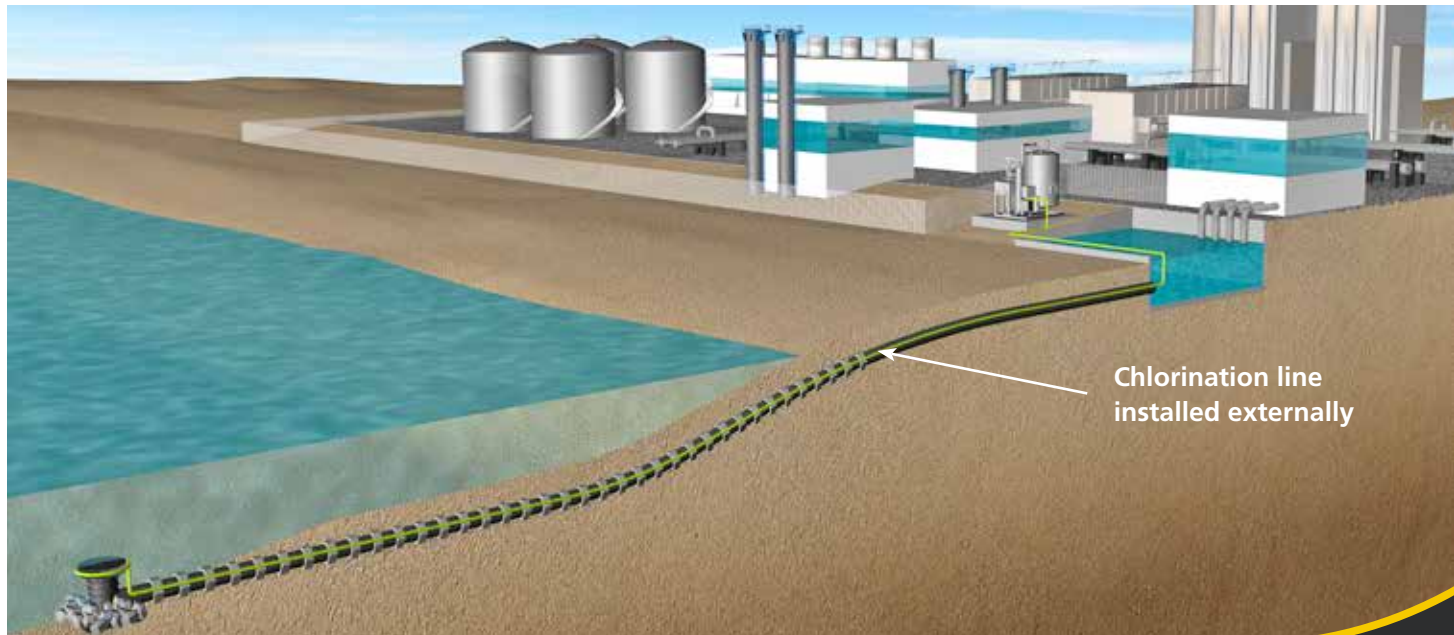
## PIPING SYSTEM FOR OFFSHORE PIPELINES

Incorrect marine fouling control through improper chlorination can result in heavy clogging and damage to the function of seawater intake.



## AGRU CHLORINATION PIPING SYSTEM FOR OFFSHORE PIPELINES

AGRU chlorination piping system ECTFE or PE 100 (-RC) are designed to prevent Biofouling in offshore pipelines by injecting sodium hypochlorite into the intake pipeline preventing biofouling to settle.



# Smart logistical solutions by AGRU!



Container transport



Flat-rack transport



Break-bulk transport



Container transport



Flat-rack transport



Break-bulk transport



Towing transport



# Logistics on demand



Pipe spool preparation



Onshore pipe string preparation



Waterfront pipe string preparation



Long string installation



# AGRU XXL pipes on the seven seas!



AGRU SUPPLIES PIPE STRINGS UP TO 600 M LENGTH TO COASTAL SITE LOCATIONS ANYWHERE IN THE WORLD

Watch the movie:





# One stop shop



Site butt welding equipment for pipes and fittings up to OD 3500 mm.



Transitions to buildings and other pipe materials.



Project-specific chlorination systems to prevent bio-fouling of intake pipelines.



Concrete protection lining to prevent concrete deterioration of intake/discharge chambers.



Flange connections in various configurations.

# Onshore applications worldwide

WASTE WATER / PROCESS COOLING /  
MINING / AGRICULTURE / MARICULTURE /  
REHABILITATION POTABLE WATER



## CONSERVING WATER - HDPE PIPING BENEFITS

- Corrosion resistance
- Flexible
- Durable
- Low seismic vulnerability
- Low leakage rate
- Low biofilm formation potential



# Offshore applications worldwide

**FISH FARMING / POWER PLANTS /  
LNG PROCESS COOLING / DESALINATION /  
PROCESSED WASTE WATER  
OTEC / SWAC / POTABLE WATER**

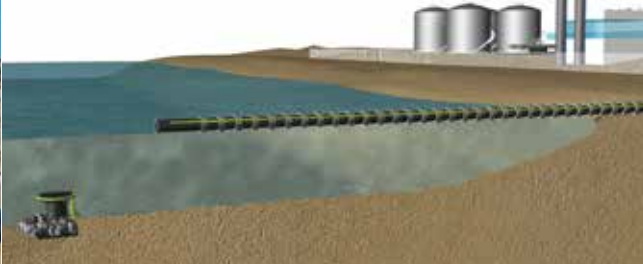


Watch the movie:

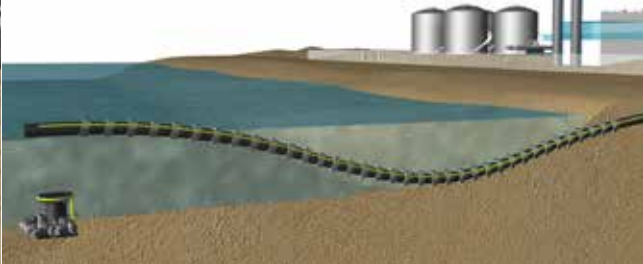


# Offshore float and sink installation

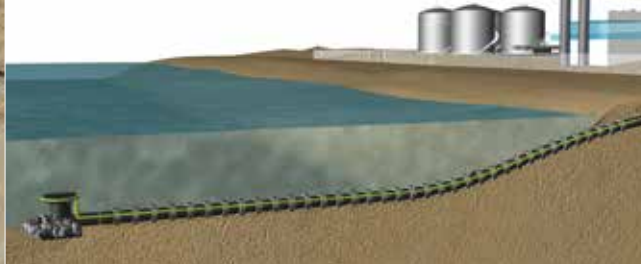
The floating PE 100 (-RC) pipe is pulled into the water and placed in its final position



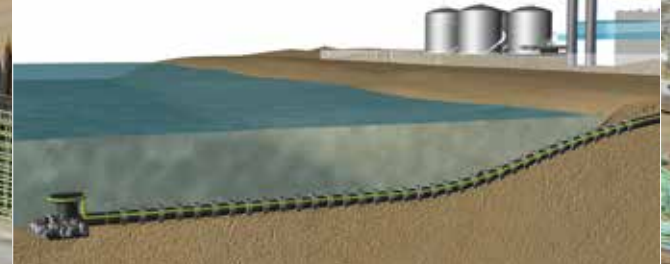
Valves are opened and water flows into the pipe - controlled sinking process takes place

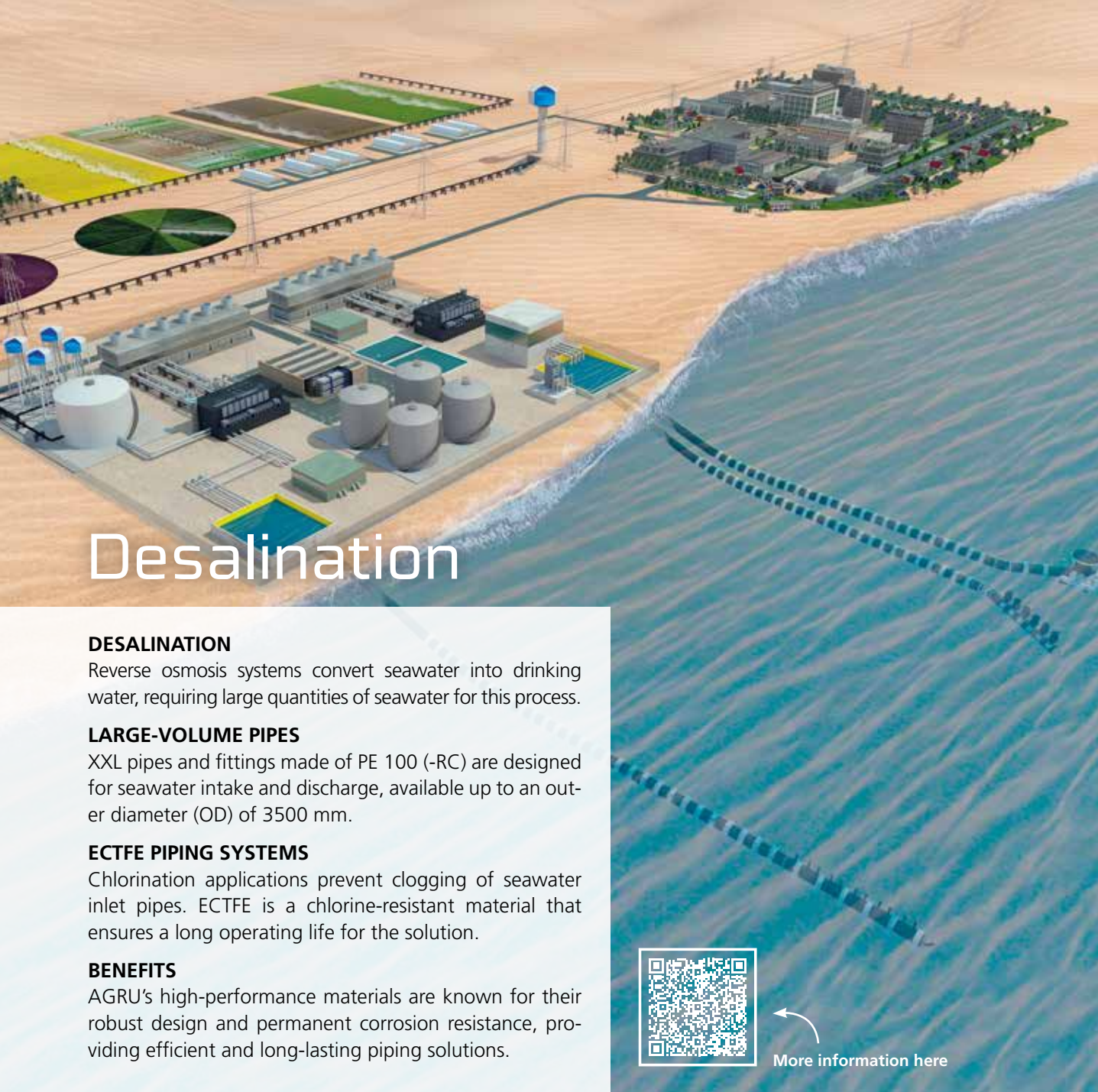


The pipe is connected to the intake structure on the ocean ground



The pipe is covered with backfill material to protect it and keep it in place





# Desalination

## DESALINATION

Reverse osmosis systems convert seawater into drinking water, requiring large quantities of seawater for this process.

## LARGE-VOLUME PIPES

XXL pipes and fittings made of PE 100 (-RC) are designed for seawater intake and discharge, available up to an outer diameter (OD) of 3500 mm.

## ECTFE PIPING SYSTEMS

Chlorination applications prevent clogging of seawater inlet pipes. ECTFE is a chlorine-resistant material that ensures a long operating life for the solution.

## BENEFITS

AGRU's high-performance materials are known for their robust design and permanent corrosion resistance, providing efficient and long-lasting piping solutions.



More information here

# Hydrogen

## GREEN HYDROGEN PRODUCTION

AGRU XXL pipes are ideal for supplying large volumes of water necessary for electrolysis in green hydrogen production.

For transporting gaseous hydrogen, AGRULINE pipes are the best choice. All components are certified as H2-ready for hydrogen or hydrogen-natural gas mixtures.

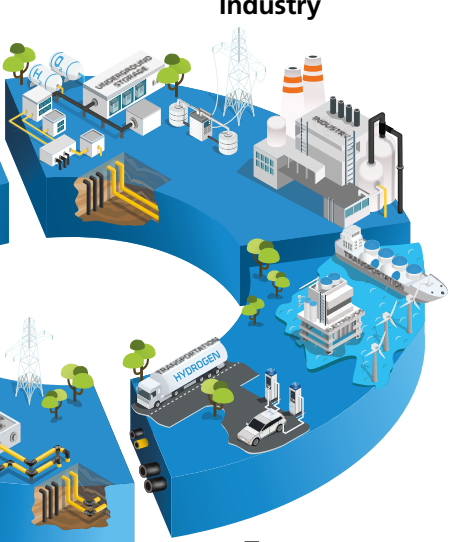
AGRU products offer a reliable solution for both the production and transportation of hydrogen, emphasizing their utility in green hydrogen systems.



## Electrolysis



## Industry



## Enduse



## Transport



# Floating structures for offshore harvesting



## AQUACULTURE

The fastest-growing food sector covers half of global seafood consumption.

## SUSTAINABLE FISH FARMING

The "Marine Donut" project is entirely made of AGRU PE 100 (-RC) sheets and pipes to create a closed, environmentally-friendly floating fish farm.

## BENEFITS OF PE 100 (-RC)

Crack-resistant, flexible, UV+corrosion resistant PE 100 (-RC) is the ideal solution for aquaculture.



More information here



# AGRU - a global brand



Contact us!



0724