

PIPE SYSTEMS

OUR JOB IS OUR PASSION



Chemical process
Water treatment
Sewage treatment
Petroleum
Environment
Mining
Industrial & Process
Food processing
Pharmaceutical



PIPE SYSTEMS



Chemical process - Water treatment
Sewage treatment - Petroleum
Environment - Mining
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Pharmaceutical

Seawater pumping station
Customer : TUNISIE SUCRE
Country : Tunisia



ADVANTAGES

Corrosion resistance ;
Lightweight ;
Low maintenance costs ;
Long service life ;
Complex shapes ;
High mechanical strength ;
UV resistant ;
Good thermal insulation properties ;

Other advantages for specific applications :
Suitable for storing all kinds of foods ;
Resistance to abrasion ;
Fire resistance ;
Conductivity.

RAW MATERIAL

CORROSION BARRIER

It is the inner barrier of the product and it should be selected according to the internal chemical environment.

The internal temperature is also a criteria of selection.

A variety of material can be used for this barrier such as :

- GRP with different kind of resin : vinylester and polyester & in different thicknesses according to the medium
- PP
- PVDF
- PVC & CPVC
- ECTFE, FEP, PFA

STRUCTURAL LAMINALE

It is the mechanical resistant layer and it is made from GRP material.

GCER uses two types of resins : Vinylester & polyester

TEMPERATURE RANGE

Up to 200°C



FOUKA seawater desalination plant
Customer : ACCIONA
Country : Algeria



Tenes seawater desalination plant
Customer : Abeinsa EPC
Country : Algeria



ND2200 ducts for ventilation
Customer : CITP
Country : France

PRODUCT RANGE

GRP PIPES

MANUFACTURING PROCESS

GCER pipes are made by filament winding process.

STANDARD RANGE

- Diameter range :
15 - 1800 mm for pipes
Up to 5000 mm for ducts
- Design pressure : up to 25 bar
(other pressures are available on request)
- Vacuum : on request
- Temperature : up to 180°C for gases
- Stiffness for buried pipes : up to 20 000 N/mm²

JOINTS TYPE

- Spigot-Bell Joint : can be used for buried or non pressurized piping systems



- Laminated joint : it is the most common type of joining and it is a permanent assembly
- Flanges joint can be especially used to connect the piping system to other process facilities.



Piping spigot bell ; Ø 1200
Customer : ONAS
Country : Tunisia



Sea Water Desalination filtration area
Customer : TECHNICAS REUNIDAS
Country : Spain



TENES seawater desalination plant
Customer : ABEINSA EPC
Country : Algeria

GRP FITTINGS

To offer a complete solution for our customers, GCER produces a large variety of fittings & accessories such as :

- Elbows
- Flanges: fixed, loose with collar
- Blind flanges
- Reducers
- Tees

MANUFACTURING PROCESS

Fittings are made by hand lay-up process.



PREFABRICATION

To reduce the site working duration, GCER can make assembly of spools according to isometric drawings
GCER is equipped with prefabrication workshop
For many cases, we can provide 100% of spools ready to install
The assembly job made by qualified laminators / welders certified by APAVE France according to the following codes :

- ISO EN 13121 for laminators
- ISO EN 13067 for plastic welders



SPECIAL PARTS

Within a specific request, GCER can make special parts such as :

- Flanged accessories
- FRP supports
- Spray nozzles
- Special duct



MARKETS

UNDERGROUND PIPES

Underground pipes are produced with spigot - bell ends. The socket end is an integrated filament wound part of the pipe. The spigot end is a machined part on which 2 O-ring seal is positioned. The flexible joint allows axial movement of the spigot in the socket and some permissible angular deflection.



GRP pipelines for wastewater treatment plant
Customer : Sarl Limane
Country : Algeria



Sea water desalination plant Djerba
Customer : SONEDE
Country : Tunisia



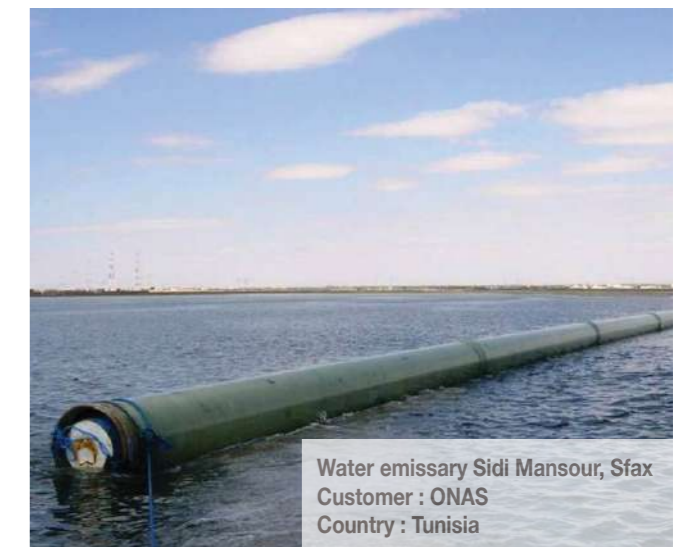
FRP underground pipelines for sea water desalination plant of Sousse
Customer : SONEDE
Country : Tunisia

MARINE PIPE

GRP pipe system is a good solution for marine environment. Pipes and fittings are provided with a 1.5 mm internal liner and an external finish.



Water emissary Sidi Mansour, Sfax
Customer : ONAS
Country : Tunisia



Water emissary Sidi Mansour, Sfax
Customer : ONAS
Country : Tunisia

CHEMICAL PROCESS

GCER products have numerous applications in chemical process market. GRP or dual laminates solutions can be used in many sectors of chemical market such us :

- Electrolysis
- Chemical product transportation
- Polymers & plastic industries
- Acid, sodium and derivatives industries
- Metal & surface treatment
- Animal nutrition
- Mineral processing.



Phosphoric acid unit
Customer : GCT
Country : Tunisia



Phosphoric acid unit
Customer : GCT
Country : Tunisia



Phosphoric acid unit
Customer : GCT
Country : Tunisia



GRP pipelines for crystallization unit
Customer : France Evaporation
Country : Tunisia



GRP pipelines for electrolysis
Customer : Groupe ADF
Country : France



GRP pipelines for electrolysis
Customer : Groupe ADF
Country : France



GRP pipelines for mining plant
Customer : ALBEMARLE - OUTOTEC
Country : Capri Capricornio Chilecornio Chile

WASTE WATER

GRP provides excellent resistance to the effects of waste water containing acids, alkalis and other corrosive compounds.



Waste water treatment plant
Customer : TUNIBER
Country : Tunisia



GRP pipelines for mining plant
Customer : ALBEMARLE - OUTOTEC
Country : Capri Capricornio Chilecornio Chile



GRP pipelines for mining plant
Customer : ALBEMARLE - OUTOTEC
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ENVIRONMENT

GCER provides piping, ducts & stacks in various dimensions for air and industrial ventilation depollution.



GRP duct for air treatment process
Customer : FABCOM
Country : Algeria



GRP duct for air treatment process
Customer : FABCOM
Country : Algeria

NSF PIPING

NSF piping system is used for water supply (potable & raw water). Typical industrial water supply includes :

- Desalination Plants
- Seawater Intakes
- water transmission



Humid air network for desalination plant in Singapore
Customer : Piedmont Pacific
Country : Singapore



Humid air network for desalination plant in Singapore
Customer : Piedmont Pacific
Country : Singapore



NSF piping for desalination plant in Cyprus
Customer : Osmo sistemi
Country : Cyprus



Djerba seawater desalination plant
Customer : AQUALIA - INIMA
Country : Tunisia



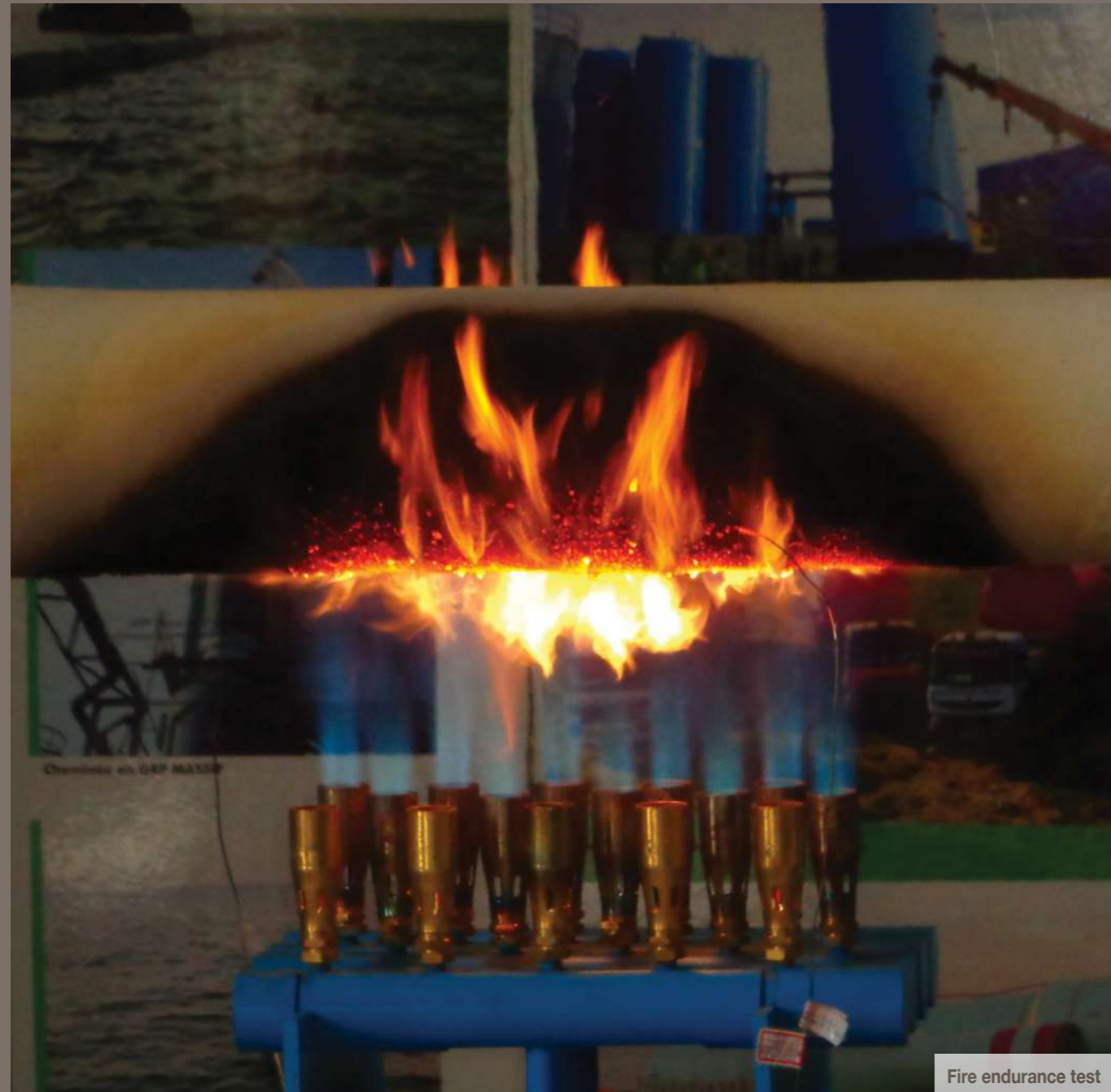
Djerba seawater desalination plant
Customer : AQUALIA - INIMA
Country : Tunisia

FIRE FIGHTING

GCER develops its own solution for fire fighting system, they are commonly used for petroleum & energy plants. This solution provides the necessary fire endurance for GRP systems to support local fire according to :

- IMO Resolution A 753
- ISO 14692-2 Annexe E

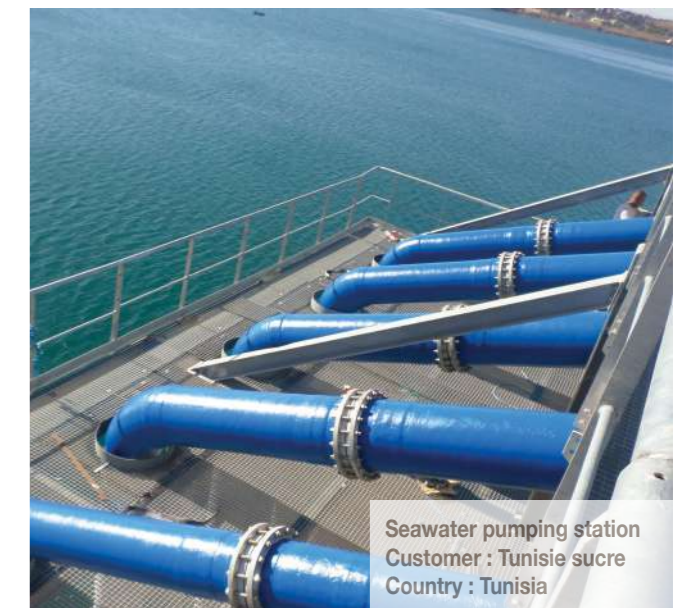
A special resin with additives materials can be added to enhance fire resistance of the piping.



COOLING WATER

Cooling water piping of power plants is usually manufactured in GRP material. This material ensures several benefits such as :

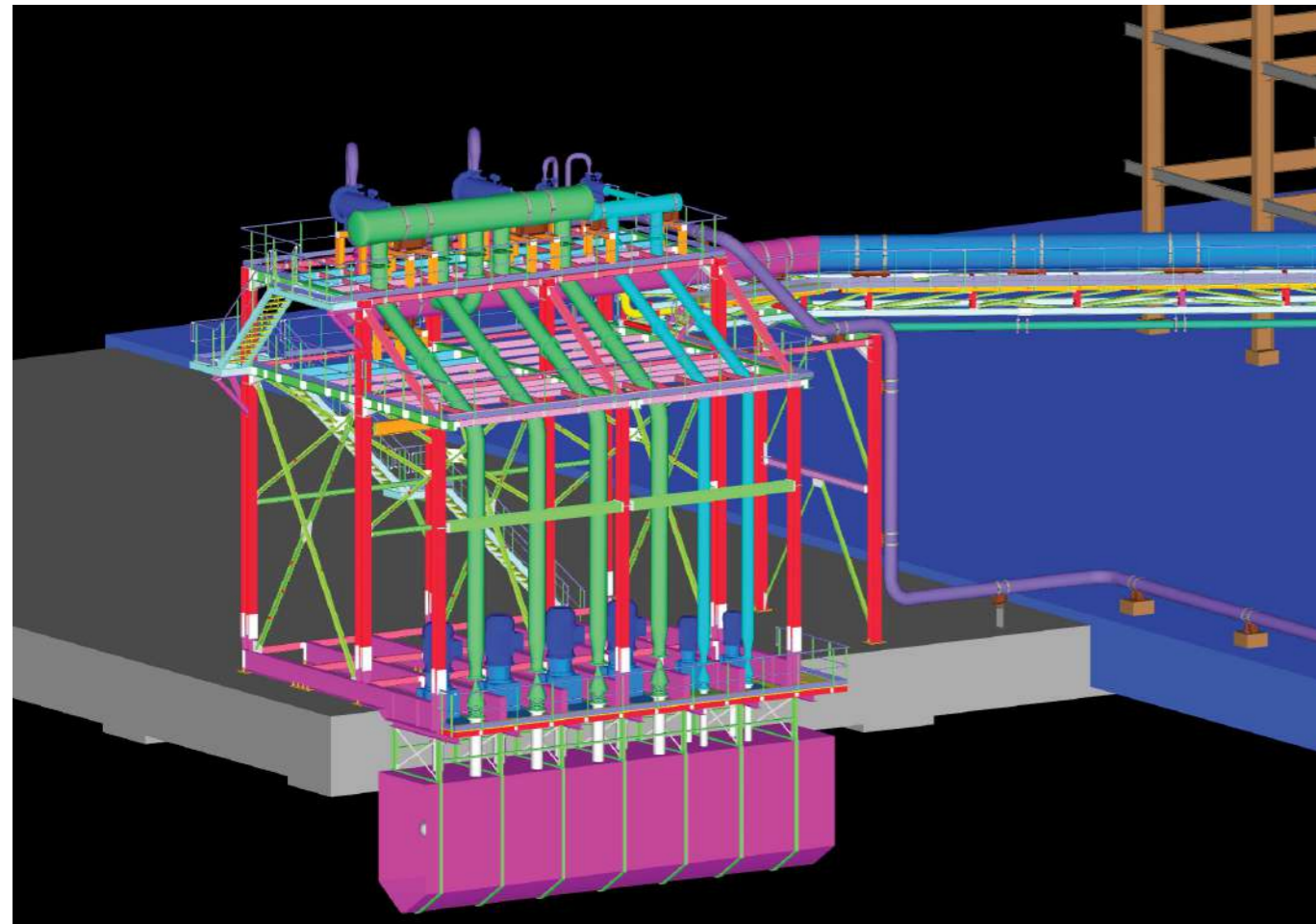
- Friction Resistance,
- Corrosion Resistance,
- Thermal Insulation



ENGINEERING

GCER supports its customers in study phase. Our engineers can provide :

- Raw material selection
- 2D drawings
- 3D layouts
- Calculation notes according to international codes (DIN, AWWA, ISO, or ASME)
- Flexibility stress analysis



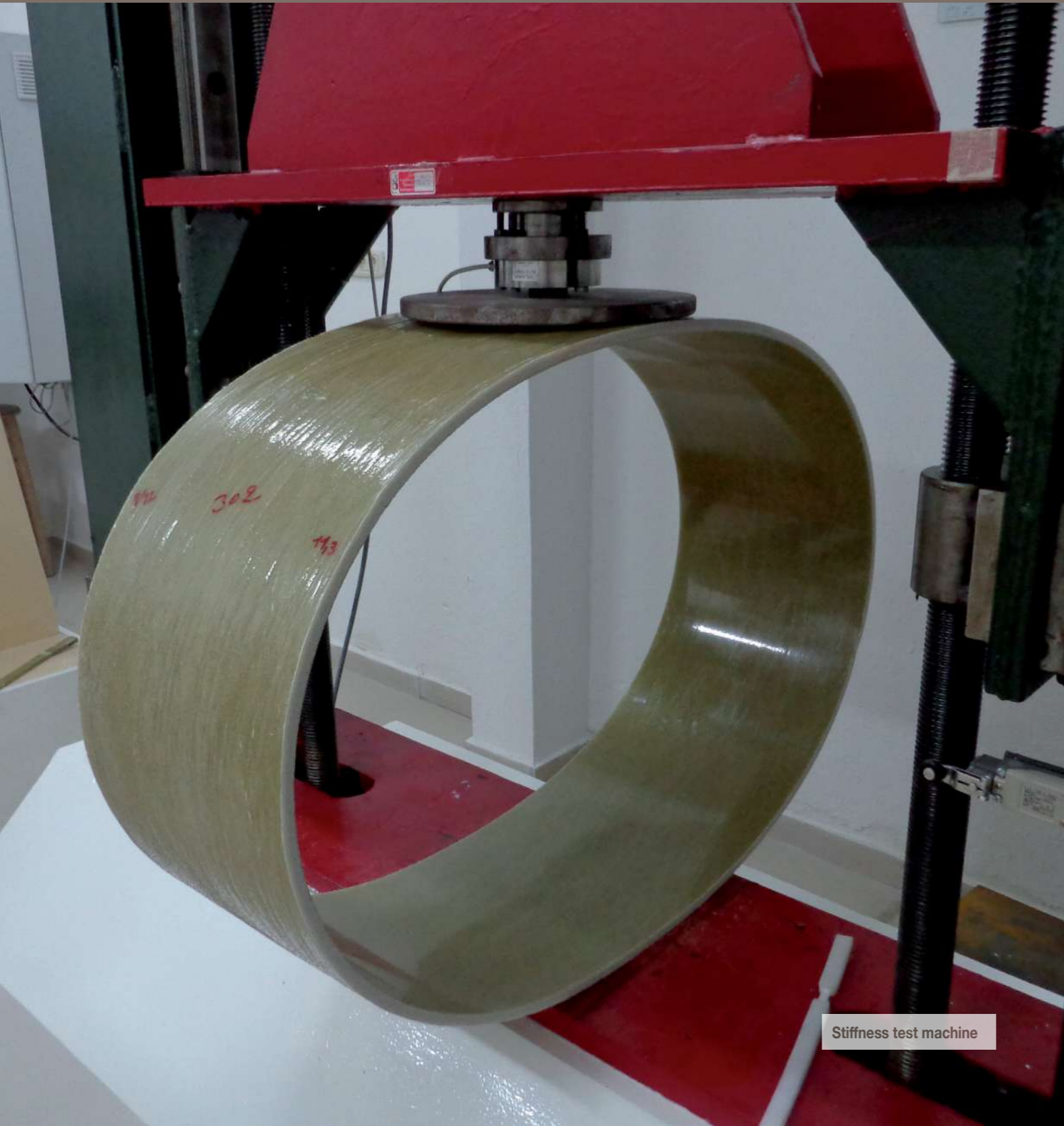
INSTALLATION

In order to provide a complete service package, GCER has a qualified team that can work on site to install GRP piping and all related work.



OROPESA seawater desalination plant
Customer : TECNICAS REUNIDAS
Country : Spain

LABORATORY



Stiffness test machine



Mechanical test machine



Viscometer and test reactivity

GCER follows a quality control system to ensure the conformity of its products in accordance with DIN, ISO, ASME, AWWA & UIC standard in its own laboratory, GCER is independent and can carry out a variety of tests for raw material, and final product in accordance with international codes.

Example of tests :

RAW MATERIAL CONTROL

- Resin viscosity
- Resin reactivity

MECHANICAL PROPERTIES DETERMINATION

- Tensile strength & modulus test
- Bend test
- Interlaminar shear strength
- Rigidity test

CONTROL OF THE MANUFACTURING PROCESS

- Thickness measurement
- Dimensional measurement
- Acetone test
- Barcol hardness test
- Spark test for dual laminate material

INSPECTION & TESTING AFTER COMPLETION OF FABRICATION

- Coupon testing
- Hydro test
- Vacuum test
- Pneumatic test

TECHNICAL DOCUMENTATION

By the end of each project, GCER provides a technical file which includes :

- Raw material control and tracability
- Manufacturing documentation such as : laminating procedures, operator qualifications, ...
- Test certificates
- Declaration of conformity



Sea water desalination plant Djerba
Customer : SONEDE
Country : Tunisia

OUR RECENT PROJECTS

SEA WATER DESALINATION PLANT OF DJERBA- TUNISIA

Under the direction of INIMA & AQUALIA, GCER studied, supplied and installed.

- Intake & reject pipes ND1500
- Aboveground process piping system
- Metallic supports for piping system
- GRP Process equipment.

THE RENOVATION AND UPGRADE PROJECT OF FLUORIDE RELEASES OF OCP - SAFI - MOROCCO

Under the direction of CMI Morocco, GCER studied, supplied and delivered more than 350 tonnes of ducts & piping for ventilation and waste treatment.

Technical specification :

- Pressure :
piping : 10 bars
ducts : - 600 mm WC
- Temperature : up to 100°C
- Diameter range : ND25 to ND3200
- Medium : Humid Air + Acids including HF (HF <0.5 g / Nm³) + H₂SiF₆ (traces) + Dust 1 to 5%



Supply of GRP Pipes, Fiting and Ducts as part of completing the renovation and upgrade project of Morica releases of OCP - SAFI - Morocco
Customer : CMI Maroc
Country : Morocco



GCER, offers an extensive range of pipes and fittings precisely manufactured to the highest quality.

GCER, pipe systems combine the long established benefits of composite materials including, light weight, ease of installation and excellent service lifetime. The pipe sections according to isometrics. Special fittings can be designed and manufactured to meet the requirements of the projects.

FIRE ENDURANCE

GCER pipe systems can be applied as per IMO resolution A.753 (18) Fire Endurance test level 3 and 1000 hours survival test requirements for qualification in the sense of ISO 14692-2.

The following Standards are applicable:

- FTP Code for Fire Test Procedure.
- Fire Endurance L3 according to IMO Resolution A.753 (18).



ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007

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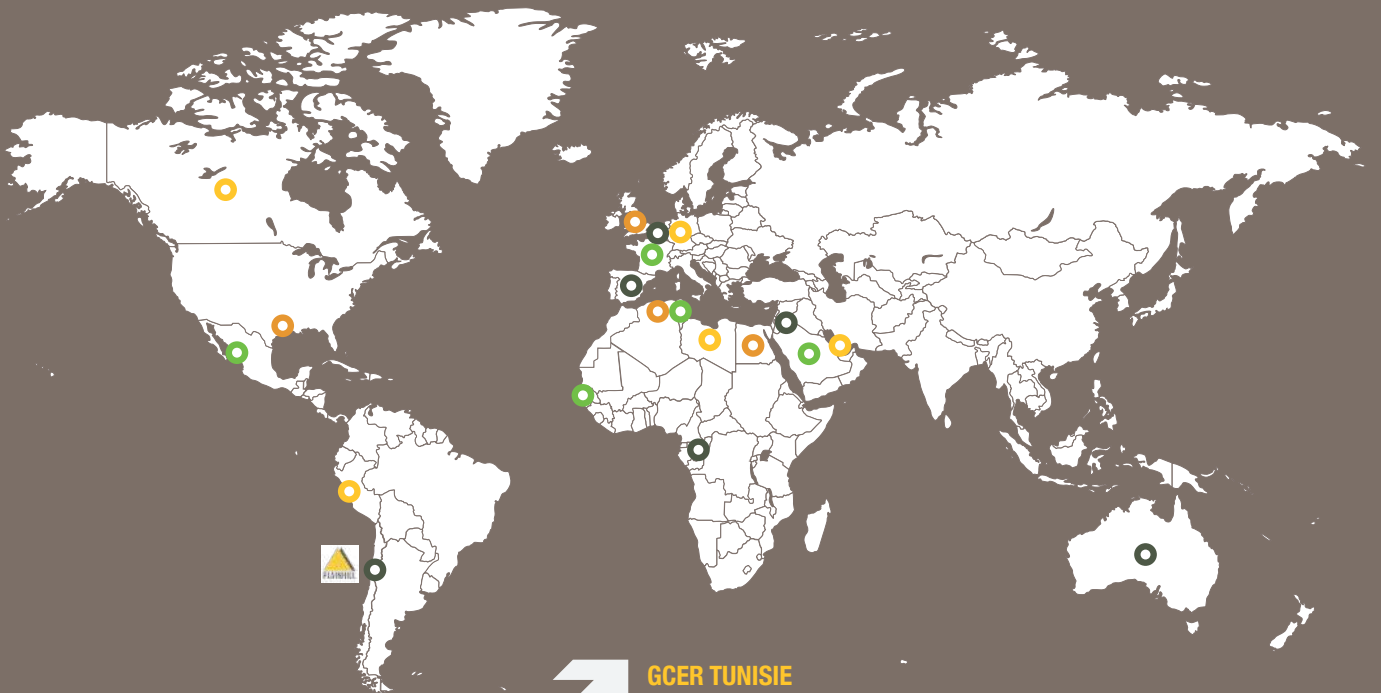
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