

GCER'S FACILITIES LIST

WORKSHOPS

- 1. GRP pipes workshop**
- 2. GRP fittings workshops**
- 3. GRP Tank building workshop**
- 4. Prefabricaton workshop**
- 5. GRP Gratings workshop**
- 6. Thermoplastic workshop**
- 7. GRP Filters workshop**
- 8. Steel works workshop**
- 9. Sand blasting and painting workshop**
- 10. Wooden workshop**
- 11. GRP simultaneous projection**
- 12. Wooden workshop**
- 13. Warhouses**

SERVICES

- **Planning and desing**
- **Laboratory**
- **Storage, packing and delivery**
- **Installation and assistance on the worksite**

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GENERAL INFORMATION ABOUT GCER'S PLANT

Activity	■ Piping and equipment in GRP
Address	■ Road of Thrayet, 4041 Sousse, Tunisia
Total area covered workshops	■ 45 000 m ²
Total area office	■ 1700 m ²
Total area	■ 12 000 m ²
Workshops' number	■ 14
Workshops' Employees' number	■ 300



1. GRP Pipes workshop

PRODUCTS:

- **UNDERGROUND PIPE (SPIGOT BELL)**
- **ABOVE GROUND PIPE**
- **DUCT**



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1. GRP Pipes workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 4500 m2	Cranes 2 x 10 tones Cranes 1 x 3 tones	Range of diamters DN65 => DN1800 Capacity : 200 ml / day	3 filament winding machines (DN15 to DN1800) 2 dismolding machines 1 beveling machine 1 cutting machines 1 spigot-bell machines 1 hydro test machine	16



6 filament winding machines DN300 to DN1800



Storage of buried pipes



1 filament winding machines DN80 to DN250



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1. GRP Pipes workshop



Beveling machine



Mandrills



Spigot-bell machine



2.GRP fittings workshops

PRODUCTS:

- **FLANGES**
- **ELBOWS**
- **REDUCERS**
- **COLLAR**
- **TEE**



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2. GRP Fittings workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 1600 m2 (2 workshops)	2 Cranes 1 x 5 tones	Standard diameters DN15 to 1000 mm Special diameter DN1100 to DN2800mm End type : spigot-bell / flanged / butt weld	1 CNC fiberglass cutting machine 1 CNC coil fiberglass cutting machine 1 CNC Water jet machine 1 Water jet machine 2m x 4m 6 hydraulic press Electric furnace 6mx2mx2 More than 2000 molds	54



Flanges press machine



CNC Water jet machine



Fittings workshop



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4. GRP Fittings workshop



CNC COIL FIBERGLASS CUTTING MACHINE



CNC FIBERGLASS CUTTING MACHINE

3. GRP Tank building workshop

PRODUCTS:

- **STORAGE TANKS**
- **ROAD TANKS**
- **SILO**
- **SCRUBBER, QUENCH, REACTOR**
- **COVERS**
- **SPECIAL PIECES**



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3. GRP Tank building workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 5000 m2	Cranes 2 x 20 tones Cranes 2 x 10 tones	Range of diameters DN2000 => DN8000	2 filament winding machines (DN2000 to DN7000) 1 CNC saw machine 1 beveling machine Several mandrels : DN2000,DN2200 DN2400, DN2500, DN3000,DN3200, DN3500,DN4000,DN4500,DN5000, DN6000,DN6500	25



Ducts work



Ducts work



2 filament winding machines

4. Prefabrication workshop (piping)

PRODUCTS:

- **SPOOLS**
- **MANIFOLDS**



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4. Prefabrication workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 1680 m2	Cranes 2x3 tones Cranes 1 x 10 tones Cranes 1 x 5 tones	Range of diameters DN15=> DN1800	Capacity about 1000 inch / week	41



PREFABRICATION WORKS



CNC SAW MACHINE UP TO 3500mm



PREFABRICATION WORKS

5. CNC WORKSHOP

PRODUCTS:

- ***MACHINING GRP & THERMOPLASTIC***



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4. CNC WORKSHOP

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 1000 m2	Cranes 2 x 5 tones	GRP	1 CNC 3 axes machine 4x8x3 m	6
		Thermoplastic (PE,PP, PVC,...)	1 CNC 3 axes machine 3x6x0.8 m	
			1 CNC 3 axes machine 3x6x0.3 m	
			1 CNC 5 axes machine 5x15x5 m	



LARGE CNC MACHINE 4m x 8m x 3m



CNC MACHINE FOR GRP 4m x 2m



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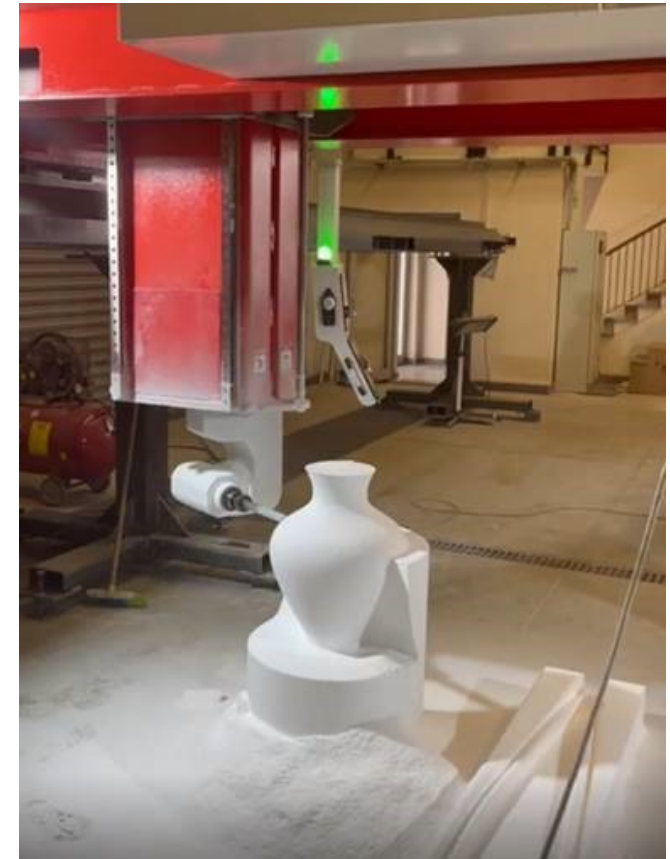
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4. CNC WORKSHOP



LARGE 5 AXES CNC MACHINE 5m x 15m x 5m



Mold machining

5. GRP Gratings workshop

PRODUCTS:

- **GRATINGS**
- **SAFETY FLOORINGS**
- **GRP SHEET**



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5. GRP Gratings workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 252 m2	Cranes 1x3 tones Cranes 1 x 3 tones	Grating & covered grating		
		Standard mech 38 x 38 x 38	7 molds	
		Standard mech 38 x 38 x 30	1 cutting machine	
		Standard mech 50 x 50 x 40	1 polishing machine	6
		Standard mech 25 x 25 x 40		
		Panel dimension 1.22x3.66		



Molds of GRP Gratings



GRP grating



Polishing machine

6. Thermoplastic workshop

PRODUCTS:

- **Dual laminate pipes and fittings**
- **Dual laminate Equipment**
- **Thermoplastic pipe, fittings and equipment**

6. Thermoplastic workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 1080 m2	Cranes 2 x 5 tones	Pipes and tanks Material (PPH,PVC & PVC-C, PEHD, PVDF,ECTFE and PFA)	2 CNC machines (2m x 4m) 1 panel saw 1 Bending machine 1 Polyfision sheet (length 4 ml) 1 Robot of welding : maximum diameter 4 m 8 piping polyfision machines 2 piping infrared welding machines	14



Robot of welding



Polyfision sheet machine



CNC machine

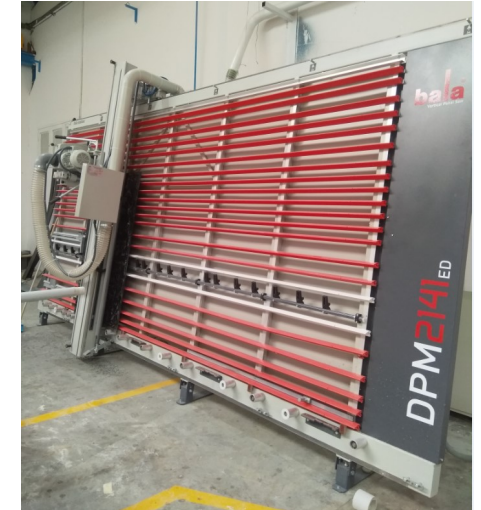
6. Thermoplastic workshop



Plate welding machine



PIPE CUTTING MACHINE



PANEL CUTTING MACHINE



PIPE WELDING MACHINE



2 INFRARED WELDING MACHINES

7. GRP Filters workshop

PRODUCTS:

- **CATRIDGES FILTERS**
- **BASKET STRAINERS FILTERS**
- **BAG FILTERS**
- **ACTIVE CARBON FILTERS**
- **SAND FILTERS**
- **STATIC MIXERS**
- **MEMBRANE HOUSING**

7. GRP Filters workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 1400 m2	Cranes	DN150 TO DN2000	2 leathers	25
	1x3.2 tones		6 positioners	
	Cranes		1 painting unit	
	1 x 5 tones		1 hydro test unit	
	Protique 5 tones			



FILTERS POLISHING



HYDRO TEST UNIT



FILTERS WORK

8. GRP simultaneous projection

8. GRP simultaneous projection

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 326 m2	Cranes 1x3.2tonnes	Panels Covers Caps <i>Complex shapes</i>	3 simultaneous projection machines 4 rotate positioners	4



9. Steel works workshop

PRODUCTS:

- **PIPE SUPPORT**
- **STEEL STRUCTURE**
- **SECONDARY STRUCTURAL STEEL**
- **STANDARD AND SPECIAL PIPING CLAMPS**
- **MOLDS**



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9. Steel works workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 2200 m2	Cranes 3x5 tones	Plate thicknesses : 1 mm to 60 mm	2 Plasma CNC machines CNC profile milling machine 6 lethers 3 milling machines 1 Rolling machine 1 Bending machine 2 Band saw machines 6 welding station grinding and painting	23



PLASMA CNC MACHINE



LATHES



SAW CUTTING



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9. Steel works workshop



SAW CUTTING



PLASMA CNC MACHINE



DRILLING MACHINE



CNC PROFILE MILLING MACHINE

10. Shot-blasting and painting workshop



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10. Sand blasting and painting workshop

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 504 m2		GRP AND STEEL BLASTING	Shot Blasting Machines Polyurethane painting	06



GRINDING



PAINTING

11. Warhouses



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12. Warehouses

BUILDING	LIFTING CAPACITY	PRODUCT RANGE	EQUIPMENT LIST	LABOUR
Area of 7000 m2	Cranes 1x10	Raw material and finished product	4 storage location Resin Fiberglass Thermoplastic finished product Rest storage capacity 500 tons	06



Storage area



hangars



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12. Warehouses



PLASTIC AREA



RESIN AREA



FIBERGLASS AREA



PLASTIC AREA



RESIN'S ADDITIF AREA



FIBERGLASS AREA

Laboratory

13. Laboratory

BUILDING	PRODUCT RANGE	SCOPE	EQUIPMENT LIST	LABOUR
Area of 500 m2	Raw materials quality control, production phase quality control quality control on finished products	Visual inspection	Viscometer	01 lab technician
		Dimensional control with tolerances	Gel Timer	
		Barcol hardness measurement	Oven	
		Acetone test	Stiffness measuring machine	
		Pressure test / Pneumatic test	2 mechanical test machines	
		Mechanical test	Digital manometer	
		Welds tracking		



Resin Viscosity & Gel time



Mechanical testing



Oven

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13. Laboratory



stiffness mechanical testing



Mechanical testing

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13. Laboratory



Pressure test of catridge filters



Pressure test for buried pipes



Pressure test of scrubber

Wooden workshop

PRODUCTS:

- **BOX AND PALLETES**
- **TANK SADDLE**
- **MOLDS**

11. Wooden workshop

BUILDING	PRODUCT RANGE	EQUIPMENT LIST	LABOUR	MARKING
Area of 150 m2	packing for final product wooden saddles, mold for special GRP pieces	Saw machine Wooden planing machine	4	- packaging marking ISPM 15



Wooden machines



Wooden box according to ISPM 15



Wooden saddles

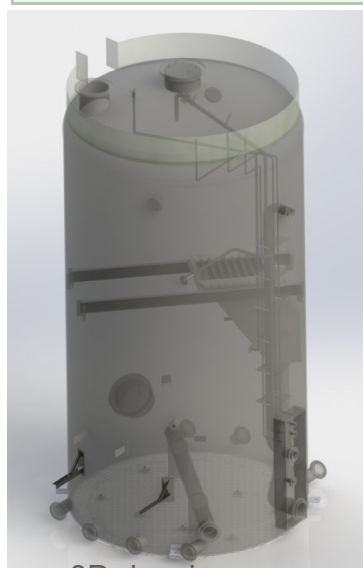
PLANNING AND DESING

Service:

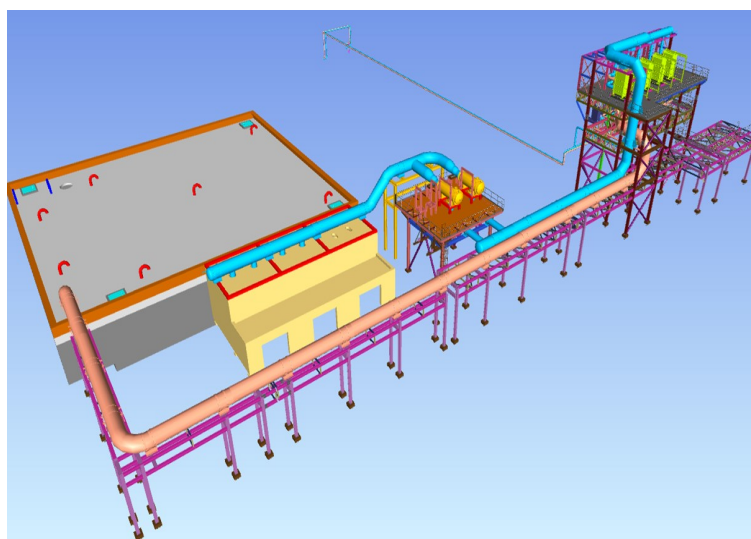
- ***Analystic claculation***
- ***FEA***
- ***Pliping stress analysis***

1. Planning and design

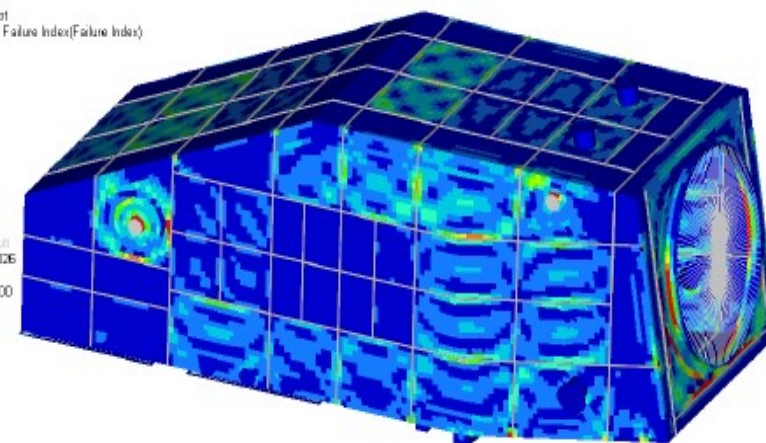
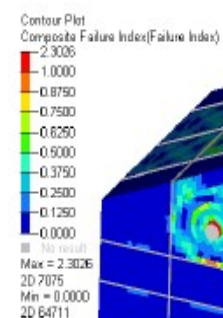
BUILDING	SERVICE	SOFTWARE	LABOUR	CODE	CERTIFICA-
Office 1300 m2		MAGICS			
	Detailed drawings & spool drawings	AUTOCAD		EN	
		SOLID WORKS	10 engineers	ASME / ASTM	DEP
	3D drawings	CAESAR II	14 techniciens	BS / DIN	CE
	Stress calculations	CAD WORKS	1 planner	AWWA	ATEX
	Project planning	TEKLA		DVS	
		MS PROJECT / PRIMAVERA P6			



3D drawings

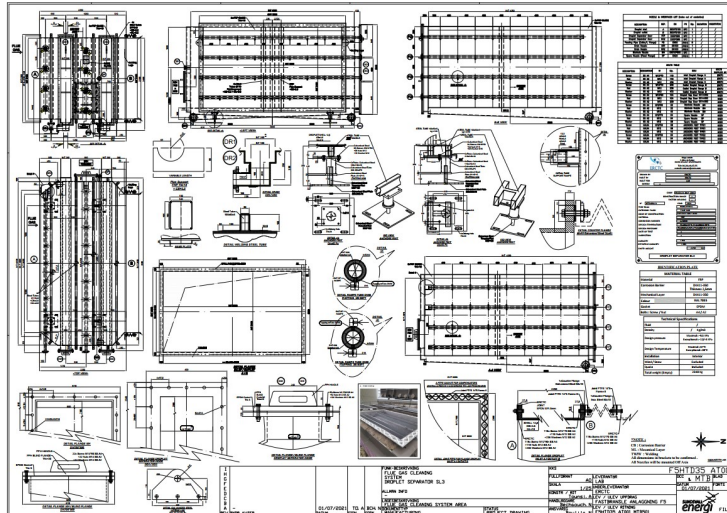


3D layout

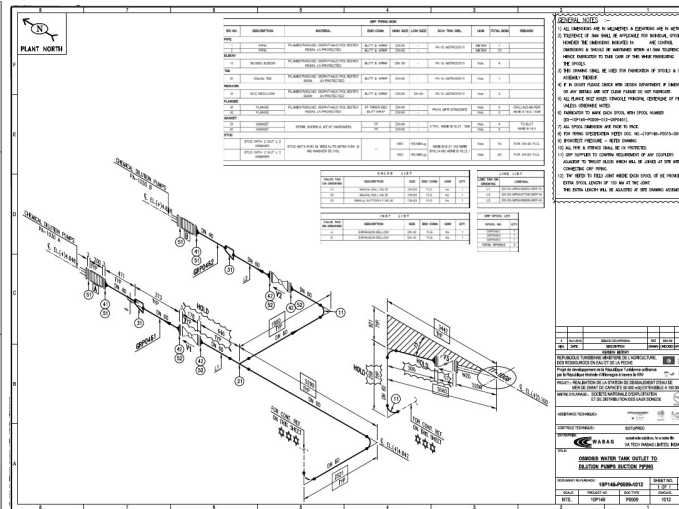


Finite elements calculation

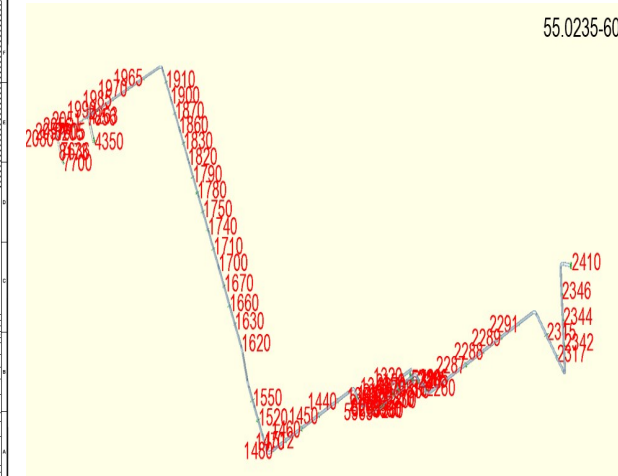
1. Planning and design



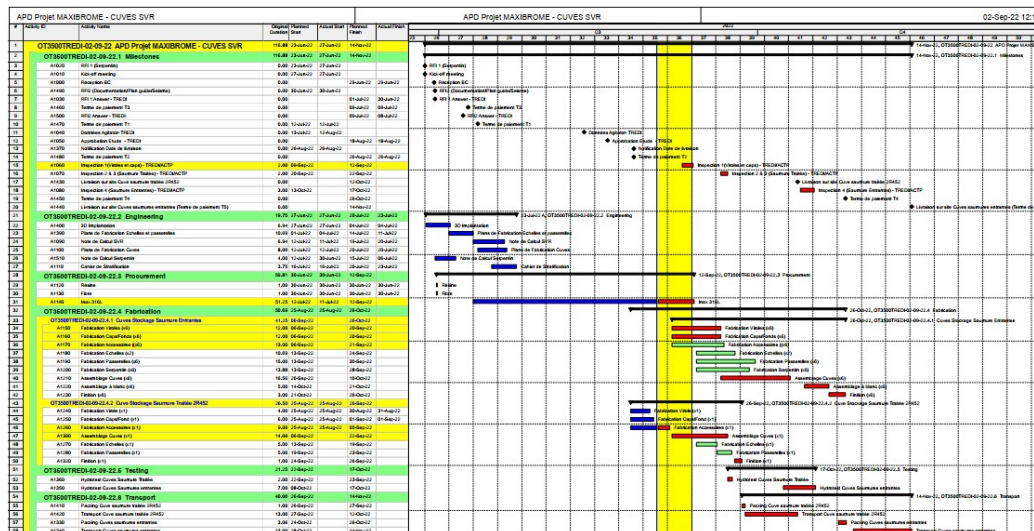
Detailed drawing



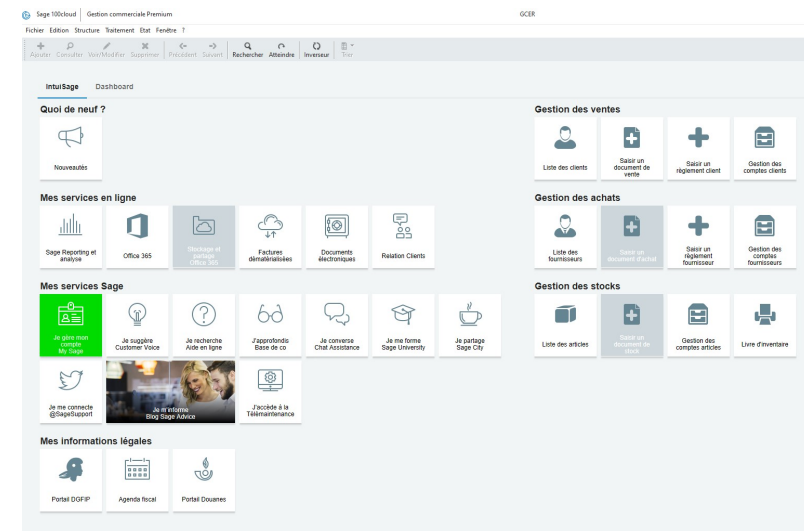
spool drawings



Piping Stress calculations



Project planning



SAGE management software

LIFTING & HANDLING DEVICES

13. Lifting & handling devices

DEVICES	LABOUR
3 telescopic	6 persones
1 forklift	
23 cranes from 2T to 20 T	
3 bucket lifts	



Telescopic handler



Bucket lift



Crane 5 tones



Filter lifting

PACKING AND STORAGE

13. STORAGE & PACKING

BUILDING	LIFTING CAPACITY	LABOUR
Area of 4000 m2	Cranes 4 x 10 Ton	4



Storage of finished products (tanks)



Storage of finished products (spools)

DELIVERY



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13. DELIVERY

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Flat rack

container

Extendible truck

Special truck

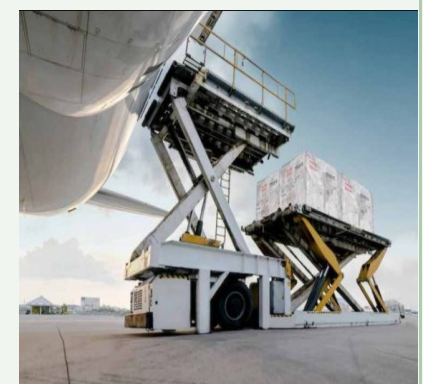
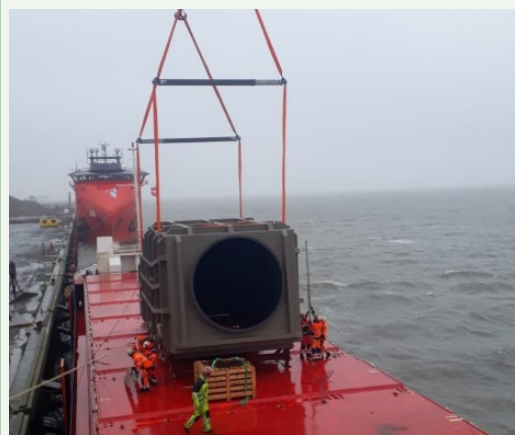


Marine cargo

Truck

MAFI

Air cargo



IN THE WORLD



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