
oiltechpipe
HIGH PRESSURE THERMOPLASTIC PIPES
quality integrity innovations

Our Company

Pipeline Systems OILTECH, LLC is a part of SIEBC group of companies working in the energy industry for more than 20 years which produce, engineer and develop systems with the most advanced plastic technologies for the conduction and storage free of corrosion of all kind of fluids at high pressures and temperatures.

The group is working worldwide providing services, installations, products and performing turn key projects.

Factory in 2017

New factory 2021

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Content

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Our product

We manufacture flexible composite pipes up to 8 inches for working pressures up to 3000 psi under our registered brand OILTEHPIPE. Our product is the result of work of the company engineering staff and has a number of characteristics that provide an indisputable advantage over the analogues available on the market. Pipes have increased reliability and strength due to special reinforcing profiles, which ensure their more dense laying with uniform loading, and polymer antifriction layer under the outer sheath. The design of reinforcing profiles and technology of their laying is the company's own development.

OILTECHPIPE can be installed onshore and offshore. OILTECHPIPE are designed and produced according to API 15S, API17J and ISO 13628-2

2” 3” 4” 6” 8”

* The most common (in-demand) standard sizes of pipelines

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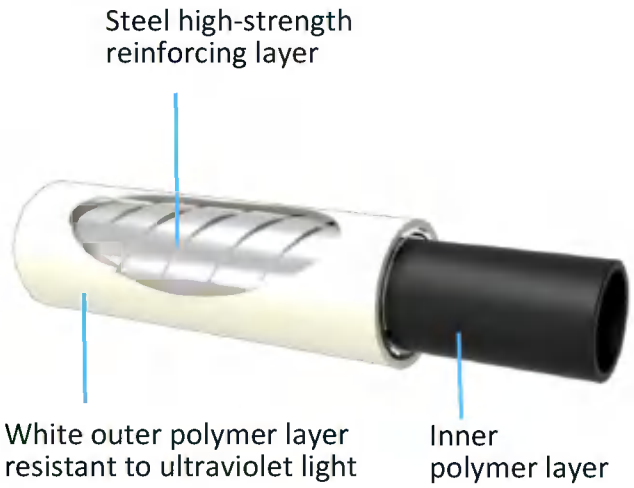
Our product

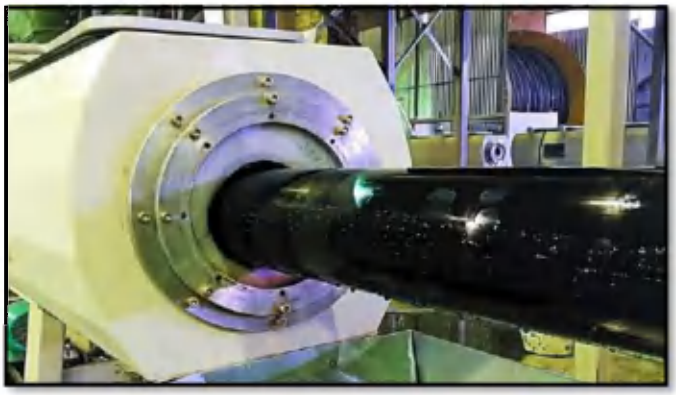
The pipe consists of inner and outer polymer layers and intermediate reinforcing layer based on profiled metal tapes.

Nominal diameters (in): 2-8
Operating pressure (psi): 600-3000
Operating temperature (°F): -40...240
Transported fluids: oil, gas, and water.

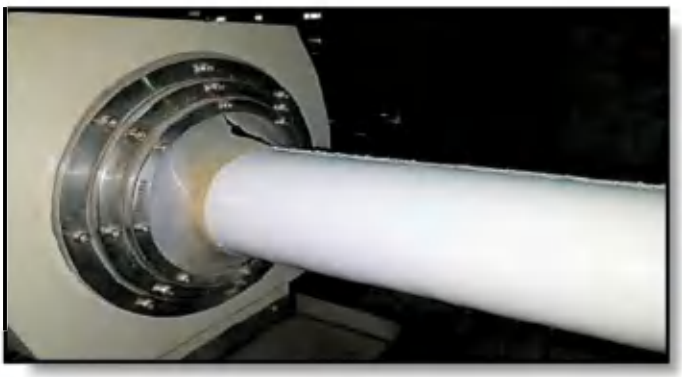


OILTECHPIPE is produced both for onshore and offshore applications and differs by material of its outer sheath.

Design life is 20 years on surface installations and 50 years if it is buried.
OILTECHPIPE is produced in accordance with GOST-ISO 13628-2, API 17J and API 15S



To preserve all the properties of the pipeline during its storage or in use under direct sun exposure, the outer sheath of OILTECHPIPE is produced in white color with UV protection.



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Technical parameters

All main characteristics of the OILTECHPIPE: dimensions, thermal properties, pressure, weight and length can be found in the table below.

OILTECHPIPE	600 psi					1500 psi					3000 psi			
	2'	3'	4'	6'	8'	2'	3'	4'	6'	8'	2'	3'	4'	6'
Dimensions														
Pipe Inside Diameter, (in)	2.09	3.07	3.82	5.59	7.87	2.09	3.07	3.82	5.59	7.87	2.09	3.07	3.82	5.59
Pipe Outside Diameter, (in)	2.95	4.09	4.88	7.00	9.69	3.03	4.13	5.00	7.13	9.92	3.03	4.21	5.08	7.48
Min. bending radius, (ft)	2.46	2.95	3.77	5.25	7.55	2,46	2,95	3,77	5,25	7.55	2,46	2,95	3,77	5,25
Thermal Properties														
Designed temperature, (ºF)	-40 .....+250													
Maximum allowed operating temperature, (ºF)	-40 .....+239													
Pressure														
Operating pressure according to API 15S, (psi)	600					1500					3000			
Minimum bursting pressure (68 ºF), (psi)	1726	1581	1552	1581	1581	4134	3757	3611	3452	3452	6237	5860	5787	5555
Minimum bursting pressure (150 ºF), (psi)	1653	1552	1421	1552	1552	4061	3648	3524	3379	3379	6164	5787	5715	5482
Weight and length														
Weight, (lb/ft)	2.82	4.30	6.04	10.95	20.16	3.63	5.44	8.27	13.17	30.23	4.43	7.79	11.42	22.17
Max. length, (ft)	3937	3937	2625	984	328	3937	3937	2625	984	394	3937	3609	2625	984
Weight of max. length with reel, (lb)	14409	20236	19162	14082	9919	17598	24724	25016	16266	15207	20748	31421	33285	25122
Properties														
Design life, (years)	20													
Expected life buried, (years)	50													

Advantages

OILTECHPIPE has a number of advantages compared with the traditionally used steel pipes :

- no corrosion
- reduced pipeline cost
- reduced pipeline installation time
- production of long-length parts
- low thermal conductivity factor
- high resistance to aggressive environments
- possibility of electric heating
- low hydraulic losses
- low friction, no scale or erosion
- low operating costs
- no cathodic protection

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Fittings and Installation equipment

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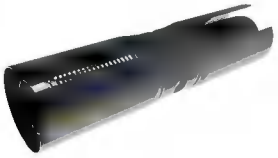
Flange fitting
Bolted connection
Sealing elements

Midline fitting
Connection of pipe segments



Welded fitting
It is welded to standard pipeline elements and standard pipeline fittings

Custom manufacturing

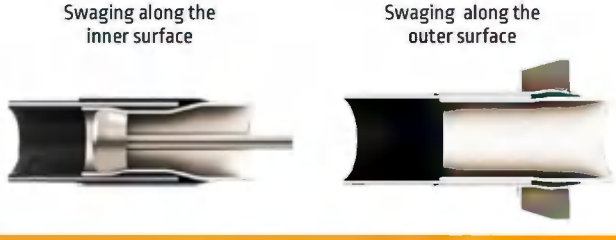
Configuration is at the request of customers. It is possible to manufacture flanges according to GOST, ANSI, DIN, ASTM, ISO.

Fitting Installation

End fittings are installed in several consecutive stages - swaging along the inner surface, swaging along the outer surface.

The purpose of swaging is the permanent formation of the end fitting walls according to the pipe size. This operation provides uniform tight crimp of the pipe walls by the fitting, both on the inner and outer surfaces.

Schematic diagram of broaching the fitting along its inner and outer surface:



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Installation

Advantages

- Quick installation of connections (30-45 minutes)
- Minimum amount of equipment
- Crew of 2-3 people

Pipeline Installation Equipment

- Fitting installation equipment
- Hydraulic press

Pipeline winding/unwinding equipment

- A-frames (pay-off)
- Take-up and pay-off equipment
- Moving on coiling rollers

Logistics

OILTECHPIPE is delivered in reels. It can be delivered to the place of installation by motor, railway and sea transport.

OILTECHPIPE in order to facilitate and make economically efficient the transport can produce reels and lengths according to required needs.






Installation methods

Trench pipe-laying

In comparison with steel pipelines OILTECHPIPE requires 20-40 % less width of a trench and decreases the installation time by several times.

OILTECHPIPE does not have any special requirements to a bed plate, however in order to prevent outer sheath damages the areas contacting the pipe should not have big, sharp stones or bulges. Passages under the road as a rule go to a manifold pipe.

Above-ground pipe-laying

Using method of direct laying it is possible to set up multiple lines in a quick and effective way. Usually during laying there is no need in any supports and ramps which are used with steel pipes.

However, OILTECHPIPE can be installed in existing pipeline routes using these constructions.

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Installation methods

Relining

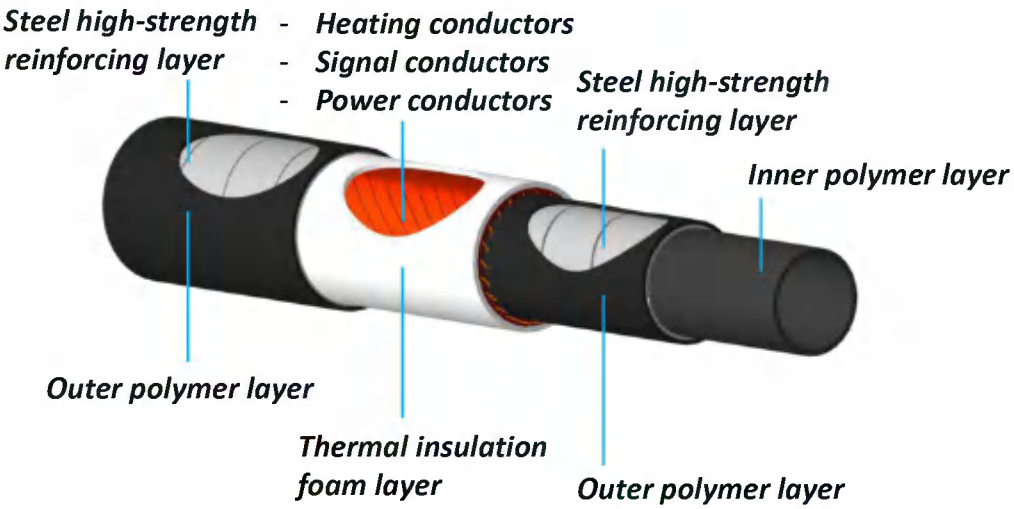
OILTECHPIPE can be installed instead of old pipes of bigger diameter by pulling the flexible composite pipeline through the opening the existing one. There is a successful experience of pulling one segment of the pipe with the length up to 1.2 km including several bends. The main restriction is the length of a guide pipe, which should be preliminary pulled through the pipeline to be relined.

Installation in severe climatic conditions

OILTECHPIPE can also be installed above the ground and ideal for applications in areas with severe climatic conditions, such as Arctic regions. OILTECHPIPE does not lose its strength characteristics at low ambient temperatures.

Pipe with electrical heating

Flexible pipes can be equipped with a thermal insulation foam layer with conductive conductors for electric heating.



The technology of insulation of flexible pipes with thermal insulation foam layer with conductive cores for electric heating involves the following operations:

- application over the outer shell of the flexible pipe elements (segments) with conductors of the same layer, wound in the same direction with a certain step. Segments with conductive cores may include heating conductors, power conductors, signal conductors (twisted pairs, fiber);
- application of two anti-wear layers of polymer tape over segments with conductors;
- application of thermal insulation foam layer over polymer tape by continuous extrusion;
- application to the thermal insulation foam layer of the reinforcing element of two layers of high-strength metal tape wound in the same direction with a certain step and gap;
- production of the outer shell by continuous extrusion from compositions based on low-pressure polyethylene.

Pipe with electrical heating

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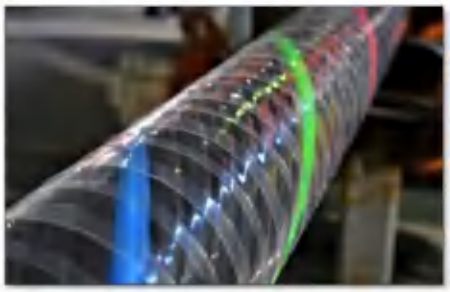
Varieties of conductive cores and thermal insulation layers are shown in the table.

Number of conductive, information, power, control cores, pieces.	Types of conductive cores	Cross-section of conductive cores, mm2	Thickness of thermal insulation foam layer, mm	The density of the foamed layer, g / cm3	The thickness of the outer sheath, mm
1 - 36	copper (aluminium)	0,2 - 16,0	5 - 30	0,5 - 0,9	3 - 7
	twisted pair (categories 5e, 6)				
	fibre-optic				






Depending on the length of the pipeline, there are three designs of each pipe size.

№ designs	Length of pipeline, m
1	up to 1800
2	from 1800 to 3700
3	from 3700 to 8000

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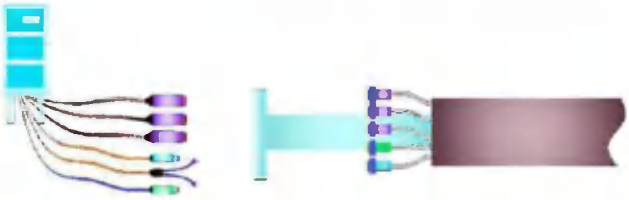
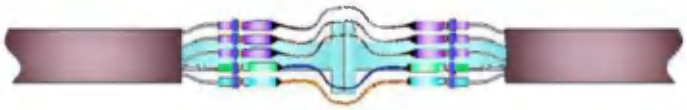
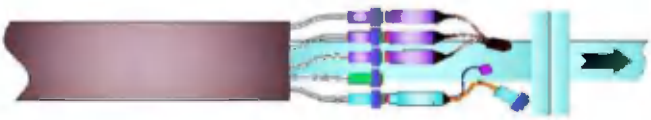
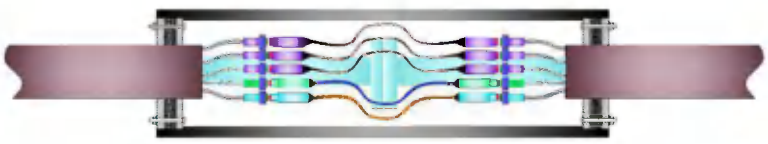
Pipe with electrical heating

The heating control unit is used to control the electrical heating system of the pipeline. The heating control unit includes a control station and a transformer.

Cable assemblies are used to connect the conductors.

Description	General view
Connection to the heating control unit	
Connection of pipeline segments	
The end of the pipe with electric heating	

To improve the reliability, tightness of the connection of 2 segments of the pipe with electric heating, an external protective (intermediate) coupling is used.



Umbilical for oil wells

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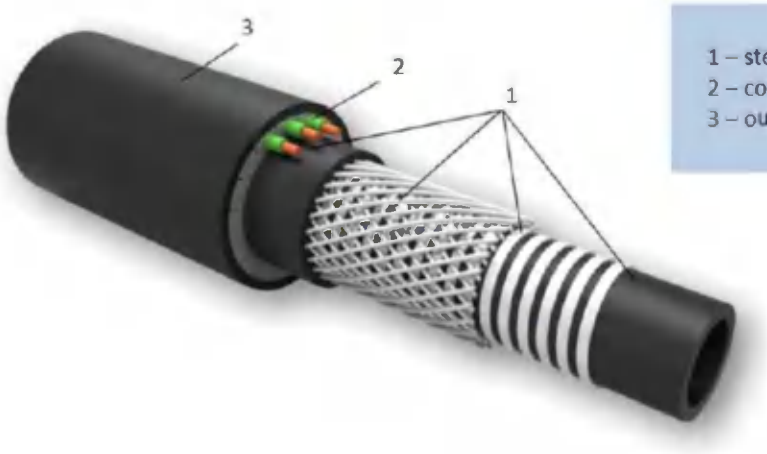
Umbilical construction



1 – steel polymer pipe
2 – conductive conductors
3 – outer shell

What are the advantages of umbilical cable over regular tubing string?

- Checking the tightness of the column is carried out at the factory.
- The time of work is sharply reduced, due to the exclusion of operations on twisting of NKT.
- The safety of the work is increased, since when the umbilical is launched, the personnel are not nearby, but only supervising the lowering process.
- Since the umbilical is made in one piece, there is no chance of leaks at the junction of two pipes.
- The probability of damage to the power cores is reduced, since they are located under a reinforcing sheath, which has excellent damping and protective properties.
- The environmental safety of the work increases since the wellhead is hermetically sealed during tripping, which eliminates the likelihood of a blowout or spill.
- On the inner surface of the pipe, the process of deposition of ARPD occurs much less intensively.

Umbilical for oil wells

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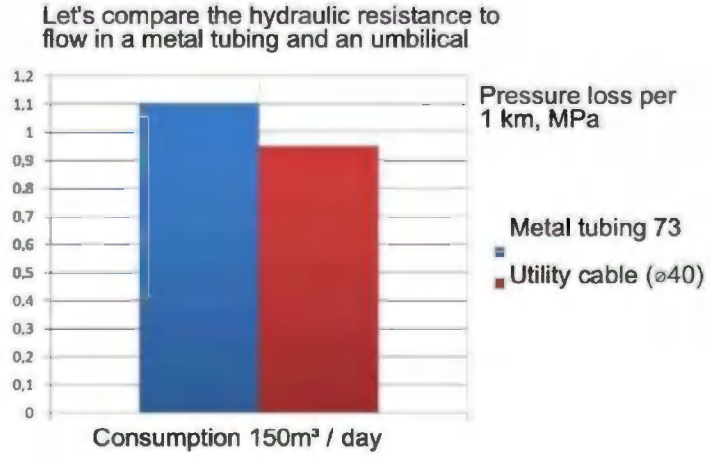
Technical parameters

Mark	Diameter, in/outr	Breaking strength	Min. bending radius	Weight in air	Max. pressure, in/out	Number of conductors	Section of conductors
	mm	kN	mm	kg/km	MPa	ea.	mm^2
OUM 30/75	30 / 75	120	1300	4200	25/25	3-15	3,0-16,0
OUM 40/85	40 / 85	150	1300	5600	25/25	3-15	3,0-16,0
OUM 50/98	50 / 98	180	1300	6400	25/25	3-15	3,0-16,0
OUM 63/112	Under engineering development						



As a result, hydraulic fluid resistance in umbilical with inner diameter 40mm is in practice equal to the resistance of tubing string NKT 73.

Pipe corrosion resistance

Steel-polymer pipes have higher corrosion resistance. Polyethylene is a main material, which is used in the production of our pipe, has operational life of 50 years that is significantly more in comparison with standard structural steel which is used for tubing production. Besides, polyethylene is more resistant to the influence of aggressive environments such as hydrogen sulfide and carbon dioxide which can be present in a well.

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Umbilical for oil wells

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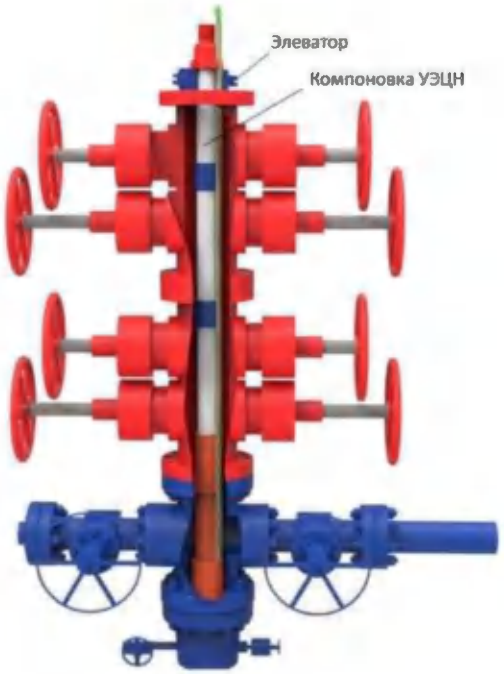
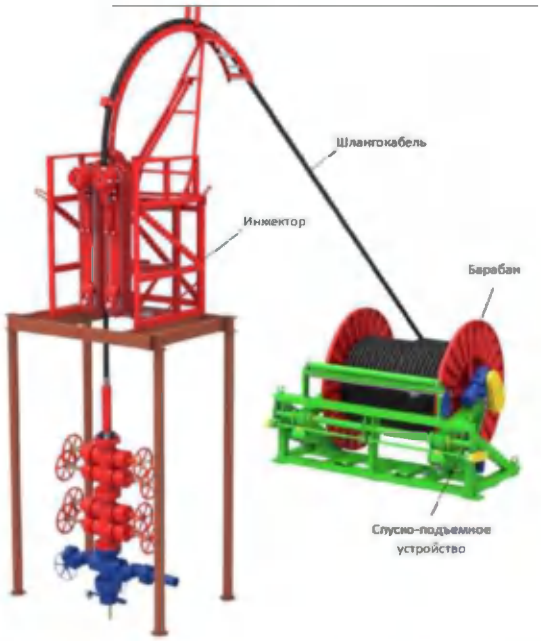
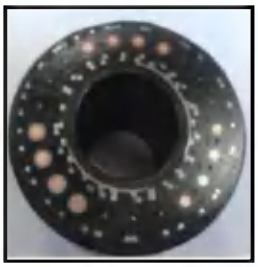
To produce ESP installation



Install injector, lifting equipment. Install the reel with umbilical into launching equipment and to put the umbilical into injector. Connect umbilical with components of ESP and splice conductors of umbilical. Descent the unit.





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Other products in the group

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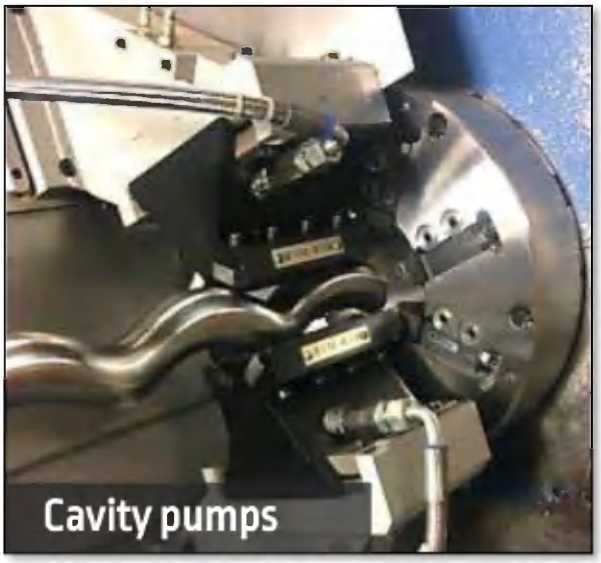
OILTECH group produces and distributes:

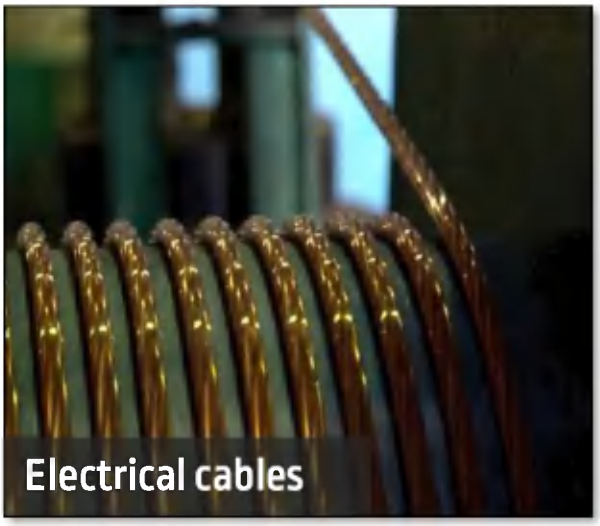

Tekcoat coatings


Cavity pumps


Rehabilitation pipes


Hydrogen generators


ESP pumps


Electrical cables

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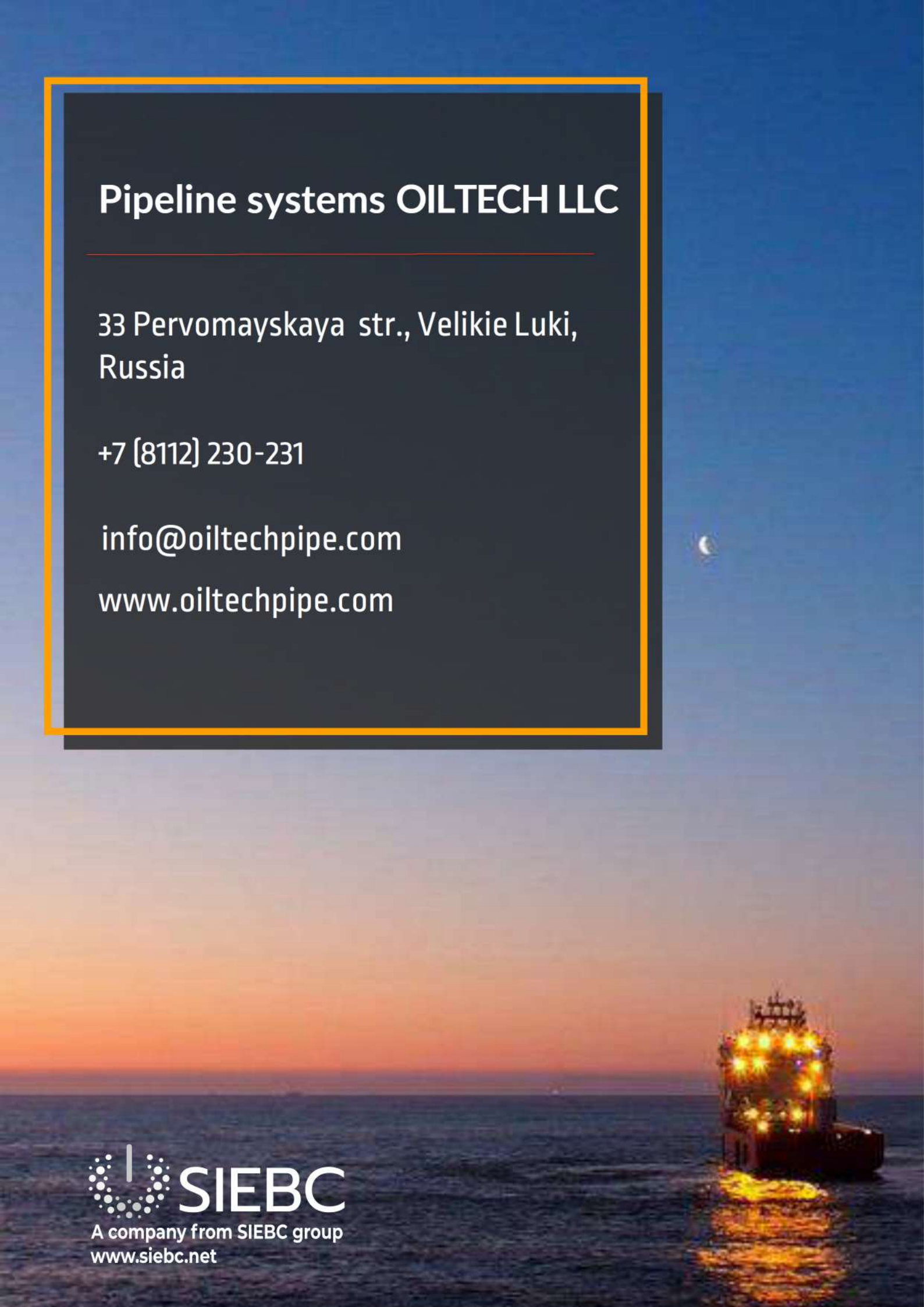

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