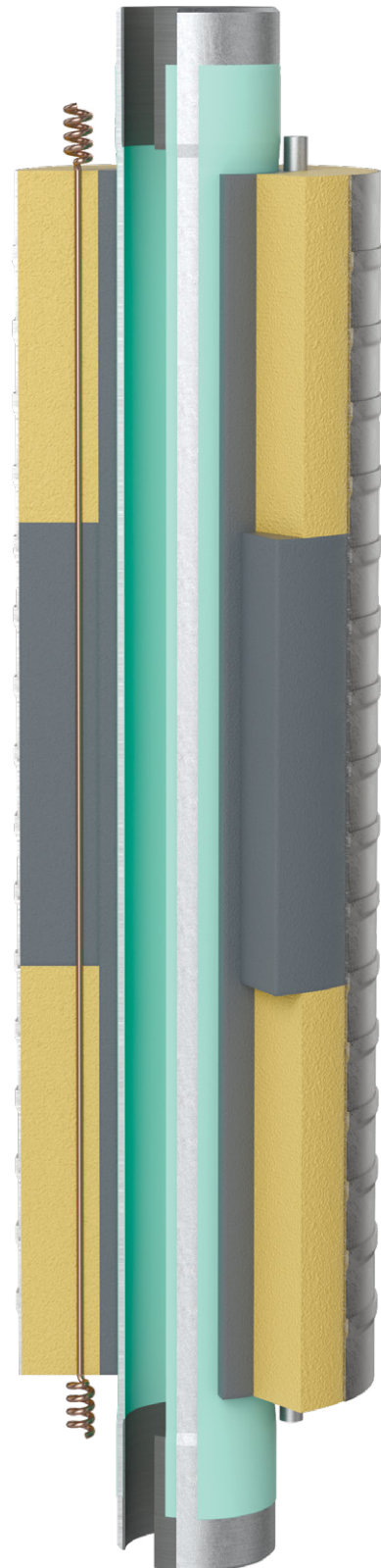


TAGRAS Oilfield Services Holding



PROTECTION OF PIPELINE AGAINST CORROSION AND HEAT LOSS



"100 Best Goods of Russia-2014"
contest laureate



"100 Best Goods of the Republic
of Tatarstan-2014" contest laureate

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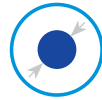
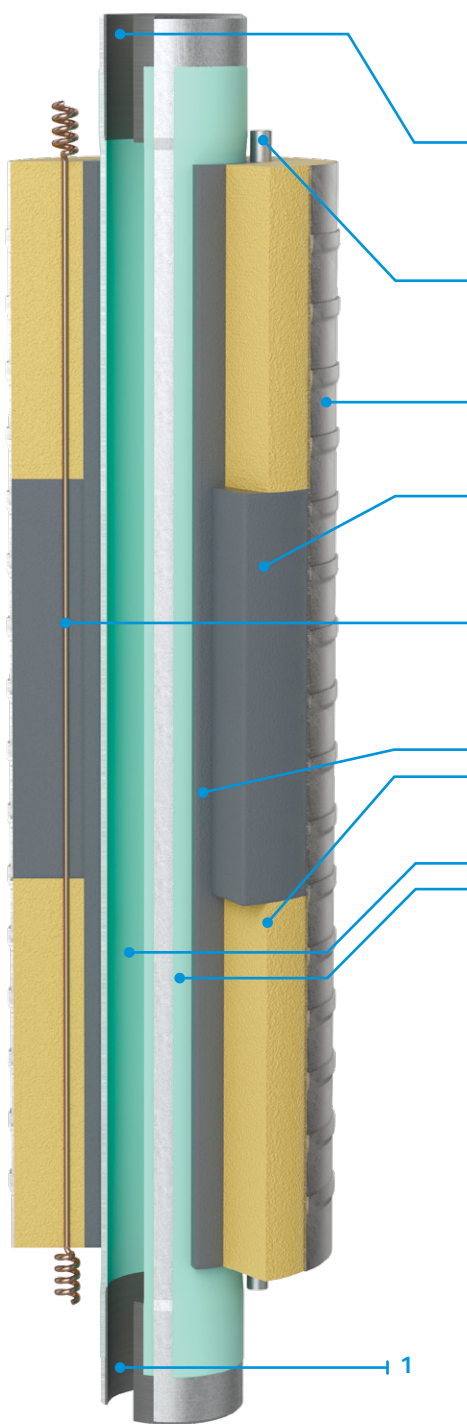
MORE THAN 60 OPTIONS FOR COMPLETING PIPELINE PROTECTION SYSTEMS AGAINST CORROSION AND HEAT LOSSES

Purpose

For construction of pipelines transporting coolant with a temperature up to 284 °F.

Field of application

- heat supply systems
- water supply system
- transportation of high-viscosity oil and oil products



Diameter range
from 1.26
to 20.87 in



Operating
temperature
up to 680 °F



Heat loss
reduction
by 2-2.5 times

1 The metalized coating of pipe end sections is made of thin-walled heat-resistant stainless bushings and is designed for corrosion protection of the welded seam inner surface and the weld adjacent zone.

2 Skin effect system is used when it is necessary to protect against freezing, as well as for start heating and maintaining the temperature of the transported product.

3 External insulation is made of galvanized steel, as well as light stabilized polyethylene, for above-ground and subsurface pipelining.

4 Fire protection inserts are made of non-flammable heat-insulating material and are installed in order to comply with fire safety regulations when operating pipelines.

5 Rapid remote insulation control system allows to define a place of possible pipeline rupture (with accuracy up to one meter) by the use of coating insulation resistance measurement method

6 Thermal insulation is made of polyurethane foam or two-layer combined insulation with a thermal conductivity of up to 0.033 watts per meter Celsius Allows to maintain the temperature of the transported agent

7 Internal and external polymer powder coating is made to protect the pipe coating from corrosion and improve the pipeline performance

Specifications of corrosion resistant powder coating



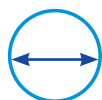
Coating
color

according
to the material
reference
documentation



Coating
adhesion
to steel by
X-type notch,
points, not
exceeding

1



Pipe diameter,
thicknesses –
according
to normative data
for the coating
material, μm, at least

350



Dielectric
continuity
of the coating

No breakdown
at 5 V voltage
per coating
thickness



Coating
adhesion
to steel by
tearing, MPa,
at least

10,0

Advantages

- Reliable performance specifications of anti-condition coatings are guaranteed by application in factory conditions and 100% quality control.
- Lowest heat conductivity among thermal insulators
- Construction of pipelines independent of weather conditions
- Broad options to combine different types of coatings