

# Mini-Coiled Tubing Technologies

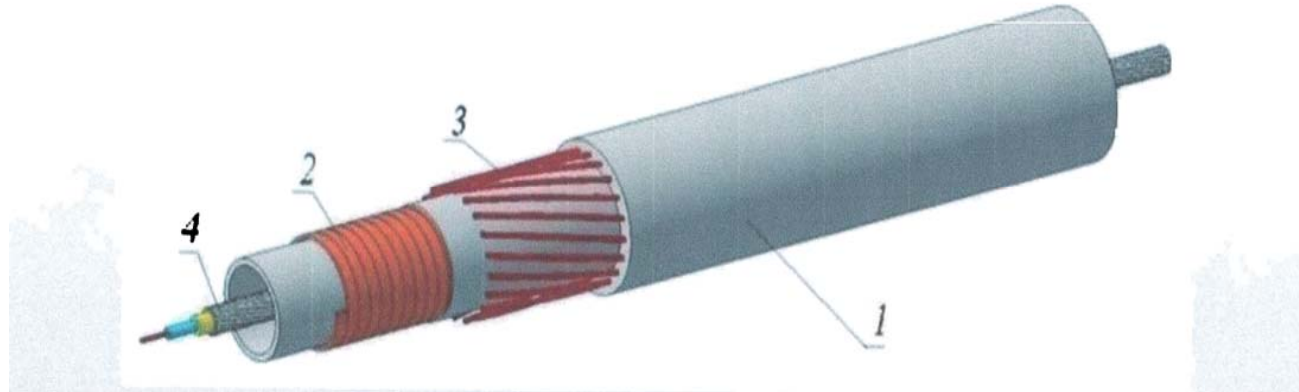


**GISpribor-M, CJSC** and **Pskovgeokabel, LLC** designed a complex of ground equipment and a flexible steel-polymer pipe for performing various downhole repair operations and surveys.

The number of wells requiring major and maintenance overhaul has recently drastically risen, the well stock is rapidly getting older demanding new types of repair works in order to increase their capacity.

At present, there is a great number of technologies necessitating both a hydraulic channel for supplying technological fluids and gases and a power cable for monitoring and researching processes in the wells.

**Pskovgeokabel** produces a wide range of flexible steel-polymer pipes for performing these technological operations.



**Fig. 1 Flexible steel-polymer pipe**

- 1 – pipe body (polyethylene or another polymer)
- 2 – lateral armoring (steel band of rectangular cross-section wound at a minimum lay length)
- 3 – longitudinal armoring (high-strength steel wires, counter-winded at a long lay length in two layers)
- 4 – logging cable

Working pressures – internal/external - **250/200 MPa**

Testing – **150% working**

Breaking force – **140 kN**

Breaking force (flexible steel-polymer pipe)– jet– **80 kN**

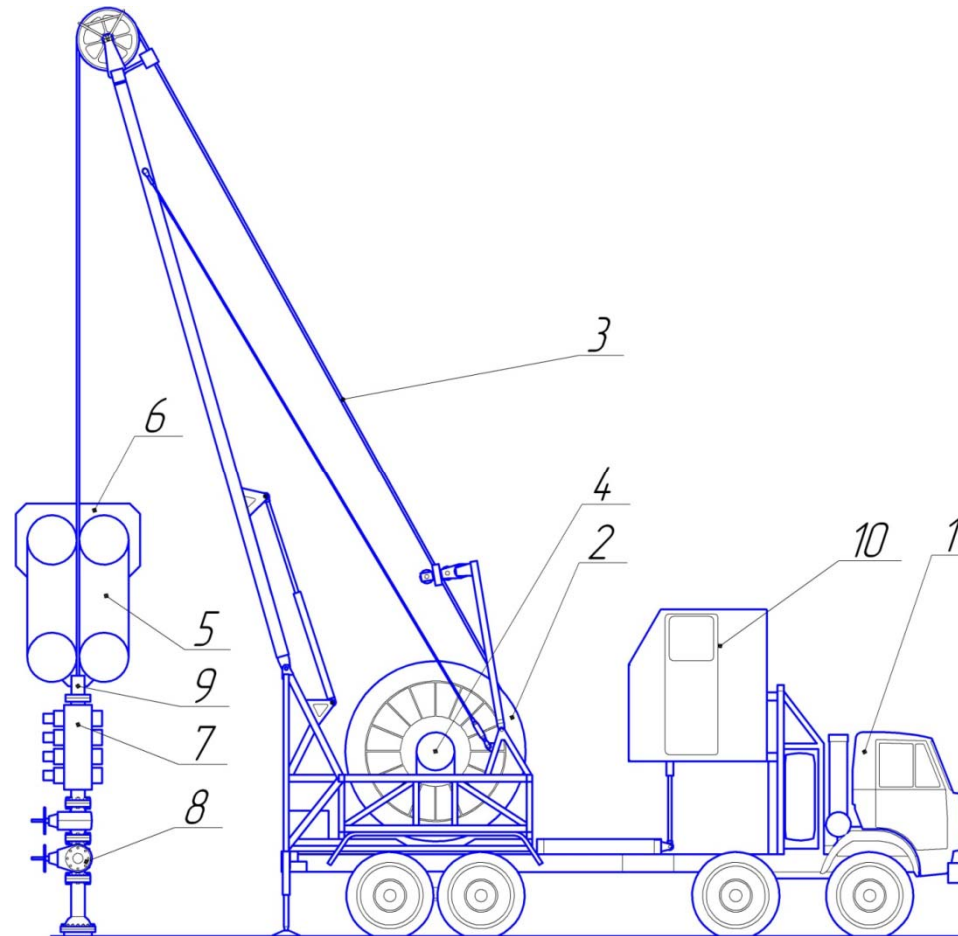
Maximum temperature of transportation and storage from **-40° up to +45°C**

Maximum downhole working temperature – **up to +80°C**

***JIT Engineering & Solutions Pte. Ltd., Singapore***

***Email : info@jitengg.com***

- ✓ Well development, stimulation by gas compressor mixture;
- ✓ Washing hydrate blocks;
- ✓ Washing sand shale blocks;
- ✓ Jetting, bottom-hole cleaning;
- ✓ Remedial cementing, treatment of bottom-hole area (alkaline, acidic), water shutoff;
- ✓ Borehole cleaning after hydraulic fracturing;
- ✓ Running tools in horizontal areas of the well, geophysical well logging;
- ✓ Perforating-explosive operations.



1 – vehicle (chassis), 2 – drum, 3 – flexible pipe, 4 – drum drive, 5 – feed, 6 – feed drive, 7 – BOP equipment, 8 – X-mas tree, 9 – stopping plug, 10 – operator cabin with control system.

***JIT Engineering & Solutions Pte. Ltd., Singapore***  
***Email : [info@jitengg.com](mailto:info@jitengg.com)***

### Technical characteristics:

- Capacity of winch drum, pipe dia. 38 mm **5000 m**
- Capacity of winch drum, pipe dia. 44 mm **4200 m**
- Capacity of winch drum, pipe dia. 50 mm **3100 m**
- Maximum pulling force at two first winding layers of pipe on the drum **90 kN**
- Dimensions in transit condition, m **11 x 4 x 2,5**
- Height to the axis of top roller on the mast in working condition **13 m**
- Lifting capacity of the mast **10 t**
- Hydraulic winch drive with planetary reducer integrated in the drum

## Manufacturing Special-Purpose Hoists with Flexible Steel-Polymer Pipes

At the present time the hoists with the flexible steel-polymer pipes manufactured by **GISpribor-M** are being operated at the Russian deposits:



**PKS-5G-T with a hydraulic winch drive of a running in and pulling out device, with a mast, a flexible steel-polymer pipe 25/44-140, length 4100m (Novie Sibirskie Tekhnologii LLC, Nefteyugansk)**

***JIT Engineering & Solutions Pte. Ltd., Singapore***  
***Email : [info@jitengg.com](mailto:info@jitengg.com)***



**PKS-3,5E with an electric winch drive and a crane,  
a flexible steel-polymer pipe 18/38-90, length 3,9 km  
(Nefteservis-NN LLC, Nizhny Novgorod)**

***JIT Engineering & Solutions Pte. Ltd., Singapore  
Email : [info@jitengg.com](mailto:info@jitengg.com)***





**The Special-purpose hoist PKS-5G with a pipe 18/38-90, length 2,4 km  
(TekhServis ZLT LLC, Novy Urengoy)**

***JIT Engineering & Solutions Pte. Ltd., Singapore  
Email : [info@jitengg.com](mailto:info@jitengg.com)***



a



b



c

a) Oil well No. 2319, oil field Priobskoye, PKS-5G with the flexible steel-polymer pipe, 44 mm (2011). Discharge line pressure 200 atm., pipe running in up to the depth of 2930 m, drainage 35m<sup>3</sup> (**Novie Sibirskie Tekhnologii LLC, Nefteyugansk**)

b) Flowing well development in Samara region, PKS-3,5E with the flexible steel-polymer pipe, 38 mm. Well depth 3100 m, pipe running depth 2150 m, working pressure 150 atm., drainage 65 m<sup>3</sup> (**Nefteservis-NN LLC, Nizhny Novgorod**)

c) Well No. 37, gas-condensate field Zapadno-Tarkosolinskoye, PKS-5G with the flexible steel-polymer pipe, 39 mm (2009). Discharge line pressure 65 atm., pipe running depth up to 1500 m (**TekhServis ZLT LLC, Novy Urengoy**)



**a**

a) Bottomhole cleaning of propant remains after hydraulic fracturing. PKS-3,5E with the flexible steel-polymer pipe 38 mm. Samara region, well depth 1800 m, pipe running depth 1795 m, discharge line pressure 200 atm. (**Nefteservis-NN LLC**)

**b**

b) Bottomhole cleaning of injection well No. 1, gas-condensate field Yamsoveyskoye (2010). PKS-5G with the flexible steel-polymer pipe 39 mm, well depth 1500 m, pipe running depth 1500 m (**TekhServis ZLT LLC**)

***JIT Engineering & Solutions Pte. Ltd., Singapore***  
***Email : info@jitengg.com***



**a**

a) Borehole cleaning of paraffin deposits with the help of washing and cleaning nozzles. Samara region, PKS-3,5E with the flexible steel-polymer pipe 38 mm, well depth 3000 m, working line pressure 150 atm. (**Nefteservis-NN LLC**)



**b**

b) Removal of hydrate deposits. Yamsoveyskoye field, well No.2, PKS-5G with the flexible steel-polymer pipe 39 mm, well depth 1500 m, hydrate deposits at the depth of 390 и 450 m, discharge line pressure 50 atm. (**TekhServis ZLT LLC**)

***JIT Engineering & Solutions Pte. Ltd., Singapore***

***Email : info@jitengg.com***



**a**

a) Water removal from the bottom-hole of Komsomolskoye gas-well, PKS-5G with the flexible steel-polymer pipe 39 mm, water removal depth 950 m, pressure in the well 30 atm.(2009) (**TekhServis ZLT LLC**)



**b**

b) Water removal (drawdown) in the injection well of Yamsoveyskoye gas-condensate field. PKS-5G with the flexible steel-polymer pipe 39 mm, water removal depth up to 1000 m, well depth 1500 m, removed 30 m<sup>3</sup>, line pressure 50 atm. (**TekhServis ZLT LLC**)



**c**

c) Water removal from the water supply well of Zapadno-Tarkosolinskoye field, PKS-5G with the flexible steel-polymer pipe 39 mm, water removal depth 220 m, removed 60 m<sup>3</sup>, line pressure 40 atm. (**TekhServis ZLT LLC**)



**a**

a) Geophysical and hydrodynamic research of the horizontal area of the well No. 15401. Severo Urengoyenskoye gas field. PKS-5G with the flexible steel-polymer pipe 39 mm, well depth 1546 m, horizontal area 250 m, pressure in the well 30 atm. (2011)  
(**TekhServis ZLT LLC, Novy Urengoy**)



**b**

b) Geophysical and hydrodynamic research of the injection oil well No. 4143. PKS-5G-T. Rigid logging cable 38 mm. Well depth 2375 m, length of the horizontal area 220 m, layer pressure 163 atm. (**Sovetskoye field (Tomskneft)**)

# Thank You for Your Attention!



*JIT Engineering & Solutions Pte. Ltd.,  
10, Jalan Besar, #10-08 Sim Lim Tower, Singapore – 208 787  
Ph: +65 6337 5090, Fax : +65 6396 5292  
Email : [info@jitengg.com](mailto:info@jitengg.com)*