

Science and research-production company SPC "Polytechnika" LLC is a leading Russian company specializing in the development and mass production of collapsible pillow tanks, fuel bladders and soft shells for the Ministry of Defense, Ministry of Emergency Situations, the oil and gas and chemical industry, industrial, scientific, agricultural and commercial companies of different profiles.



SPC "Polytechnika" was founded in 1991 by specialists of the Russian Institute of reliability "Poligrafmash", with the support of the "Center of scientific and technical activities and social initiatives" USSR Academy of Sciences with a view to the introduction of new developments. Manufacture of elastic shells and composite elastomers are one of the most important directions of the high technology industry.

In Russia at the framework of diversification since 2003 SPC Politehnika is the first company at the market who began development and production of a new type of product - Mobile collapsible crude oil tanks and fuel bladders for storage and transportation of crude oil and petroleum products, including elastic supplementary tanks for oil tankers of thermoplastic and composite barrier materials.

In May 2004, in Horton city of Norway at an international conference "Russia - NATO on security issues in the Barents Sea", our company presented "Collapsible removable tanks for oil fleet, Cargo leakage prevention and minimization of damage from accidental spills". The report aroused great interest from both the Western experts, and from participating in the conference Russian deputies, officials and businessmen.

In autumn 2004, the collapsible pillow tanks have been successfully applied in extinguishing forest fires in Shaturtsky Region of Moscow. In the same year, fire mobile collapsible tanks took part in several exercises Emergencies Ministry landfill Noginsk, Moscow region.

Since 2005 SPC Politehnika, mastered in the test, and then at the mass production at the own production base in Moscow oil bladder tanks for various purposes, including oil, fuel, water, chemicals and other liquid products, as well as collapsible gas tanks and soft tanks. Was mastered serial production line collapsible pillow tanks for various purposes, the state carried out the examination of industrial safety products, certification system GOST-R also received permission to use Gostehnadzora in Russia.

In 2007, at the request of OAO "Gazprom" for the first time in Russia, we done a project organization of Field Fuel Farms (Arctic DT) with a capacity of 3000 cubic meters shore-based oil bladder based on the site of pioneer exit pipeline Yamal - Europe, Bajdarsky lip. Fuel depot was brought to the place of work by sea and erected on the shoreline within 3 working days. After which it was carried out on acceptance of diesel fuel floating flexible pipeline on board of the tanker, which was at a distance of more than 2 kilometers from the coast. Operation on acceptance of fuel took about 12 hours. By the record speed of installation term development of this facility has been reduced by more than one year! As well have been spared significant tangible assets.



In the future, fuel farms (FFD) of different sizes were placed on dozens of remote oil and gas facilities, mining exploration and construction of Siberia and the Far North, as well as the Republic of Kazakhstan, Libya and Vietnam. As well as fuel depots and oil tank farms with a capacity of 500 to 15 000 m3 were produced and put into operation in dozens of objects from Kamchatka and the Kuril Islands to the Yamal Peninsula, Pechora and Varandey.

Today our customers for oil field storage tanks and fuel depots are the Ministry of Defense, Emergency Situations Ministry, the Federal Agency for State Reserves, Russian Academy of Sciences, Ministry of Natural Resources, the largest oil and gas companies, contractors and service companies, as well as a number of Western oil companies and governments in developing countries. Large oil depots tank and collapsible oil tanks were mounted on objects outputs such companies as **"Gazprom", "Rosneft", TNK-BP, "Transneft", "Transnefteprodukt", "Gazprom drilling", "Stroytransgaz", "Stroygazkonsalting", "Urengoydorstroy", Airport "Surgut", "Mezhregiontruboprovodstroy", "TNG-Group", "Argus Pipeline", "Integra Drilling", "Vankorneft", "Interminerals", "Bort Longyear" and many other companies in remote regions of the country.**

Participation in international research programs and innovative projects, SPC "Politehnika" always on the high level of technology development, implementation and production, constantly expanding the range and improving the efficiency parameters of products. Our company on its educational and industrial base and on the basis of its partners - the Academy of Civil Protection and Emergency Situations Minister GC "Arsenal Salvation" - provides trainings, coachings, training and certifications of customer representatives to work with collapsible pillow tanks, the oil tank depots and tank farms. If necessary, the company provides customer training on-site.

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THE MAJOR RUSSIAN AND FOREIGN CONSUMERS OF SPC "POLITEHNIKA" PRODUCTS:



Russian Ministry of Defense
 JSC "Integra Drilling"
 JSC "PetroEngineering"
 JSC "Yamalgazinvest"
 TOO "LAMERC AGRO"
 HALLIBURTON
 Wetherford



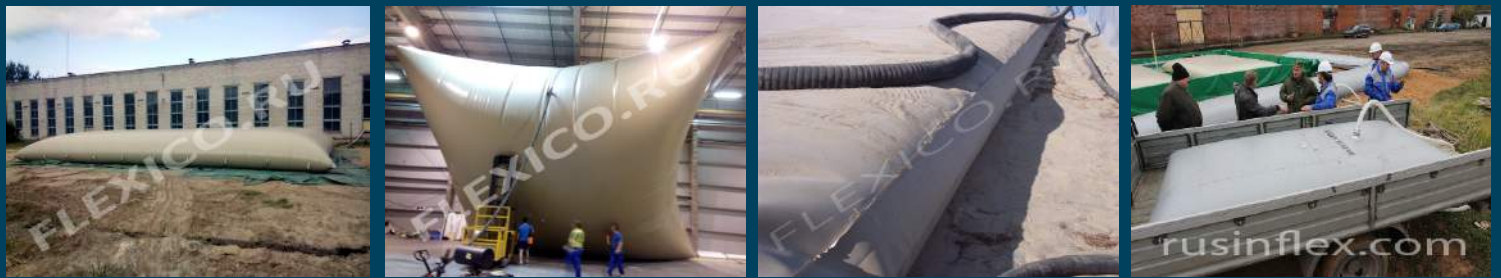
FA "Rosrezerv" Goszakaz
 "THK-BP"
 JSC "TNG Group"
 JSC "Elektrosetservice"
 Vietnam's Ministry of Defense
 JSC "RU-ENERGY GROUP"
 TAT-NEFT

Collapsible Fuel Bladder Tanks for liquid fuel storage and transportation of crude oil and lubricants, which are manufactured by our company, are made of polyether and super-hard material with ballistic plaiting and two sided polyvinyl chloride covering. Such material of a shell can provide not only with strength, but with containment and workability of products in the range of temperatures of **-60 to +80 degrees.**










These fuel bladders proved themselves well under the most extreme and the hardest conditions of use – whether these are wet rainforests, hot deserts or even cold tundra.

Flexible, Collapsible Fuel Bladder Tanks for liquid fuel storage of PER-N series are manufactured with nominal capacity of one up to 120 cubic meters.

Flexible, collapsible bladders for fuel and crude oil products by SPC “Politechnika” LLC are light, compact and reliable. They allow organizing operatively long term storage of fuel items and crude oil as well under factory environment as under field conditions as a cost-effective farms under any type of ground: even on sand, snow, stones, swamps, ravines and gullets. There are also available transport modifications of flexible tanks, designed for crude oil and fuel products transportation by closed and opened platforms of automobiles.



PRIMARY BENEFITS OF COLLAPSIBLE FUEL BLADDER TANKS:

-  Extraordinary lightness and compactness in spent state;
-  Delivery to the place of operation is performed by any means;
-  High rate of mantling and dismantling;
-  Availability of arrangement on unprepared surface, ground, snow, swamps, ravines and tranches and so on;
-  Collapsible fuel bladder tanks cover is produced from extra sound material, providing with the exceptional safety and durability under multiuse conditions;
-  High range of working temperatures -55C to +80C;
-  Nonsusceptibility to corrosion and environmental impact;
-  Exclusive ecological cleanness;
-  Land remediation necessity absence.

Collapsible fuel bladder tanks and industrial shells of Scientific and Production Company “Politechnika” LLC are manufactured according to trendsetting technologies from materials of American and European production.

Quality control of materials, technological process and acceptance of ready products are performed according to the requirements of GOST-R ISO 9000 standards.

Our company performs project assistance, supervising installation and designer supervision on the objects of product introduction, and also guarantee maintenance and after guarantee maintenance.

THE WHOLE PRODUCTION HAS ACCEPTANCE CERTIFICATE AND IS CERTIFICATED ACCORDING TO CURRENT STANDARDS.

Collapsible fuel bladder tanks PER-N satisfy the requirements of tactical and technical characteristics for Collapsible fuel bladder tanks of defense purpose, and also the requirements of international military standards of NATO and US Military.

Oil tanks are authorized for oil and petroleum products storage and transportation by Russian Technical Supervisory

Field Fuel Storages are the cost-effective **Temporary Relocatable Bulk Fuel Storage System** based on Collapsible Fuel Bladder Tanks, contemporary alternative to old fashioned methods of fuel and water storage.

More than 11 years, our company manufactures given type of product, which is actively used on the fuel market, as well in the northern regions as in the southern regions of the World. Field Fuel Depot Unit based on Collapsible Pillow Tanks has recommended itself as high qualitative solution in fuel logistics, shortening the time of delivery, mounting and working process beginning of fuel storages in many times.










Field Fuel Storage based on Collapsible Bladder Tanks PER-N are destined for the delivery, storage and outgiving the fuel and oil and lubricants, and also for the storage of crude oil under field conditions for the period of works performance process in the district of location, in constant readiness to move.

**IN ONE STANDARD 20 FEET CONTAINER PLACES
THE COMPLETE STORAGE OF FUEL WITH NOMINAL CAPACITY OF 1000 CUBIC METERS**



**FIELD FUEL STORAGE UNIT WITH NOMINAL CAPACITY OF 1000 M3
IS MOUNTING FOR 3 DAYS BY 8 PERSONS!**











GENERAL ADVANTAGES OF FIELD FUEL STORAGE BASED ON COLLAPSIBLE BLADDER TANKS:

-  **High mobility, mounting and dismounting speed;**
-  **Wide range of working temperatures -55°C - +85°C;**
-  **Availability of placement on unprepared surfaces, ground, snow, swamp, trenches and so on.;**
-  **Multiuse;**
-  **Relatively reasonable price;**
-  **Exclusive safety;**
-  **Exclusive ecological safety;**
-  **Corrosion and environmental impact resistance;**
-  **Ground recultivation necessity absence.**

Field Fuel Storage based on fuel bladders, delivery to the place of dislocation is performed by any transport, including above ground, air, water transport.

Field Fuel Storage activation and deactivation performs by 6-8 persons for a few hours. Fuel delivery on FFS is performed by automobile transport through winter road, and also by petroleum ship, by railway cisterns or through Field Bag Trunk Pipelines.

FULL SET OF FIELD FUEL DEPOT UNIT BASED ON COLLAPSIBLE BLADDER TANKS INCLUDES:

-  Collapsible fuel bladder tanks - PER-N which perform safe fuel storage with a capacity of 25 cubic meters. to 125 cubic meters and more;
-  Crown cover and impervious berm;
-  Delivery suction hose and portable pipelines;
-  Lock valve;
-  Quick strike connections "Cam-Lock" or TK;
-  Pumps, counters, filling station dispensers;
-  Signalization and firefighting means;
-  Lighting protection system;
-  Cleaning arrangement of rain water, slushy and drain water;
-  Additional equipment correspondingly from the purpose of Field Fuel Storage Unit;

After finishing of working process in the place of their performance there is no left half empty tanks and barrels, which are the dangerous source of technological contamination. Recultivation of the ground after FFS exploitation isn't necessary.

Field Fuel Storage on fuel bladders, which is collapsible pillow tanks are widely used as well in military as in civil purposes, including the construction and staging the remote objects (pipelines, oil industry, goldfields, mines, rotation villages and so on).

COLLAPSIBLE PILLOW TANKS FOR INSULATING OIL



Collapsible pillow tanks of PER-N TM series on the basis of oil bladders PER-N tanks with capacity 1m3 – 50 m3 and more, are successfully applied for unloading and storage of hot (up to + 850C) insulating oil under scheduled repair or emergency repair conditions of electrical substation or separate transformer houses, on the line switching station or other objects of electric power supply.

Collapsible pillow tanks **PER-N TM** is made of polyether and superhard material with ballistic plaiting and two sided polyurethane or special polyvinyl chloride (PVC+TPU) covering. Covering material provide with strength, containment and workability of products in the range of temperatures -550C– +850C.

Collapsible pillow tanks **PER-N TM** is completed with air, dispensing and drainage leadaway pipes.

Connections and strengthening in the structure of PER-N TM are made of silicon rubber, resistant to the impact of high temperatures and chemical content of insulating oils.

Flexible tanks for oil spill response of SPC “Politechnika” LLC manufacturing are used for gathering, storage and transportation of oil contaminants during oil spill response on the water or ground surface, and one more during planned works on the objects of pipeline type transport.






FLEXIBLE TANKS CONSTRUCTION:



Completing with drain connections and filler tubes, respiratory vent pipes and fastenings, these tanks performs safe storage and petroleum products transportation.

Flexible tanks types and exploitation

FLEXIBLE TANKS ARE USED FOR:

-  Temporary petroleum products storage organization;
-  Oil spills accidents prevention;
-  During the transportation into difficult to reach region and into pure water storage organizations.

THERE ARE TWO TYPES OF FLEXIBLE TANKS:

-  Flexible pillow shape tanks: are on the market not long ago, but they had time to obtain popularity. They’re made of polyether materials with special two sided covering from polyurethane or polyvinyl chloride, which are chemically resistant to the stored products;
-  Fabric tanks are the special tanks for gathering of oil sludges, and which are equipped with handles for loading and transportation. In empty state these light and compact tanks fill the minimum of place and can be delivered to the place of the accident by any transport, and be ready for work in a few seconds.

ADVANTAGES OF OIL SPILL RESPONSE:

1. Temporary expenses and labor contributions decrease for the transportation, mounting and exploitation in comparison with usual means of oil sludges removal.
2. Durability thanks to strong materials – fiber glass, polyurethane and working temperatures range -60 – +85 degrees.
3. Equipment compactness and lightness.
4. Preparation works absence for placement on the platform.
5. Corrosion absence.

Flexible tanks of PER-W series are destined for storage and transportation of pure and feed water as well for private and agricultural use as for industrial use, including the organization of fire safe water storages and water delivery to the places of fire outbreak.



Flexible tanks for water PER-W of pillow form are produced serially, and also (according to the size of customer) set in opened and closed modifications, which should be installed in reference state, on the lofts, basins.

Capacity of standard Flexitanks PER-W (P, T) from 1 cubic meter to 120 cubic meter and more.

General characteristics of flexible tanks PER-W for pure and feed water transportation on the platforms of automobiles and auto train.

The shells of flexible tanks is made of extra strong materials and is provided with binding ratchet straps to transportation platform, trunk, auto train, carriage body.

Stationary and transportation flexible tanks are successfully used for the storage and delivery of water solutions of agricultural chemicals and fertilizer liquid.

Nominal capacity of transport modifications from 250 liters to 30 cubic meters.

SPC "POLITECHNIKA" LLC OFFERS "ARCTIC SERVICE" INCONGEALABLE TANKS - THERMOSTATS

To store the water under freezing temperatures condition up to - 50 °C there are foreseen special systems of thermostating for oil bladders (PER) tanks consisting of heating electric canopy and heat insulating covering made of air bubble film with heat reflecting surface. (see detailed description and characteristics in PDF format).







Firefighting tanks of water supply in a mandatory manner include idle containers for the storage of normal amount of water– fire tanks. Without this condition safety system of any industrial or household object will be ineffective.



Permanent perfection of contemporary materials created the whole class of flexible containers for the storage and transportation of different liquids. Elaborated and manufactured by Scientific and Production Company “Politehnica” LLC collapsible tanks under transporting conditions are effective in case of firefighting and they can be used as temporary storages.

Flexible tanks and reservoirs of pillow form are made of synthetic high strong material with water resistant two sided polymer shells. Tanks are installed in that place where will be their long term exploitation. It can be, as well as temporary storage of water during the object construction process, as season tanks used in agriculture and in fire danger zones.







TO PREVENT THE FIRE THE FOLLOWING MODIFICATIONS OF FLEXIBLE TANKS OF PER-WT SERIES SHOULD BE PERFORMED:

-  Stationary cushion fire tanks of water storage for firefighting with capacity of 1 to 100 m³ and more (look the description and standard series).
-  Insert for steel and concrete fire tanks and containers.
-  Water resistance surface for fire basins and ponds (find out more detailed information about impervious canopy TFG).
-  Intermediary fire tank accumulator and distributor for the water supply to the fire source with the help of additional line length more than 2- 3-km., the capacity of one is up to 120 cubic meters and more.
-  Transport flexible tank is the cistern for water supply to the fire source on board and platforms of automobile transport, in containers for hard wastes and by other types of transport. Capacity is up to 30 cubic meters (look tactical and technical characteristics).
-  Handing helicopter modification for water supplies into difficult to reach and remote places to provide with working process of mobile fire team. Capacity 1, 3, 5 and 15 cubic meters.

Flexible Fire tank is equipped with coupling heads GM50, GM 70, GM 80, GM 120 correspondingly with technical task of a customer. Mobility, compactness and light transportation weight of polymer flexible tanks PER make them irreplaceable as well for organization of fire tanks, containers and basins for different dwelling, industrial, constructive and other objects as for operational water supply to fire team.

FLEXIBLE TANKS ADVANTAGES:

The choice of exactly these constructions is identified by their exploitational characteristics and advantages:

-  Simplicity and speed of installation and dismounting;
-  Light weight and size of the product;
-  Transportation convenience;
-  Certain requirements absence for preparation of the ground;
-  Multiuse availability;
-  Waterproofing absence.

“Politehnica” company manufactures flexible tanks as well in stationary performance mode as in transportation performance mode. Except that, the inserts for steel and concrete containers are manufactured from water resistant material.



REQUIREMENTS AND TESTING

To provide with safe and stable exploitation the collapsible tanks should possess the containment and strength as well of fabric, as of joints.

To store the water under freezing temperatures condition up to - 50 °C there are foreseen special systems of thermostating for oil bladders (PER) tanks consisting of heating electric canopy and heat insulating covering made of air bubble film with heat reflecting surface. (see detailed description and characteristics in PDF format).

It’s performs with the help of following control operations:

1. Incoming control of physical and mechanical characteristics and water resistant fabric.
2. All ready products are tested under manometric pressure.
3. Accuracy and workability of each collapsible tank is possible only under stable work of technological equipment and satisfying all requirements of technological process.

Scientific and Production Company "Politechnika" offers you to examine the possibility of Flexible tanks "Crane-Test" use for testing of load lifting technic.

Purpose:

Flexible tanks for the testing of load lifting technic "Crane-Test" by the manufacturing of our company is destined for certification optimization and include the water filling.

The cover of flexible tanks ERTG is manufactured from strong synthetic material with two sided polymer covering, which provide with a containment of a product.








The cover is equipped with load braces, filling allotments, placed in the upper part of a cover (for ERTG with capacity more than 20 m3) and confluent allotment, placed in the lower part of a cover, and also with ball valve.

ERTG can be used in the function of containers for water storage under accidental conditions.

(more photos on the page "Photo Gallery")



TECHNICAL SPECIFICATION:

-  Used for the testing of dockside cargo cranes, marine platforms, load lifting technic and floating facility of common purpose;
-  Doesn't require the expenses for the delivery and storage as concrete units;
-  Can be set up for the convenience of transportation and storage;
-  From 1 m3 to 10 m3 ERTG is packaged in a sack, from 12,5 m3 to 50 m3 in a box
-  All ERTG tanks are produced with strength index 6:1;
-  All the tanks are certified for strength and containment;
-  Nominal capacity from 1 m3 to 50 m3.

Under accidental conditions today is widely used the new equipment which can not only prevent mini catastrophe, but keep safe from it. Moreover, such equipment is truly compact operative in its installation and useful in all possible situations. One of the elements of such contemporary approach to provide with safety is water filling collapsible dams.

WATER FILLING COLLAPSIBLE DAMS CONSTRUCTION AND WORK PRINCIPLES

Water filling dike is the closed flexible pipe with external covering from synthetic material and two inner hermetic cameras from multiply polymer film. Also the dikes are equipped with emptying filling allotments, filling connection for separated pump or motor pump addition and drainage allotments.

On the shell there are strops in order to have the possibility to fix the filling dam on the graded surfaces and to fasten the cables. Size compactness also wonders: during the transportation the dam are rolled up and packaged in wooden boxes or fabric material.



WATER FILLING COLLAPSIBLE DAM NATURE AND USE






Water filling collapsible dams are filled with water constructions, made of multilayered strong composite material. The package consists of four flexible pipes of 25 m longitude. Each of these flexible pipes is easily installed for 15-20 minutes, replacing with itself thousands of sacks with sand, what is impossible to estimate in accidental situations. In time of flood in Russia, which shocked everybody, the cargo in the function of filling dams was easy to reload after transportation on automobile vehicles and to transport it in the flooded regions. Water filling dams, manufactured by our company was successfully applied in the protection of Far East regions in the end of summer and in the beginning of autumn of the present year.

As it seen, water filling collapsible dams gives the opportunity to organize the safest of essential objects: dwellings, hospitals, schools, wells, industrial enterprises in case of flood. At that the mounting equipment exploitation are performed quickly without labor contributions at the hands of specialists.

This type of equipment is widely used in the USA, EU countries and other developed countries to provide with effective protection of the objects from floods. Also they are permanently used during the reparation process or building of different hydro technical constructions, including landing places, dams, and bridges. Also this equipment is widely used in works connected with reparation of underwater areas of major pipelines.

ADVANTAGES OF WATER FILLING DIKES

The equipment, which is used in accidental situations, requires such characteristics:

-  Safety;
-  Installation speed;
-  Performance;
-  Reasonable price;
-  Mobility.

All these advantages have water filling collapsible dams. Think: in the process of industrial objects and whole populated locality protection the sacks with sand are always used against floods. The laying of such protective embankments requires long period of time, hard work and truly big costs.

Taking into account that on water filling dams by SPC "Politechnika" **can replace one thousand sacks with sand**, the advantages of its use are obvious. Water filling dams become also the unique solution in drainage of the bottom sectors, in most cases necessary for building and reparation of the objects of hydro technical purpose.

The time required for installation is also surprising: for the mounting of one construction it's necessary approximately half an hour and small labor contributions, that becomes the necessity under lack of specialists conditions in the struggle against water power.

INSTALLATION TIME AND FILLING DAMS OF 1000 METRES - 30 MINUTES !!!

In Russia the manufacturing of water filling anti flood dams first set up by Scientific and Production Company "Politechnika". Our company manufactures this equipment from the newest elastomers of composite type and warrants for its quality.