



POLIMERPROM

CATALOGUE

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Important:

The information contained in the present Catalogue is for reference only and should be updated when making a purchase order.

Technical Catalogue



www.polimerprom.com



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ABOUT THE COMPANY

POLIMERPROM Limited Liability Company was established in 2003. The main trend of its activity is production of polymer products and couplings for casing, tubing and drill pipes.

Since 2005 Polimerprom LLC has been engaged in development and commercial production of thread protectors for casing, tubing and drill pipes and of protection elements for pipes and pipelines.

In 2008 the Company implemented Quality Management System ISO 9001:2008, which made it possible to significantly improve quality of its products, enlarge marketing possibilities and raise the Company reputation. At the moment LLC POLIMERPROM operates quality management system ISO 9001: 2015 which is confirmed by the certificate of SAI Global, Canada.

In March 2009 the Company obtained an SGS Certificate proving that the thread protectors produced by POLIMERPROM LLC corresponded to the requirements of API 5CT, Issue 9.

In 2011 the Company developed, patented and brought into production metal-polymer saddles for packaging, storage and transportation of pipes of various diameters. Notwithstanding this factor, but despite this, Company is not satisfied with what it has already achieved.

In 2013 POLIMERPROM extended the line of its products for oil and gas industry and commenced production of Couplings for casing, tubing and drill pipes produced according to GOST, GOSTR, TU and API Spec.5CT (Issue 9). At present the Company's production capacity amounts to the following:

- * 1 400 000 pipe protectors per year;
- * 1 100 000 couplings per year.

POLIMERPROM LLC is the largest producer of protective products for pipes of oil range.

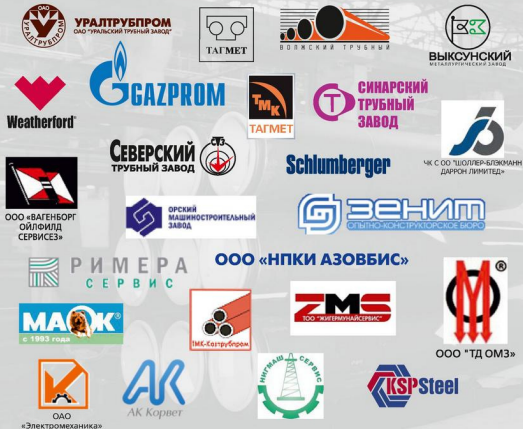
Being a production-oriented enterprise, we have qualified specialists and our own production equipment of modern and efficient equipment of imported and domestic production, which allows us to carry out the whole complex of works on preparation and implementation of batch production, including design and construction work, manufacturing of equipment (injection molding Forms) in cooperation with the leading machine-building enterprises.

The Company develops technical conditions, design and technological documentation for all its products. The Company products are certified for their correspondence to the requirements of standards and to quality requirements imposed on commercial products. The Company obtained patents for its developments that are unrivaled throughout Russia. The company obtained patents, including four design solutions recognized as an invention.

The company has a highly efficient system of product quality control, works quality control Department, performing incoming material control, process control and control of finished products inspection.



OUR PARTNERS



CERTIFICATES AND PATENTS



Section 1 THREAD PROTECTORS

The main task of thread protectors is to protect the threads during storage, transportation and loading and handling works.

Thread protectors (cap and pipe nipple) made of polyethylene and with a steel shell to protect the threads of casing and tubing and couplings to them, the quality levels of PSL-1, PSL-2, and PSL-3. The thread protectors are produced according to TU, GOST and API Spec.5CT.

Production of polymer products on modern injection-molding machines allows making parts of any category of difficulty having weight up to 6 kg and diameter up to 530 mm inclusive.

The products are painted with powder paint by way of tribostatic spraying which is a waste-free and environmentally safe technology of making polymeric coatings with high protective and decorative properties.

Painting of products is made by powder paint by the method of tribostatic spraying, which is a waste-free and environmentally friendly technology for obtaining polymer coatings with high protective and decorative properties.

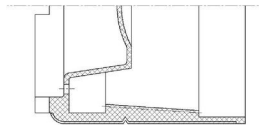
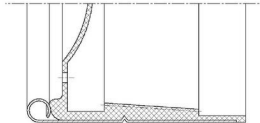
The use of CNC machines makes it possible to unify the production of blanks and ensures the production of high-precision threads of the required profile.



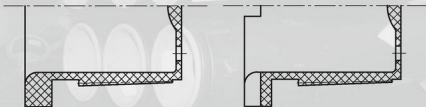
Polymerprom LLC manufactures outside polymeric thread protectors (caps) and internal thread protectors (nipples) without rings, with steel rings of open and closed types which are designed for protection of machined pipe and coupling surfaces against damage during standard handling works and transportation, against ingress of dust and moisture onto threads during transportation and storage within the range of temperatures of -46°C to $+66^{\circ}\text{C}$. At the request of the customer, (under a separate contracts) it is possible to reach agreements on different operational temperatures.

The protector structures and materials correspond to the requirements of API 5CT/ISO 11960 (Item 12.2, Appendix I). Outside protectors cover thread along its full length while internal protectors cover equivalent full length of internal pipe thread.

Thread protectors for casing and tubing pipes and couplings there to are produced in accordance with Technical conditions TU 2291-003-79238319-06 of various issues and have 37 types of general purpose threads (BUTTRESS (OTTM), BS, LC, STC, OG-1V and others), Premium class (TMK GF, TMK PF, TMK FMC and others), premium thread connections ULTRA FJ, ULTRA SF, ULTRA FX and others according to customers' requests.



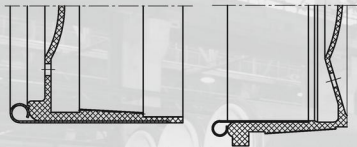
*Protectors (cap and nipple) for protection of threaded connections
for general purpose and Premium class tubing pipes.*



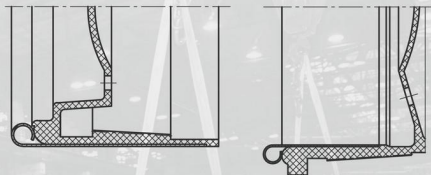
Thread protectors (cap and nipple) produced according to
TU 2291-003-79238319-06 from polyethylene and with steel rings
for protection of threads in casing, tubing pipes and couplings thereto, quality level
PSL-1, PSL-2 and PSL-3, produced according to **TU, GOST and API Spec.5CT (Issue 9)**



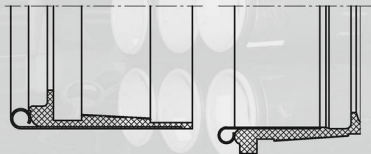
Protectors (cap and nipple) for closed type casing pipes



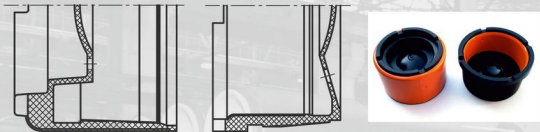
Protectors (cap and nipple) for LIFTABLE type casing pipes



Protectors (cap and nipple) for open type casing pipes



*Protectors (cap and nipple)
for LIFTABLE+CROWN type casing pipes*



*Protectors (cap and nipple)
For CROWN type casing pipes with flat bottom*



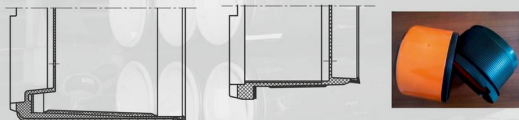
Protectors with sealing elements have been manufactured for protection of threaded connections with «Green Well» polymer coating.

The «Green Well» polymer coating was developed under the TMK order. Implementation of the «Green Well» coating improves air-tightness of threaded connections without use of thread-sealing grease. It minimized time needed for preparing pipes prior to their being lowered into wells thanks to eliminating the stage of thread cleaning. The lubrication-free formulation of the «Green Well» coating has all valid advantages compared to similar developments and allows decreasing overhead expenses of oil and gas operators during production of energy supplies. Another «Green Well» advantage lies in environmental specifications of the technological process which correspond to all requirements of environment protection and ensure safe conditions of product operation. Tubing pipes manufactured by «TMK» JSC with premium threaded connections and the innovative coating are used for making casing strings that were put down oil wells at Vankor Oil Field operated by «Rosneft». Check measurements were taken when putting pipes down the wells. According to the casing results «TMK» and «Rosneft» experts proved advantages of implementation of the «Green Well» lubrication-free coatings for making casing strings. Replacing the classic threaded lubricant with a rigid composite coating with a polymer matrix that has equivalent antifriction, anti-corrosion and anti-corrosion properties did not reduce the density of the column connections, but allowed to reduce the time of collection and descent of the column 3 times.

*Protectors (cap and nipple)
For casing pipes with **Green Well** lubrication-free coating
(with a single seal assembly)*



*Protectors (cap and nipple)
For casing pipes with **Green Well** lubrication-free coating
(with two seal assemblies)*

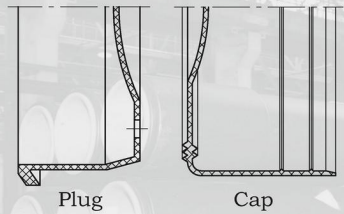


*Protectors (cap and nipple)
For protection of drilling pipes,
manufactured in compliance with **TU, GOST and API Spec 5DP**
TU 2291-004-79238319-07*



Section 2 PROTECTIVE PARTS

Protective parts (cap and nipple) made of polyethylene for protection of the ends of pipes of pipelines, manufactured according to TU, GOST and API Spec 5L
TU 2292-02-70659485-2005



Section 3 PIPE CRADLES

Metal-polymer pipe cradles are designed for packing, storage and transportation of casing, tubing and drill pipes by automobile, railway and water transport according to the specifications of TU 2291-014-79238319-11.

Laminates are made of compositions based on low density polyethylene (HDPE) of grade 10803-020 in accordance with GOST 16337-77, with steel reinforcement and are used in the temperature range from +66°C (150° F) to -46°C (50° F). Pipe cradles are easy and quick to install vertically against each other without any misalignment during subassembly fitting and can be used repeatedly. Banks of pipes can be installed in vertical succession. Overall dimensions of the assemblies ensure the most economical diagrams of pipe stacking into open boxcars.

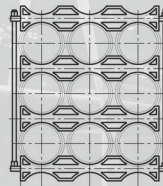


Metal-polymer pipe cradles for packaging, storage and transportation of casing, tubing and drilling pipes manufactured according to TU, GOST and API Spec 5L
TU 2291-014-79238319-11

Pipe cradle, Grade «L»



Pipe cradle, Grade «SH»



Casing pipes are used in the process of construction and operation of oil and gas wells. Casing pipes are connected with each other by means of coupling threads like NU, EUE BUTTRESS and premium threads.

Threaded joints of pipes ensure:

- Construction of columns of wells of complex profile, including in the intervals of curvature;
- Sufficient strength for all kinds of loads and the necessary tightness of pipe string connections;
- Couplings are manufactured in accordance with GOST 632-80, TU 14-3R-29-2007, GOST 13877-96, GOST 31446-2017, API Spec 5CT, as well as taking into account special customer requirements.



Buttress (BS)

BS TYPE CONNECTION

Coupling of casing pipes with BS (Buttress) thread of trapezoidal shape is used for assembly and operation of vertical oil, gas and gas condensate wells.

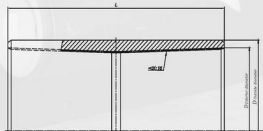
Characteristic property of the said coupling is its air tightness and high resistivity of the threaded connection to tensile loads. Profile of BS thread has an inequilateral trapezium shape with a 5.08 mm pitch and a 1:16 taper angle.

Airtightness of BS connection is attained thanks to high precision of manufacture of conical threaded parts of the coupling and nipple and filling of gaps in the thread connections with special thread-sealing grease.

The present type of thread is made in accordance with TU 14-3P-29-2007.



Pipe Ø size	Outside Ø coupling dia, D _н	Length, Lm	Weight, kg
114	127	225,4	4,6
127	141,3	231,8	5,9
140	153,7	235,0	6,4
146	166	237,0	9,7
168	190	244,5	11,0
178	198	254,5	10,5



Thread for coupling connection with triangular thread (OTTM)

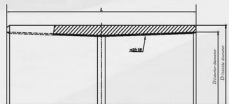
Characteristic property and special feature of the design of casing pipes with this thread connection is high resistivity to tensile workloads.

Profile of this thread has a nonequilibrium trapezium shape with 5.08 mm pitch and 1:16 taper angle.

The stab flank which takes uploads when pipe is dragged down into the coupling and which works in compression, is made at the 10° angle which ensures easy pipe dragging into the coupling and reduces thread jamming. The support end of the profile which takes up tensile load has a 3° angle which reduces the risk of pipe thread disengagement with the coupling thread at the time of a significant stretch and bend. Airtightness is achieved by pressure of thread-sealing grease in structural gaps of the threaded connection profile. At customer's request it is possible to make threaded connections with fluoroplastic gasket rings in the coupling which give an additional air tight joint.

Two types of clutch design are envisaged: a conventional and special clutch with a reduced outer diameter and an enlarged chamfer on the outside diameter. The design of a special sleeve of a smaller outer diameter increases the permeability of the casing in places with a large curvature of the well.

Pipe Ø size	Outside Ø coupling dia, D _н	Length, Lm	Weight, kg
102	110 TY 14-161-163-96	190	3,3
114	127	170	4,0
127	141,3	174	4,8
140	153,7	182	5,3
146	166	182	7,9
168	190	190	9,5
178	198	198	8,6



TRAPEZOIDAL THREAD

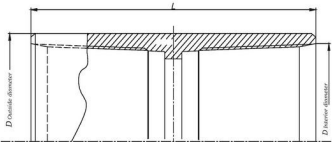
STRUCTURE OF TRAPEZOIDAL THREAD TYPE CONNECTION

Characteristic property of the said connection is increased air tightness and high resistivity of the thread connection to tensile loads. Profile of the trapezoidal thread connection has an inequilateral trapezium shape with a 5.08 mm pitch and a 1:16 taper angle.

Structural integrity (air tightness) of the joint is achieved with the help of special conical surfaces that are mated together with tightness. Packing conical units located behind a threaded part of the joint on the side of a minor diameter of the threaded cone. Precise locking of the tightness in the said joint is made by means of contacting nipple and coupling parts against their thrust faces.



Pipe Ø size	Outside Ø coupling dia. D _m	Length, Lm	Weight, kg
114	127	205	4,8
127	141,3	210	5,8
140	153,7	218	7,0
146	166	218	9,5
168	190	225	11,3
178	198	234	10,6



2: Tubingcouplings

Tubing pipes (TBG)

Tubing pipes are used during operation of oil and gas wells for transportation of liquid and gas inside casing columns, as well as for repair and lifting.

Tubing pipes are connected with each other by means of coupling threaded connections. Threaded couplings provide:

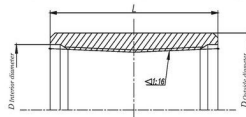
- permeability of columns in wells of complex profile, including in the intervals of intensive curves,
- sufficient strength for all types of workloads and necessary tightness of pipe columns,
- the required wear resistance and maintainability.

Couplings are made according to GOST 633-80, GOST 13877-96, GOST 31446-2017, API Spec 5CT, and also taking into account special requirements of the consumer.

The connection is designed for the use in oil and gas wells. Characteristic property of the said connection with rounded (triangular) thread profile is the fact that thread setting is made along lateral side of the triangular profile. Necessary air tightness of the connection is achieved thanks to packing in thread grease gaps when making up joints mechanically. Thread profile angle is 60°, while the taper angle equals to 1:16.

NU

Pipe Ø size	Outside Ø coupling dia. D _m	Length, Lm	Weight, kg
60	73	110	1,3
73	89	132	2,4
89	108	146	3,6
102	120,6	150	4,5
114	132,1	156	5,1

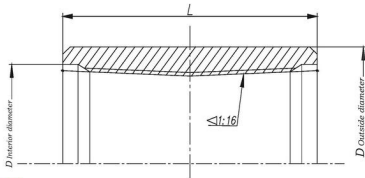


Characteristic property of the said connection with rounded (triangular) thread profile is the fact that thread setting is made along lateral side of the triangular profile. Necessary airtightness of the connection is achieved through packing in thread grease gaps when making up joints mechanically.

When the mechanical makeup is made properly the coupling face moves to the end of the thread runout on a pipe. Angle of the pipe thread profile is 60°, while the taper angle equals to 1:16. The adducting on upset pipe end sallow sin creasing thread tensile strength, due to increase of wall thickness in places of stress concentration. Upset for pipe thread can be made both in standard and in elongated versions.



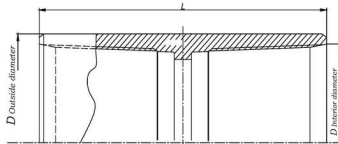
Pipe Ø size	Outside Ø coupling dia. D _{tc}	Length, Lm	Weight, kg
60	77,8	126	1,5
73	93,2	134	2,8
89	112,3	146	4,2
102	127	154	5,0
114	141,3	160	6,3



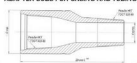
Highly airtight connection is designed for the use in oil and gas wells.

The connection represents a highly airtight coupling connection of tubing pipe with a “metal” type seal. The connection implements trapezoidal thread featuring the following parameters: 60 / 102 mm has thread pitch of 4.233 mm; 114 mm has thread pitch of 5.08 mm. Tiltin gangle along thread bearing face equals to +3° which makes an improved behavior of the threaded connection in tension and a much better behavior in bending. Tilting angle of the facet of the thread profile equals to +10° for 114 mm and +30° for 60 / 102 mm. The present parameter improves conditions of pipe assembly with the coupling when engaging with the first thread turns. The tightness of the connection is provided by tapered sealing surfaces located behind the threads from the side of smaller diameters. In the connection, contact is made at the inner stop faces, which accurately fixes the specified interference tension while securing the connection, which provides an increased service life of the connection for screwing-unscrewing in field conditions.

Pipe Ø size	Outside Ø coupling dia. D _{tc}	Length, Lm	Weight, kg
60	73	135	1,8
73	89	135	2,5
89	108	155	4,1
102	120,6	155	5,1
114	132,1	205	7,4



ADAPTER SUBS FOR CASING AND TUBING PIPES



ADAPTER SUBS FOR CASING AND TUBING PIPES

The Adapter Subs are designed to connect casing and tubing pipes of various diameters, Tooling and underground equipment with threaded link ends

TUBING PIPE ADAPTER SUBS

Designation	Do	D	do	d	d ₁	b	L	l ₀	l ₁	l ₂	l ₃	l ₄	l ₅	Weight, kg	
0114x102	133.6	102.8	118.0	66.8	306.8	6.5	230	8.5	75	85	62	85	115	85	6.2
0114x89	133.6	89.9	118.0	76.0	306.8	6.5	230	8.5	75	85	60	75	115	85	5.9
0114x73	133.6	74.0	118.0	85.0	306.8	6.5	230	8.5	75	85	53	70	115	80	5.7
0102x89	122.2	89.9	103.5	76.0	303.5	6.5	220	8.5	70	80	60	75	105	85	5.4
0102x73	122.2	74.0	103.5	85.0	303.5	6.5	220	8.5	70	80	53	70	105	80	5.2
089x73	156.0	74.0	90.6	83.0	82.5	6.5	200	8.0	68	78	53	70	100	80	4.0
089x60	156.0	61.3	90.6	93.3	82.5	6.5	200	8.0	68	78	42	60	100	70	3.7
073x60	90.0	61.3	74.7	55.3	66.0	6.5	180	8.0	66	76	42	60	95	70	2.9
073x48	90.0	49.1	74.7	45.3	66.0	6.5	180	8.0	66	76	35	55	95	60	2.8
060x48	74.0	49.1	62.0	45.3	54.0	5.0	170	8.0	55	65	35	50	90	60	2.1
060x42	74.0	43.0	62.0	35.2	54.0	5.0	170	8.0	55	65	32	45	90	55	1.6
048x42	57	43.0	50.0	35.2	42	2.5	165	8.0	45	55	32	45	90	55	1.2
048x32	57	34.4	50.0	26.4	42	2.5	165	8.0	45	55	29	45	90	55	1.2

ROD COUPLINGS



Rod couplings designed for transmission of motion from a ground drive to a well oil rod pump consisting of pump rod columns. POLIMERPROM LLC manufactures the present coupling of reduced and increased diameters according to standards GOST 13 877-96 and API Spec. 11B.

In 2018 LLC POLIMERPROM started the production of couplings for sucker rods with polymeric outer coating. Special geometric shape of the coating is designed to create a "scraper" effect that reduces wear during mechanical contact between the coupling and the body of the tubing.

POLIMERPROM LLC developed and patented a protective zinc coating for couplings according to so called : "white technology".

TDZC (Thermo diffusion Zinc Coating) is an optimum choice of a protective coating for oil-and-gas type pipes. Improved operational properties compared to the phosphate method or plating are accounted for zinc atom diffusion into steel matrix and formation of iron and zinc alloy on the surface of products with complex phase structure. High micro-hardness that is equal to 3360-5250 MPa (compare hardness of 150-250 MPa with the phosphate coating) gives efficient operation in corrosive and erosive environment.

The thermo diffusion zinc coating on couplings of TBG pipes of strength group D, K, E, P 110, L 80, N 80, C 95, L 80, Cr13, Cr26 passed a series of tests that were as close to realistic operational conditions as possible. Particularly, tests were performed in hydrogen sulfide containing corrosive environment with subsequent application of pressure P=30 MPa. Life tests of the threaded connection for making up and uncoupling were performed with further control of dimensions, integrity, coating thickness and airtightness. The threaded connection with nominal 73 mm of strength group K successfully passed 100 cycles of making up and uncoupling tests with insignificant decrease of the coating thickness. The connections were also subject to elongation test till complete destruction of the threaded connection with the purpose of determining deformation behavior of the connection after the last makeup and uncoupling cycle. Mechanical properties of the couplings of 73 mm, strength group E were analyzed after thermo diffusion application of the zinc coating which showed increase of ultimate tensile strength value (strength limit, kgf/mm²) by 18%, of yield strength (kgf/mm²) by 10% and offset elongation (%) by 30%.

Therefore, test of the thermodiffusion coating of TBG couplings in conditions that were as close to operational conditions as possible showed high efficiency which manifold exceeded requirements of API 5CT, API 5B and GOST 13877-96, GOST 31446-2017. Products employed under conditions of hostile environment and pressure include pump rods and couplings thereto which suffer cyclic fluctuating and partially reversal loads. Thanks to the thermo diffusion zinc coating lifetime of the said products increases by more than 40%.

POLIMERPROM LLC offers couplings for Casing and tubing pipes, rod couplings with improved characteristics at price which does not exceed cost of couplings with any other type of coating.