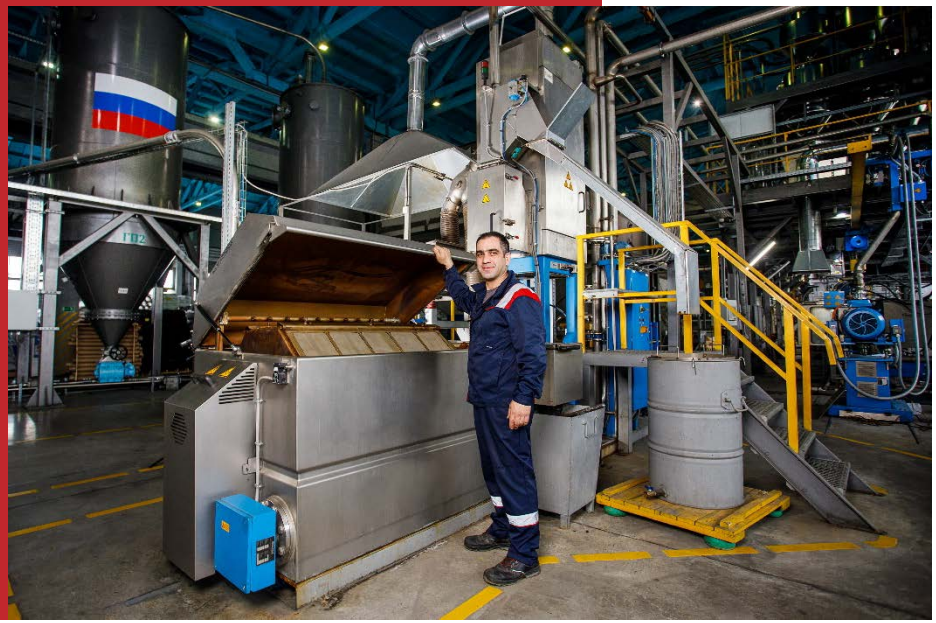
Our formula is your success

Skolkovo

METACLAY

PRODUCT CATALOG



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COMPANY INTRODUCTION

METACLAY JSC is a Russian manufacturer of innovative polymer compositions based on nanosilicates, located in Karachev, Bryansk region.
Polymer compounds of the enterprise are used in various industries :

- pipe
- cable
- construction

Our products successfully compete with foreign and domestic counterparts in the markets of compounds for sheathing and insulation of cable cores, materials for anticorrosion coating of metal products and insulation repair, fire-retardant materials, additives for the production of building materials and organomodifiers for polymers.

Our partners are: domestic leading companies in the production of metal pipes, the largest cable plants of the Russian Federation and EurAsEC, processers of polymer materials and developing metalworking companies.

SK Resident

Subsidiary Metaclay Research and Development is a research and technology center and a resident of the Skolkovo Innovation Center
CUC Laboratory is equipped with a set of laboratory machines and instruments.
There are three specialized units here. Their joint work provides an integrated approach on matter of:

- engineering of new polymeric materials,
- research of the properties of existing samples,
- production of pilot lots.

The quality of works is confirmed by the certificate of GOST ISO /IEC 17025:2017 (GOST ISO/IEC 17025-2019).

CERTIFICATION

METACLAY products meet the requirements of:

- Gazprom PJSC (Gazprom VNIIGAZ LLC, INTERGAZSERT VCS)
- Transneft JSC (NII Transneft LLC),
- TMK PJSC (RosNITI JSC)

METACLAY products are voluntarily certified at the institutes:

- ANO NANOSERTIFICA
- Novye tekhnologii kachestva LLC
- Eko-Sert LLC
- SZRC TEST LLC

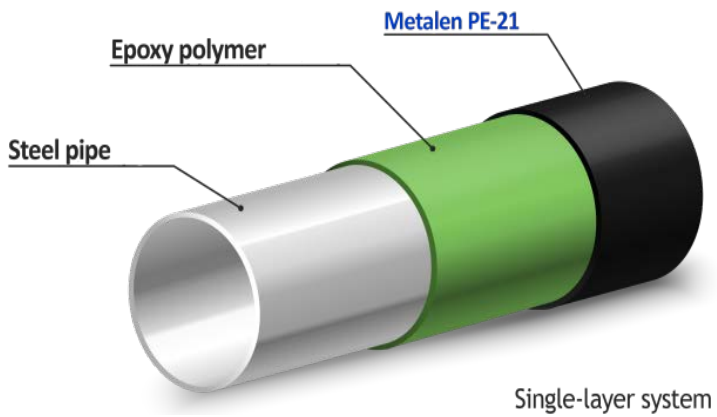
We also have DIN, DNV certificates and certificates according to RoHS and Reach directives.

The quality management system of the Company is certified for compliance with the requirements of ISO 9001:2015 (GOST R ISO 9001-2015)

METALEN PE-21

Monolayer anti-corrosion coating system for gas and oil pipelines

TU 2211-021-63341682-2015



Application

Innovative monolayer coating system protects the insulation of steel pipes from aggressive environmental influences.

Advantages

- Requires less application process steps
- No coating defects at pipe end sections
- Extends the life of gas pipelines up to 80 years
- Provides resistance to UV radiation and temperatures in the range from + 60 ° C to-60 ° C.

Description

It is a polymer composite material with implementing of the functional additives.

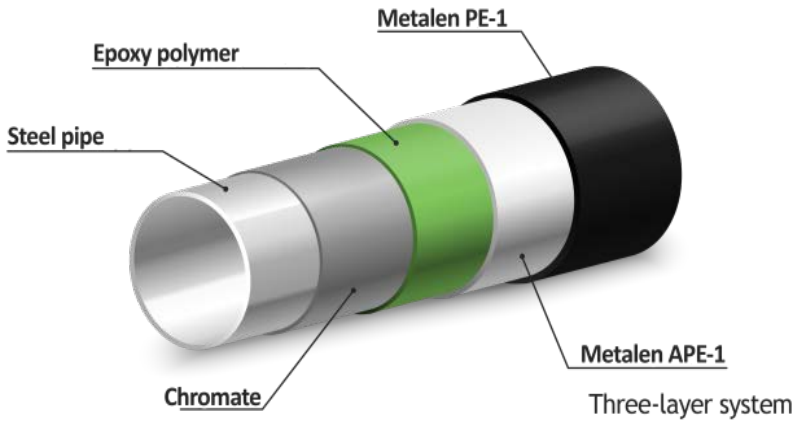
This technology is used for the first time in the world on industrial scale and replaces a three-layer coating system.

Metalen PE-21 system has a KTH certificate for compliance with the requirements of:
DIN EN ISO 21809-1, class B:2014
DIN 30670, class S, v:2012
DNV RP-F106: May 2011.

METALEN PE-1, METALEN APE-1

Three-layer anti-corrosion coating system for gas and oil pipelines

TU 2211-021-63341682-2015



Application

For the outer coating layer in pipe insulation by transverse and circular (longitudinal) extrusion.

Advantages

- High application rates
- Low screw drive loads during extrusion
- Achieving high productivity
- No coating defects at pipe end sections

Description

METALEN PE-1 is black high-density polyethylene for steel pipes insulation.
METALEN APE-1 is adhesive based on functional activated polyethylene for steel pipes insulation.
These materials have high strength, heating stability and unique elasticity at temperatures below freezing.
METALEN APE-1 – METALEN PE-1 coating system has a KTH certificate for compliance with the requirements of :
DIN EN ISO 21809-1, class B:2018
DIN 30670, class S, v:2012
DNV RP-F106: September 2019.

METAAP

Fire-retardant composition

Application

It is a ready-made composition for creating an internal noncombustible layer of the multilayer pipe. The composition provides fire safety properties of the product in accordance with GOST R IEC 61386-2014.

Advantages

- Increased heat resistance
- Resistance to burning with the category PV-0
- Cost-effective processing solution

Description

Thermoplastic composite material based on polyethylene, containing in its composition a mixture of flame retardants.
METAAP is used as a material for the production of an internal self-extinguishing layer in multilayer pipes, which itself is a cable duct for laying cables in the ground.

Concentrate AP-80

Flame retardant modifier

TU 20.16.10-064-63341682-2019

Application

It is a polymer additive in the production of finished products with fire safety categories. Recommended for the production of SIW.

Advantages

- Combustion resistance of PV-0
- High thermal stability during processing
- Cost-effective processing solution

Description

Thermoplastic flame retardant modifier for polyethylene.
Concentrate of a mixture of natural-colored halogen-containing flame retardants on a polyethylene base.

METALENTA

Fiberglass unidirectional reinforced tape

TU 22.21.42-057-63341682-2019

Application

Reinforcement of honeycomb panels and polyethylene pipes

Advantages

- Reinforcement of the structure.
- Durability and long-lasting wear.
- Reducing the weight of the structure

Description

METALENTA is a composite material based on modified polyethylene, unidirectionally reinforced with glass roving, and a complex of additives that provides the material with increased resistance to thermal oxidative degradation during processing and operation.

Adhesive component of the tape is a modified polymer («Metalen APE-11» manufactured by METACLAY JSC) that provides improved properties and increased physical and mechanical characteristics.

“KOLCHUGA” FPC

Fiberglass protective coating

TU 22.21.42-056-63341682-2018

Application

For pipelines insulation coating protection from mechanical stress during construction, reconstruction, repair and operation.

Advantages

- Remains intact after a 5 kJ strike.
- Resistant to longitudinal cutting.
- Has a reliable adhesion to the insulation coating

Description

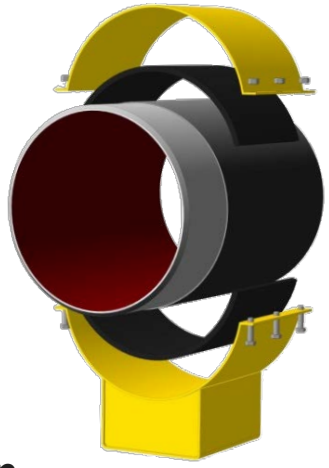
KOLCHUGA FPC is applied to a steel pipe (diameter from 219 to 1420 mm) with an insulating coating.
The coating consists of several layers of METALENTA interconnected by a polymer thermoplastic binder.
METALENTA is wound at certain angles to the pipe axis by spiral winding. The finished coating eliminates the problem of mechanical stress to the pipelines insulation coating when laying by trenchless, trenching and above-ground laying methods.
Exists in two options:
usual «O» or reinforced «U».
Pipes coated with KOLCHUGA FPC are supplied with a kit for welded joint protection.

SUPPORTS «LITOMET»

Polyolefin electrical insulating pads

TU 1469-025-63341682-2017

included in PJSC Gazprom's Inventory (of materials and equipment)



Application

Protection of pipelines, reservoirs and tanks from the ground currents harmful exposure, cathodic current loss reduction, galvanic and crevice corrosion prevention, as well as protection of anticorrosion coatings from mechanical stress.

Advantages

- Heat resistance of products is up to 110 ° C.
- Can be used in the ambient temperature range from +60°C to -60°C.

Description

Polymer pad designed to eliminate any electrical contact between steel above-ground pipelines and metal supports and structures, as well as to protect the insulating coating from mechanical damage.

Products are mounted on supports of various pipelines types in all climatic zones.

Type of climatic modification: boreal (moderate and cold macroclimatic areas combination) (including the territory of Ukraine and Russia) and frigid climates (cold macroclimatic area) placement category 1 in accordance with GOST 15150-69.

COATMET AFM PE-210-RAL

Powder polyethylene coating

TU 20.16.10-044-63341682-2017

Application

For applying a protective coating to various products, including products with surfaces of complex configuration.

Advantages

- Provides reliable protection for the structure
- Increases the service life.
- Grinding and sieving powder in a narrow particle size range

Description

Powder based on polyethylene and a complex of modifying additives that improve the technological and operational properties of the product surface.

It has high adhesive properties, intended to create an external and internal anti-corrosion protective coating for steel pipes, steel fittings of main pipelines (butt joints, bends, fittings, bypasses, adapters) used in the construction of gas and oil pipelines, tank containers, bunkers, tanks for various purposes, including structures (fences, bridges, foundations, walls, pools), during construction and operation of offshore structures and ships.

Application methods: electrostatic, gas-flame, immersion in a fluidized bed.

Coatmet AFM PE-210-RAL has TNV, RoHS and Reach Certificates.

COATMET AFM PE-035-RAL

Powder polyethylene coating

TU 20.16.10-044-63341682-2017

Application

For applying coating on various products, such as: weld meshes for racks, fences, cold rooms, , fence supports and cable trays, as well as small-sized electronic products to create an insulating layer.

Advantages

- Suitable for painting of products operating in severe climatic conditions.
- Has record frost resistance up to -60˚C.
- The surface is easy to clean and does not retain dirt, as it is poorly wetted by water

Description

Powder based on a thermoplastic polymer with grafted polar groups. Painting with this material is carried out by immersion in a fluidized bed and electrostatic method.
This is an environmentally friendly material that does not contain and does not emit harmful components: phenols, isocyanates, heavy metals and other components hazardous to health. It does not contain solvents, as well as lead, cadmium, mercury and chromium (IV) as ingredients, therefore it is not classified as a dangerous cargo for land, sea and air transport. The material has permission to contact with food and drinking water. Creates soft tactile sensations. It has high mechanical, electrical insulation and chemical parameters.

METALEN MS-1, METALEN MS-2

Hot-melt fillers for pipe coating repair

TU 22.29.29-051-63341682-2018

Application

For repair of factory polyethylene coating. Applied by melting using a propane burner, filling the structure of the defect in the damaged area and providing the protective properties restoration.

Advantages

- Excellent compatibility with factory coating.
- Combination of highest levels of adhesion and strength.
- Easy to apply due to high fluidity.
- Every rod has internal and external threads, which allows to build up the system
- during operation and use the material without residue.

Description

Hot melt fillers consist of a polyolefin mixture, a complex of adhesive additives and grafted polymers. Products contain a complex of stabilizers that provide high thermal stability during use, as well as high resistance to aggressive environmental factors and oxidative degradation.

PLUG BIO

For pipes transportation and storage

TU 22.29.29-039-63341682-2017

Application

For pipes, fittings and valves of various diameters: 530-1420 mm for main pipelines and 67-426 mm for site facilities pipelines.

Advantages

- Due to biomaterial, the product decomposes in up to 10 years.
- No need to disposal.
- Reduces the burden on nature, contributing to the conservation of the environment

Description

METACLAY JSC set up the production of BIO plugs to protect pipes, fittings and valves from the penetration of dirt, moisture and mechanical stress to the chamfer during transportation and storage.

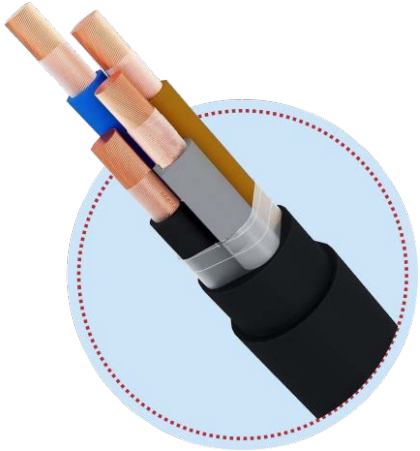
Under the exposure of UV radiation and environmental factors, the BIO plug material is destroyed at the molecular level and turns into powder. Plugs decompose in the soil under the environmental factors exposure without harming the ecosystem and do not require disposal.

The decomposition period is up to 10 years and can be controlled.

METALEN K-21
METALEN K-31(HERP. High modulus)

Silane-crosslinkable compositions based on EPR

TU 20.17.10-054-63341682-2018



Application

For marine, mine and oil immersion cables production.

Advantages

- Ability to be processed on any extruder: a polyolefin alternative to rubber.
- Resistance to low temperatures during laying and operation
- Thermal deformation test at > 250 Hz
- High heat stability
- Import substitution with increased profitability

Description

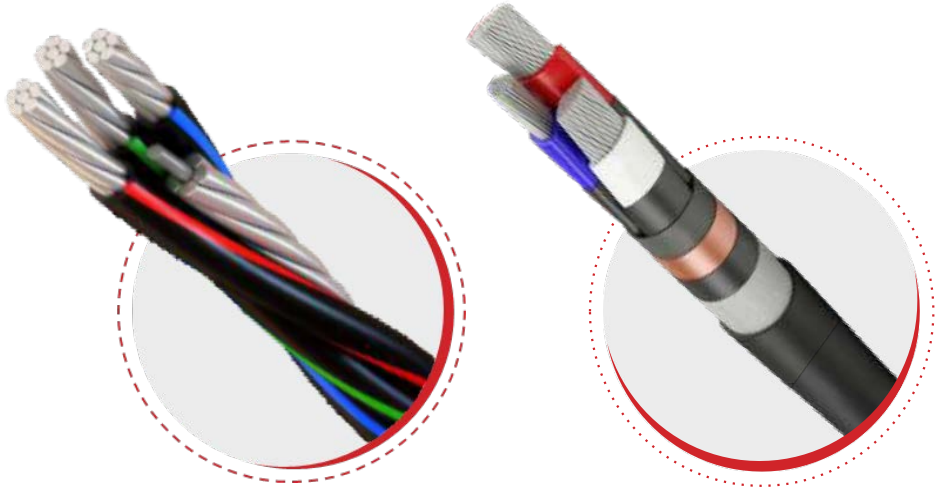
Ethylene propylene silane cross-linkable composition is a composition which has high quality characteristics and is used in the production of special purpose cables.

The product has a high-tech characteristics also in direct processing.

Compound 0-11
Compound 0-12

Silane-crosslinkable compositions

TU 2243-001-63341682-2016



Application

For insulating wires of self-supporting type (Compound 0-11/Catalyst 0-51)
For insulating low-voltage power cables.(Compound 0-12/Catalyst 0-51).

Advantages

- Ability for high-tech processing at low and high speeds.
- High resistance to elevated temperatures during operation.
- Ensuring surface quality while applying the composition.
- No waste during processing.

Description

METALEN K 0-11 is a black polyolefin silane-crosslinkable base composition.
METALEN K 0-12 – is an unpainted polyolefin silane-crosslinkable base composition (natural color)
METALEN K 0-11 and METALEN K 0-12 are supplied together with cross-linking catalyst - Compound 0-51.
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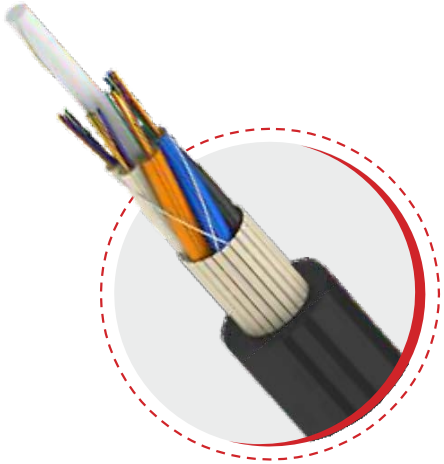
METALEN PE-11K
METALEN PE-13K

Bimodal black-colored polyethylene

TU 2243-028-63341282-2016 with am. №1



Application

The compositions are used as a sheath for medium and high-voltage cables; for sheathing on fiber optic cables.

Advantages

- high thermal aging resistance
- resistance to oxidative degradation
- high thermal stability during processing
- high environmental stress crack resistance
- high impact strength
- high speeds at different cross sections and types of extruders

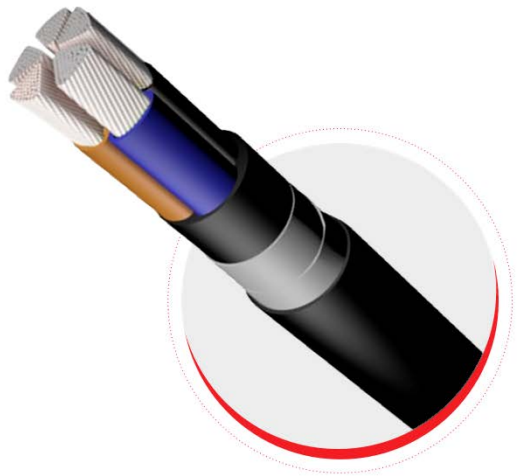
Description

METALEN PE-11K, METALEN PE-13K - Black HDPE-based compounds with high UV resistance, excellent processability, temperature stability during processing.

Polyethylene 153-10K

Black insulation composition

GOST 16336-2013



Application

Used as a sheath in the manufacture of power cables, as well as for the insulation of metal pipes

Advantages

- High resistance to photo-oxidative aging during operation
- Resistance to thermo-oxidative aging during processing and operation
- UV resistance
- High processability
- Cracking resistance is higher than GOST values

Description

Polyethylene 153-10K is a composition based on high pressure polyethylene of black color.
The composition is resistant to thermo-oxidative aging during processing and operation as well as resistant to photo-oxidative aging during operation.
The product is produced in accordance with GOST and meets the approved requirements for mechanical and physical-chemical parameters.

GRAFTED MALEINIZED PRODUCTS

Polyolefin compositions

TU 20.16.10-035-63341682-2017

Application

Used to increase the adhesive properties of polyolefin-based compositions to polar substrates and metal; modification of polyolefin-based compositions with the provision of mineral fillers, flour wood or fiberglass, as a binder between the polymer and filler.

Advantages

- Provide uniform distribution of mineral and other filler.
- Increase the degree of filling with fibers and mineral fillers.
- Improve the compatibility of polymeric materials of various nature.
- Guarantee high adhesion of polymeric materials both among themselves and with other materials.

Description

Modifiers and binders have a grafted reactive compound having active functional groups providing a strong bond of the components of the material.

Maleic Anhydride (MA) is used as such a reactive compound in a number of modifiers.

METALEN SKP series

concentrate of carbon black based on LDPE

TU 2243-022-63341682-2015

Application

Designed for dyeing and light stabilization of products based on polyolefins obtained by extrusion: pipes, hoses, sheets, tapes, including those having direct contact with food.

Advantages

- Provides resistance to ultraviolet rays with a low percentage of input into the polymer base, from 1% to 5%
- Particularly suitable for coloring plastic films, sheets and injection molded products, which require perfectly uniform dispersion of carbon black.

Description

METALEN SKP is a composition based on black LDPE with filling of high–quality soot (black pigment), from 30% to 50%, which is evenly distributed throughout the polymer. The pigment helps to obtain the specified physical and mechanical characteristics of the finished product.

Depending on the required opacity of the finished product and its characteristics, it is recommended to add METALEN SKP in an amount from 1% to 3% for injection molding and blowing and up to 5% for the manufacture of films.

METAFLAME EP

Flame retardant material

TU 20.16.10-076-63341682-2020

included in PJSC Gazprom's Inventory (of materials and equipment)

Application

Designed to protect the load-bearing metal structures of industrial and civil facilities in cellulose and hydrocarbon fires with fire protection efficiency of 45 to 120 min.

Advantages

- Increased weather resistance in the conditions of the marine climate and the climate of the Extreme North (boreal climate1, frigid climate1, C5-I, C5-M)
- Chemically resistant in a highly aggressive environment
- The use of the flame retardant material METAFLAME EP allows to perform fire protection works with high rate due to the high "wet" layer during one working operation, using standard application equipment.

Description

Flame-retardant material "METAFLAME EP" is a two-component epoxy product with high dry residue.

The strength characteristics of the METAFLAME EP flame-retardant material make it possible to apply the material not only at the construction site, but also at the factory shop before installation, followed by safe for coating transportation of painted metal structures to the facilities, which is especially important in conditions when northern and sparsely populated areas with a short period of painting work are being developed.

MONAMET 1O1/ 1O4/ 1H1

Organoclays and modifiers

TU 2169-018-63341682-2015 with am. №1
TU 2164-017-63341682-2014 with am. №1
TU 2169-011-63341682-2012 with am. №1

Application

They can be used as functional additives in various polymers, some oligomers and low-molar substances as thickeners, as well as for the preparation of water-based drilling fluids.

Advantages

- Improves compatibility with rubbers
- Increases abrasive resistance, tensile strength, melt stability during extrusion
- Provides good particle suspension, prevents formation of sediments of pigments and fillers

Description

Chemically modified montmorillonites in powder form.
MONAMET 1O1 nanosilicate is an organophilic clay with a special modifier that improves the compatibility of nanoclay with substances whose molecules contain extended linear fragments of -C-C - bonds.
MONAMET 1O4 nanosilicate has a special modifier that improves compatibility of nanoclay with substances whose molecules contain both aliphatic chains and aromatic functional groups.
MONAMET 1H1 nanosilicate is a hydrophilic nanoclay treated with a special modifier with polar functional groups.

CONTACTS

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