

Thermal Insulation and Sealing Cords

IZOPACK

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Introduction

About us

Company IZOLA was founded in 1998. The main business of company is manufacturing asbestos-free heat-insulating and packing materials.

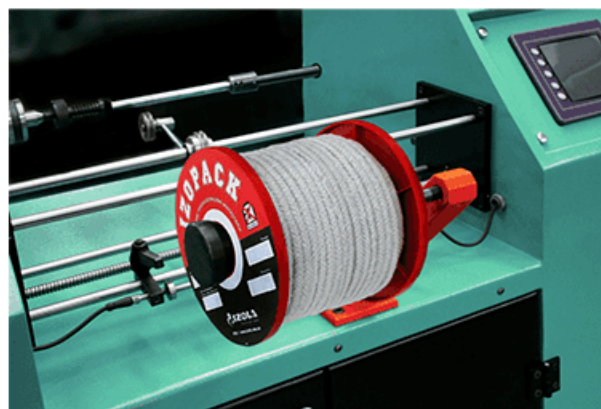
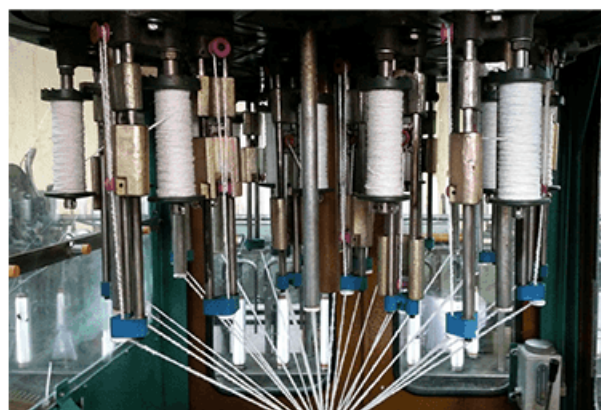
Heat-insulating and fireproof sealing cords are one of the main businesses of the company. IZOPACK cords don't concede to products of world's famous manufactures and even exceeds them with wide assortment. Most of our products are exclusive for heat-insulating and fireproof materials market.

Technologies

Flexibility of production and qualified personnel allow us to design and produce substandard cords in short terms, and to provide laboratory tests in specified temperature conditions, if needed.

Cooperation with consumers

One of the main activities is solving technological problems in industrial insulating area. We understand that solving all tasks with 3-4 kinds of cords is unreal. The proof is our wide IZOPACK production assortment, which constantly updates. It was formed in the process of close cooperation with customers and individual approach to all of our customers during years. Satisfying our customers is our main goal.



Our Quality

All cords IZOPACK are produced in conformity with technical conditions of enterprise. Company is certified by ISO 9001: 2008.



Through-weaving cords

Through-weaving cords

Insulating cords of this group are manufactured using modern equipment by a through-weaving (diagonal-cross) method. Durable and flexible IZOPACK cords are designed for heat-insulating and sealing fixed connections and as elements of heat-insulating systems. Cords can be covered with addition layer of abrasive-proof fiber and antifriction impregnation, if needed to seal movable units.

These cords are made of round, squared and rectangular cut forms with sizes ranging from 4 to 120 mm.

The advantage of cords of diagonal-cross braiding

- high temperature for using (to +1250 °C)
- thermal shock durability
- low thermal conductivity
- high strength
- wide range of forms and sizes
- asbestos-free
- long useful lifetime
- easy mounting and dismantling

Structure of diagonal-cross cords



2-diagonals braiding



3-diagonals braiding



4-diagonals braiding



rectangular braiding



round braiding



Through-weaving cords

IZOPACK-35

Description

IZOPACK – 35 consists of aramid fiber and type "E" glass roving.

Features

Application temperature: long/short-term, °C.....	+300 / +500
Thermal conductivity at +20 °C, W/mK.....	0,20
Loss on ignition, %.....	-
Section sizes, mm.....	from 4 to 80
Section forms.....	round, square, rectangular



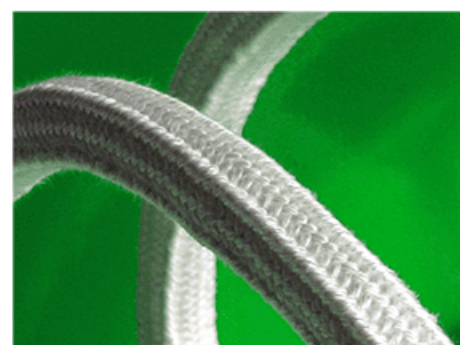
IZOPACK-50

Description

IZOPACK – 50 consists of type "E" fiberglass roving.

Features

Application temperature: long/short-term, °C.....	+560 / +700
Thermal conductivity at +600 °C, W/mK.....	0,22
Loss on ignition, %.....	1,5
Section sizes, mm.....	from 4 to 80
Section forms.....	round, square, rectangular



IZOPACK-70

Description

IZOPACK – 70 consists of basalt fiber.

Features

Application temperature: long/short-term, °C.....	+700 / +900
Thermal conductivity at +600 °C, W/mK.....	0,24
Loss on ignition, %.....	2
Section sizes, mm.....	from 4 to 80
Section forms.....	round, square, rectangular



IZOPACK-75

Description

IZOPACK – 75 consists of basalt fiber like a braid and fiberglass fiber type "E" like a core.

Features

Application temperature: long/short-term, °C.....	+660 / +900
Thermal conductivity at +600 °C, W/mK.....	0,24
Loss on ignition, %.....	2
Section sizes, mm.....	from 8 to 80
Section forms.....	round, square, rectangular



Through-weaving cords

IZOPACK-90

Description

IZOPACK – 90 consists of ceramic fiber, reinforced by glass fiber.

Features

Application temperature: long/short-term, °C.....	+880 / +1000
Thermal conductivity at +600 °C, W/mK.....	0,22
Loss on ignition, %.....	15
Section sizes, mm.....	from 6 to 80
Section forms.....	round, square, rectangular



IZOPACK-120

Description

IZOPACK – 120 consists of ceramic fiber and forced by metallic thread.

Features

Application temperature: long/short-term, °C.....	+880 / +1200
Thermal conductivity at +600 °C, W/mK.....	0,26
Loss on ignition, %.....	17
Section sizes, mm.....	from 6 to 80
Section forms.....	round, square, rectangular



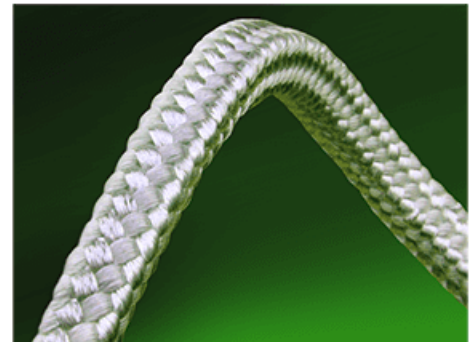
IZOPACK-130

Description

IZOPACK – 130 consist of high-silica fiber.

Features

Application temperature: long/short-term, °C.....	+1100 / +1350
Thermal conductivity at +600 °C, W/mK.....	0,22
Loss on ignition, %.....	1
Section sizes, mm.....	from 4 to 80
Section forms.....	round, square, rectangular



To get additional properties cords can be treated in different ways: inside braiding of carbon fiber, or covering by graphite suspension, makes cord more resistant to abrasion, external covering by silicone guarantees better vapor resistance, and impregnation by heat-resistant polyurethane upgrades sealing properties.

In the picture on the left-side there is the cord IZOPACK-120Coated with graphite.

Soft Cords in Tight Outside Braid

Soft Cords In Tight Braid

Soft cords consist of a soft core and tight braiding. Cord's high strength, softness and flexibility allow to use them as a sealing material for high-temperature units and elements of insulated systems. They're cheaper than diagonal-cross braiding cords, which allows to use them as an alternative.

It is possible to produce different section forms: round, square, oval, and rectangular.

Advantages of soft cords in tight braid

- High using temperature (up to +1250 °C)
- low thermal conductivity
- easy montage
- asbestos-free
- wide range of forms
- low price
- suitable packing

Structure of Soft Cords in Tight Braid



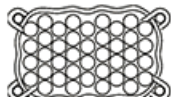
round section



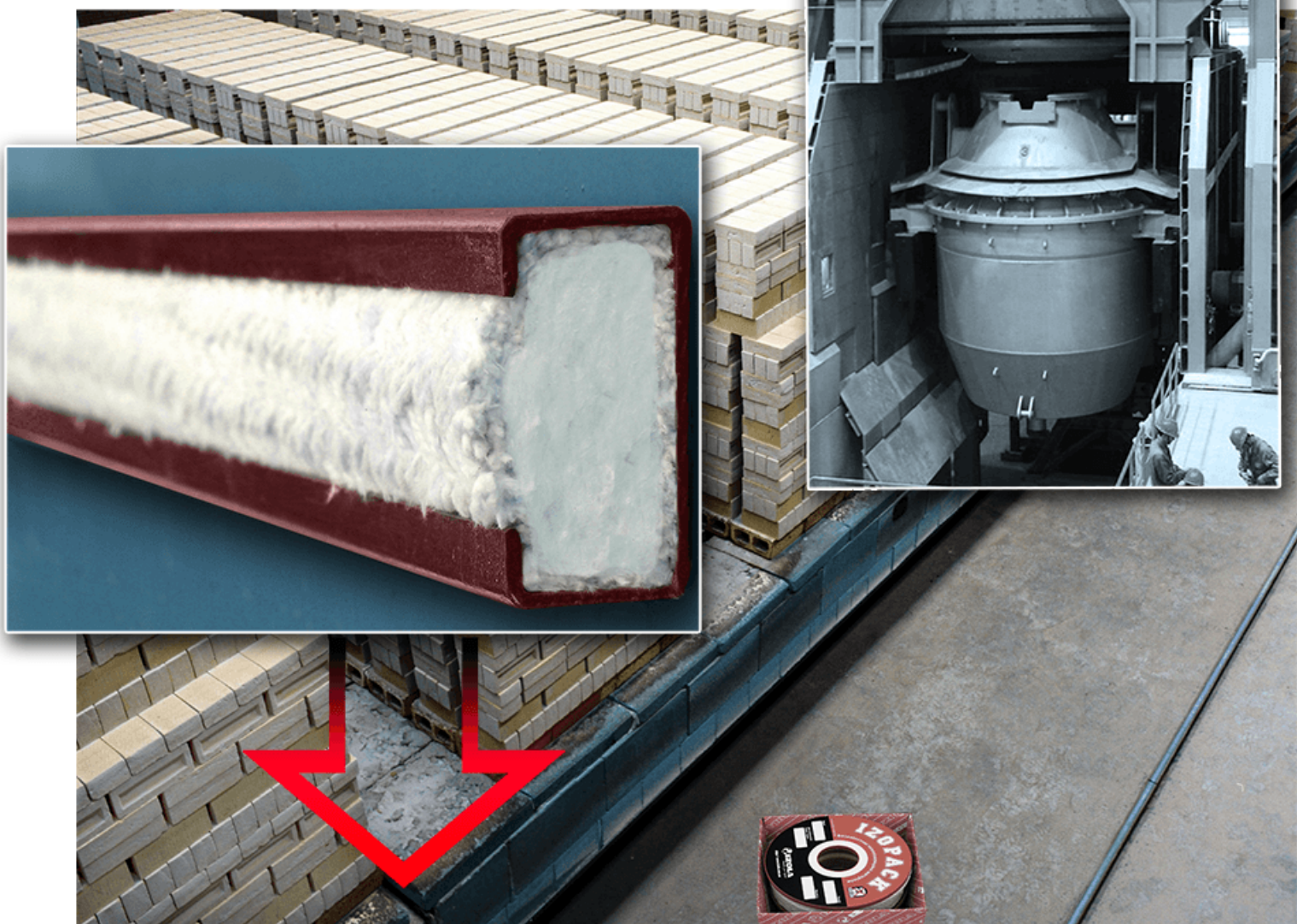
square section



oval section



rectangular section



Soft Cords in Tight Outside Braid

IZOPACK-52

Description

IZOPACK – 52 consists of ceramic fiber as a core, and glass fiber roving as a tight braiding.

Features

Application temperature: long/short-term, °C.....+550 / +1000
Thermal conductivity at +600 °C, W/mK.....0,17
Loss on ignition, %.....2
Section sizes, mm.....from 12 to 120
Section forms.....round, square, rectangular



IZOPACK-57

Description

IZOPACK – 57 consists of basalt super-thin fiber as a core and glass fiber roving as a tight braiding.

Features

Application temperature: long/short-term, °C.....+550 / +800
Thermal conductivity at +600 °C, W/mK.....0,16
Loss on ignition, %.....2
Section sizes, mm.....from 12 to 120
Section forms.....round, square, rectangular



IZOPACK-97

Description

IZOPACK – 97 consists of basalt super-thin fiber as a core and ceramic thread, forced with glass fiber roving.

Features

Application temperature: long/short-term, °C.....+700 / +1000
Thermal conductivity at +600 °C, W/mK.....0,15
Loss on ignition, %.....5 - 15
Section sizes, mm.....from 15 to 120
Section forms.....round, square, rectangular



IZOPACK-92

Description

IZOPACK – 92 consists of ceramic wool as a filler and a ceramic thread, reinforced by glass fiber roving.

Features

Application temperature: long/short-term, °C.....+660 / +900
Thermal conductivity at +600 °C, W/mK.....0,15
Loss on ignition, %.....5 - 15
Section sizes, mm.....from 15 to 120
Section forms.....round, square, rectangular

Soft Cords in Tight Outside Braid

IZOPACK-122

Description

IZOPACK – 122 consists of ceramic fiber wool as a filler and a ceramic thread, reinforced by a steel heatproof thread.

Features

Application temperature: long/short-term, °C.....+1100 / +1250
Thermal conductivity at +600 °C, W/mK.....0,16
Loss on ignition, %.....5 - 15
Section sizes, mm.....from 12 to 120
Section forms.....round, square, rectangular



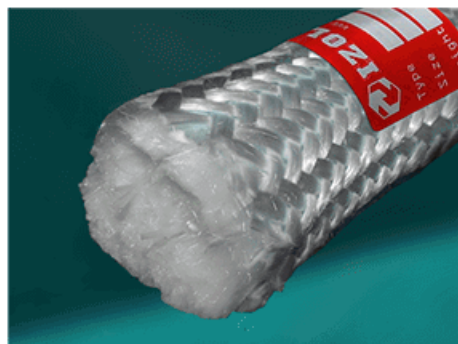
IZOPACK-132

Description

IZOPACK – 132 consists of ceramic fiber wool as a filler and high silica fiber as a tight braiding.

Features

Application temperature: long/short-term, °C.....+1250 / +1350
Thermal conductivity at +600 °C, W/mK.....0,18
Loss on ignition, %.....2
Section sizes, mm.....from 12 to 120
Section forms.....round, square, rectangular



All cords tested for high temperature.

Testing of IZOPACK-92

Soft Cords Without Outside Braid

Soft cords without braid

Cords consist of a soft core and sparse braiding with a big weaving pitch. Softness, flexibility and low price allows to use them in wider and more capacious areas, for example in laying pipelines or civil constructions. The disadvantage of this group is friability and low strength.

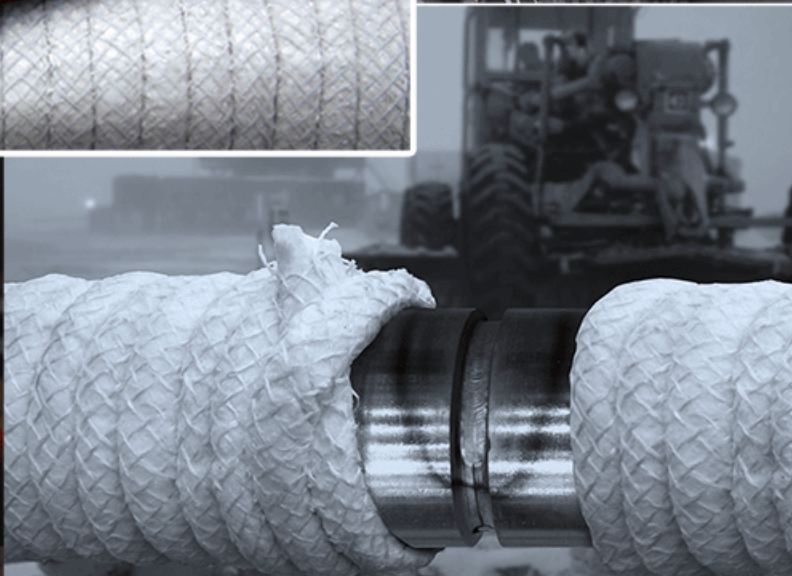
Cords are made of only circle sections and supplied on spools and rolls.

Structure of Soft Cords without Braid



Advantages of soft cords without braid

- High application temperature (up to +1250 °C)
- Low thermal conductivity
- Easy to mount
- Asbestos-free
- Low price



Soft Cords Without Outside Braid

IZOPACK-50M

Description

IZOPACK – 50M consists of ceramic fiber and glass fiber roving as an external forcing grid.

Features

Application temperature: long/short-term, °C.....	+550 / +900
Thermal conductivity at +600 °C, W/mK.....	0,15
Loss on ignition, %.....	2
Section sizes, mm.....	from 10 to 120
Section forms.....	round



IZOPACK-70M

Description

IZOPACK – 70M consists of basalt super-thin fiber and basalt roving as an external forcing grid.

Features

Application temperature: long/short-term, °C.....	+700 / +800
Thermal conductivity at +600 °C, W/mK.....	0,14
Loss on ignition, %.....	2
Section sizes, mm.....	from 10 to 120
Section forms.....	round



IZOPACK-90M

Description

IZOPACK – 90M consists of ceramic as a core fiber and ceramic thread, forced by glass fiber roving as an external forcing grid.

Features

Application temperature: long/short-term, °C.....	+600 / +1000
Thermal conductivity at +600 °C, W/mK.....	0,15
Loss on ignition, %.....	15
Section sizes, mm.....	from 15 to 120
Section forms.....	round



IZOPACK-120M

Description

IZOPACK – 120M consists of ceramic fiber wool as a core and ceramic yarn, forced by heatproof steel thread as an external forcing grid.

Features

Application temperature: long/short-term, °C.....	+1000 / +1200
Thermal conductivity at +600 °C, W/mK.....	0,16
Loss on ignition, %.....	2
Section sizes, mm.....	from 15 to 120
Section forms.....	round



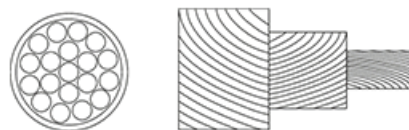
Twisted Cords

Twisted Cords

Cords of this group are produced by winding high-temperature threads. They are soft, flexible, and strong. It's a good alternative to SHON cords. They're easy to mount thanks to unwinding easiness. The disadvantage is friability and low sealing features.

Cords are produced only with round sections, and are delivered on spools.

Structure of Twisted Cords



Advantages of Twisted Cords

- high application temperature
- low thermal conductivity coefficient
- convenient to mount and dismount
- asbestos-free



Twisted Cords

IZOPACK-50T

Description

IZOPACK – 50T consist of E-type glass roving.

Features

Application temperature: long/short-term, °C.....	+660 / +900
Thermal conductivity at +600 °C, W/mK.....	0,22
Loss on ignition, %.....	2
Section sizes, mm.....	from 4 to 20
Section forms.....	round



IZOPACK-90T

Description

IZOPACK – 90T consists of ceramic yarn, forced by a glass thread.

Features

Application temperature: long/short-term, °C.....	+800 / +1000
Thermal conductivity at +600 °C, W/mK.....	0,24
Loss on ignition, %.....	18
Section sizes, mm.....	from 5 to 20
Section forms.....	round



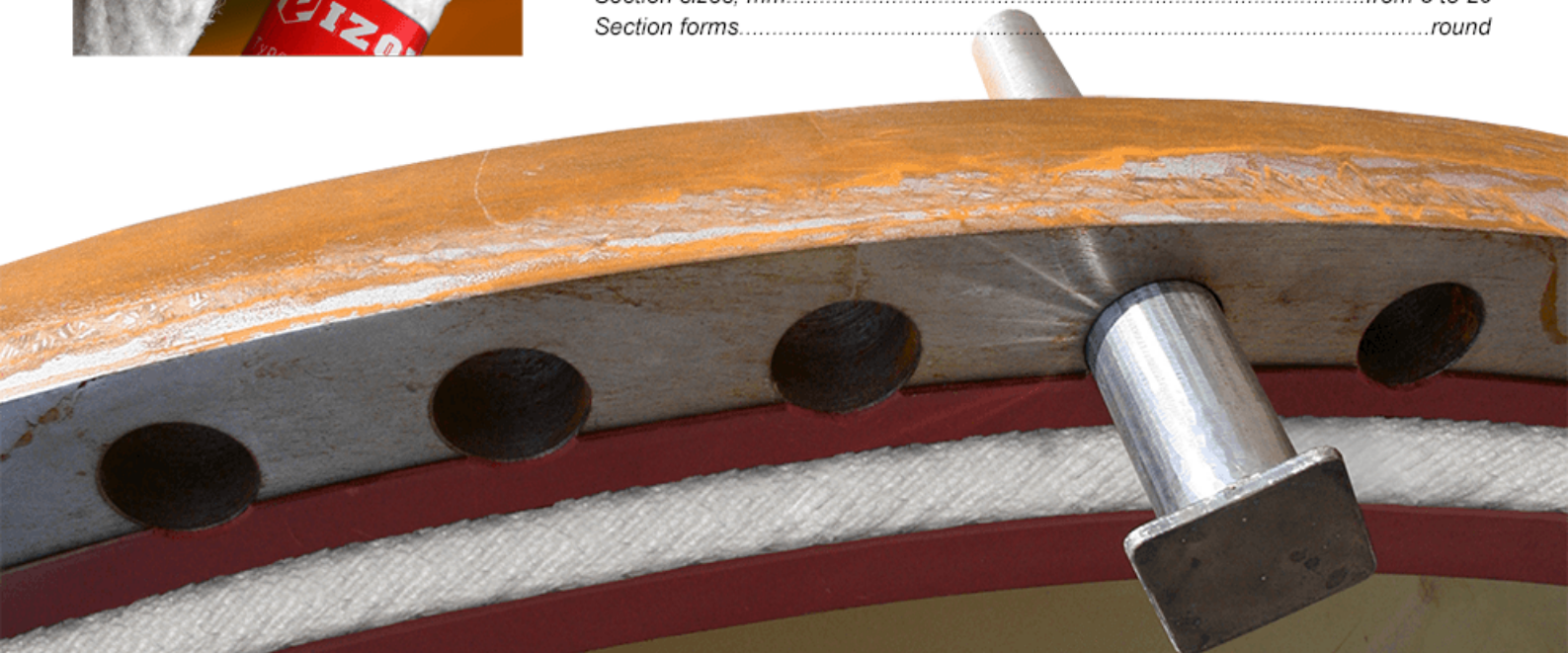
IZOPACK-120T

Description

IZOPACK – 120T consists of ceramic yarn, forced by metallic super alloy thread.

Features

Application temperature: long/short-term, °C.....	+900 / +1250
Thermal conductivity at +600 °C, W/mK.....	0,25
Loss on ignition, %.....	15
Section sizes, mm.....	from 5 to 20
Section forms.....	round



Special Cords

Metal cords IZOPACK-100

Description

IZOPACK 100 consists of high-modulus metallic fiber. It doesn't rust and doesn't get old. Can be welded, which allows mounting them up in places with complicated curved surfaces.

Application area: glass industry, turbine production, metallurgy, energetic.

Features

Application temperature: long/short-term, °C.....+800 / +1300

Thermal conductivity at +600 °C, W/mK..... -

Loss on ignition, %.....1

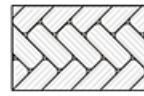
Section forms and sizes

Round, dia. mm.....min 3; max 20

Square, mm.....min 3x3, max 20x20

Rectangular forms are also available.

Structure of IZOPACK-100



2-diagonals braiding



3-diagonals braiding



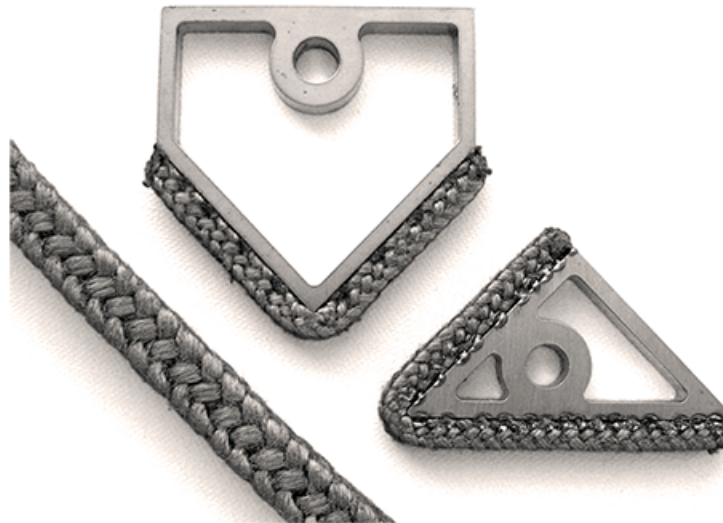
4-diagonals braiding



rectangular braiding

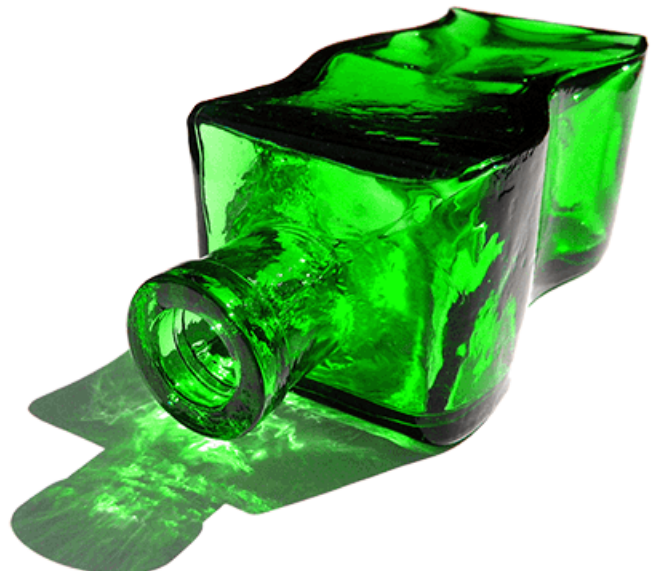


round braiding



IZOPACK-100 cord is in the equipment used for producing glass containers.

Cords don't leave any marks on soft surfaces of sizzling hot glass-ware.



Special Cords

Sealing cords IZOPACK with recovery geometry

Sealing cords IZOPACK-50X; 90X; 120X are designed by IZOLA company's specialists and are exclusive on the packing market. The main purpose is sealing dynamic connections, such as hatches, aperture, doors etc. working in environments with temperatures up to +1200 °C, and sealing spaces between rough surfaces.

The main disadvantage of traditional sealing cords is bad compressibility and restorability which leads to "caking" of sealing and losing sealing features. IZOPACK cords were specially designed to solve these issues.

Comparative table of sealing

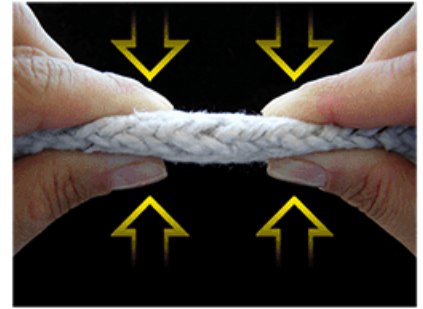
Index	Ordinary IZOPACK-120	IZOPACK-120X
Compressibility	10-15%	65%
Recovery	15%	97%

The shapes of profile are round, square and rectangular.

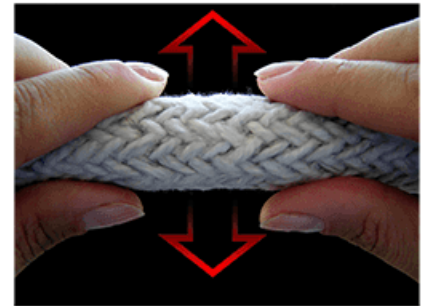
Structure of cord



Before pressing



Pressing



Recovery



Application Examples

Mounting during the pipeline isolation

Cord must be unwound from the spool and cut on sections with length of 5-8 meters. Wrap the end of the cord under the cord's first coil and fix it on the pipe with two coils of galvanized wire with diameter of 1mm or with a fireproof braid. Stretch each coil, and pull them to the pipe and to the next coil by tapping it slightly with a hammer. Fix the second cord's ending on the pipe the same way as the first one. Wrapped cord mustn't rotate around the pipe or have any gaps between the coils. Wrap the cord around the pipe in one or more layers, depending on set isolation thickness. Consider that the cord shrinks by thickness in the range from 3% to 60% during the wrapping.

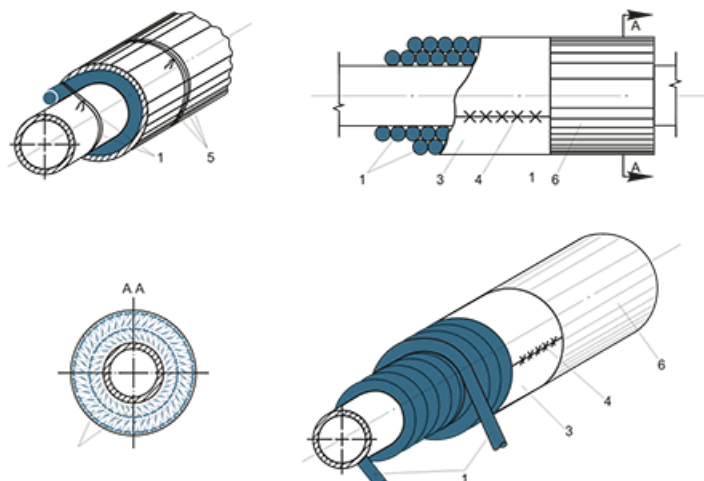
When doing a multilayer isolation, every next layer of coils must cover seams of a previous layer and to be wrapped in the reverse direction.

When using cords with different sections, the first insulation layer is performed with a lowest section cord, as it's the more flexible.

If an insulated pipeline is located in the room, the cord's surface must be sheathed with thermal insulation fabric. Sheathing or walling with stainless steel plates is performed on the open space.

During the isolation sheathing process, cut fabric is put on cord's surface. Longitudinal and transverse fabric edges are bent inside and seam is sheathed with a brass wire (with a diameter of 0,5 mm) or with a fireproof braid.

For isolative works we recommend to use asbestos-free IZOLTEX fabrics. You can purchase them with cords. Our specialists are ready to help you with selection of a material.



1 - cord IZOPACK; 2 - wire mount; 3 - thermal insulation fabric; 4 - yarns; 5 - mounting of jacket by wire or clamps; 6 - outer jacket



Welding on pipelines

During building and repairing the pipelines, big attention is paid to the welding quality. It is recommended to isolate pipes to escape big temperature difference during the welding process. Temperature difference usually appears in the welding seam area, and may cause micro cracks, which leads to serious consequences during the process of object's exploitation.

The asbestos fabric is usually used for these kinds of purposes. It has a few disadvantages. First of all, it contains asbestos; secondly, the thickness of a single-layer coating doesn't exceed 4 mm, which is not enough for isolating.

IZOPACK cords suit perfectly for these objectives. They are convenient in mounting, don't contain asbestos, and the thickness of 1 coating layer can reach up to 100mm (depends on section sizes).



Mount Techniques

Recommended mount techniques

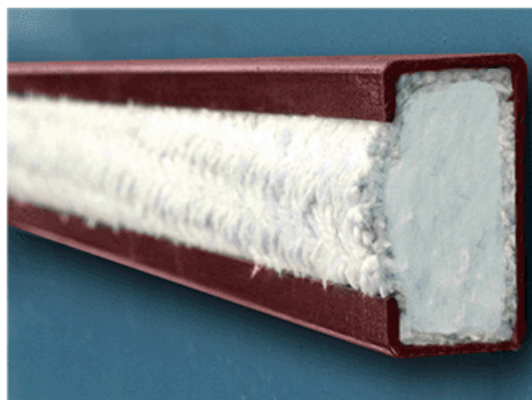
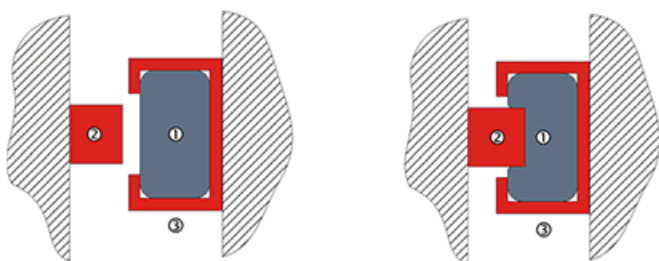
IZOLA proposes a few cords mount techniques for industrial purposes:

Gluing

This method is performed with high-temperature glues and provides easy mounting and reliability. The main disadvantage is a hard process of dismantling the old cord and setting up the new one. The high-temperature glue can be purchased from us.

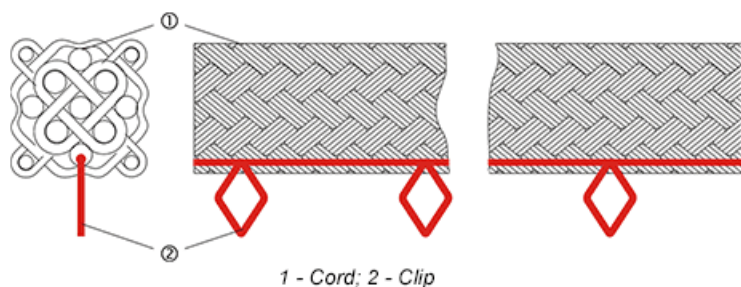
Grooving mount method

This method is safety and used in extreme application environments, where cords are used as a sealing. This method is suitable for an often cord replacement. Used cord is easy to dismount and replace it if a new one.



Clip-on method

This method is recommended for products, which are used in domestic conditions, because it is simple and doesn't need any special tools and skills. It is only needed to purchase cords with clips. They've got a letter "Z" in their names, such as IZOPACK-120Z.



Mounting using a metallic "velcro"

It is easy to replace old cords with new using metallic velcros. The disadvantage is that it's complicated to use on curved surfaces, and it's high price.