KORTTA-Emboss

KORTTA-Twist

KORTTA-Sinusoidal

KORTTA-Mesh

KORTTA-P.P.

KORTTA-G-plus

KORTTA-Blend

KORTTA-BlendFib

KORTTA-FiberMat

KORTTA-ParaFiber

KORTTA-MicroSurfacing

KORTTA-SMA

KORTTA-SBS

شرکت نانو نخ و گرانول
سیرجان
®

Sirjan Nano Yarn and Granule Co.

KORTTA Synthetic Fibers

www.sirjannano.com

Quality Always in all Ways

Foreword

Sirjan Nano Yarn and Granule Co. (P.J.S.) is the only producer of synthetic fibers in Iran. The fibers are produced in two types of concrete and asphalt which can be also customized according to the clients' demand. Pure modified polypropylene and polyolefin are used as raw materials in our products. The fibers benefits easily distributing which is resulted in a homogenous reinforced section. Different parts of construction including slabs, concrete pavement, bridge deck, etc. are target markets in which our fibers can be applied.
We follow all the international standards by which our different departments (R&D, Engineering, Labaratory) pursue the strategy of doing their best for achieving the high quality production.
As our factory is located in special economic zone of Kerman province, we have excellent possibilities to import and export our final product with very competitive price.
The technical data in our site is based on our present status of knowledge and it intends to provide general notes on our products and their applications. It should not be therefore considered as a guarantee of the specific properties or their suitability for any other particular application.

Message from the Group CEO

Sirjan is a pioneer company in manufacturing synthetic fiber based in IRAN.
Our professional group in R&D, Manufacture, and Distribution focus on developing synthetic fiber production to enhance the mechanical properties and life cycle of infrastructure construction. Our unwavering strategy is to increase our competitiveness by following superior quality. It has allowed us to retain our dominant position in the industry. In spite of rapidly changing business environment, our commitment in the implementation of advanced solutions has been contributed to the nation's economic development. Our upward trend in sales and profit margin over the past years is a result of our experience, expertise and long-term vision in comprehensive management. We will also continue to consolidate our position as a thriving business, by delivering the ultimate in our clients' satisfaction.

KORTTA Concrete Fibers

KORTTA Emboss
KORTTA Twist
KORTTA Sinusoidal
KORTTA Mesh
KORTTA P.P.
KORTTA G-plus
KORTTA Blend

CONCRETE

ASPHALT

KORTTA Asphalt Fibers

KORTTA Blend fib
KORTTA Fiber mat
KORTTA Para fiber
KORTTA Micro surfacing
KORTTA SMA
KORTTA SBS

KORTTA Concrete Fibers

- KORTTA Emboss
- KORTTA Twist
- KORTTA Sinusoidal
- KORTTA Mesh
- KORTTA P.P.
- KORTTA G-plus
- KORTTA Blend

KORTTA Emboss

Technical Properties:

Specific gravity (gr/cm^3) : 0.91
Length (mm) : 30 - 40 - 50
Diameter (mm) : 0.3 - 0.35
Color : Black - Gray
Melt point (°c) : 160 - 170
Tensile strength (MPa) : 550 - 700
Module of elasticity (GPa) : 6 - 7
Elongation (%) : 12
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Emboss macro synthetic fiber is made of pure modified polypropylene / polyolefin. The fiber is produced in types of monofilament and multifilament. This fiber can distribute easily which results in a homogenous reinforced section.

Application:

An alternative for shrinkage and temperature reinforcement, decrease in use of reinforcement, and increasing in energy absorption of:

- Slabs
- Concrete pavement
- Bridge deck
- Metal deck
- Precast product
- Shotcrete

Benefits:

- Reducing plastic shrinkage (effective crack control)
- Increasing concrete toughness and fatigue resistance
- Increasing life cycle
- Elimination of corrosion
- Increasing in precast production speed
- Cost saving
- Increasing energy absorption, flexural toughness and flexural strength

KORTTA Twist

Technical Properties:

Specific gravity (gr/cm^3) : 0.91
Length (mm) : 30 - 40 - 50
Diameter (mm) : 0.3 - 0.35
Color : White - Gray
Melt point (°c) : 160 - 170
Tensile strength (MPa) : 500 - 600
Module of elasticity (GPa) : 5.5 - 6.5
Elongation (%) : 12 - 15
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Twist macro synthetic fiber is made of modified polypropylene/ polyolefin. The fiber is produced in types of monofilament and multifilament. This fiber is distributed uniformly in concrete during mixing process which improves concrete mechanical and durability properties.

Application:

An alternative for shrinkage and temperature reinforcement, decrease in use of reinforcement, and increasing in energy absorption of:

- Slabs
- Concrete pavement
- Bridge deck
- Metal deck
- Precast product
- Shotcrete

Benefits:

- Reducing plastic shrinkage (effective crack control)
- Increasing concrete toughness and fatigue resistance
- Increasing life cycle
- Elimination of corrosion
- Increasing in precast production speed
- Cost saving
- Increasing energy absorption, flexural toughness and flexural strength

KORTTA Sinusoidal

Technical Properties:

Specific gravity (gr/cm^3) : 0.91
Length (mm) : 30 - 40 - 50
Diameter (mm) : 0.4 - 0.5
Color : Black - White - Gray
Melt point (°c) : 160 - 170
Tensile strength (MPa) : 500 - 600
Module of elasticity (GPa) : 5 - 6
Elongation (%) : 15
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Sinusoidal macro synthetic fiber is made of modified polypropylene/ polyolefin. The shape of fiber is ribbed which improves bonding strength and more contact with concrete matrix.

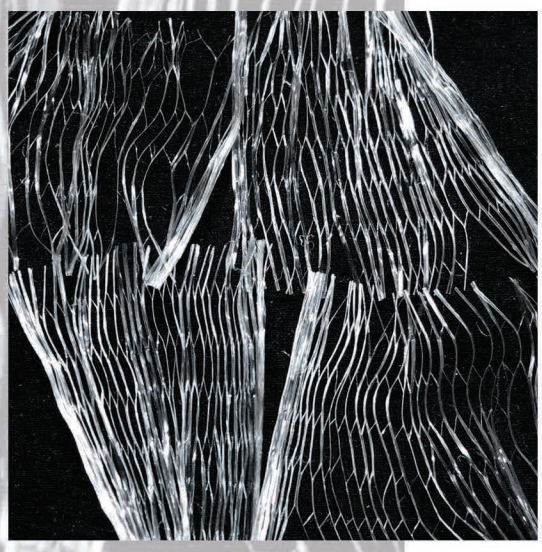
Application:

For replacement or reduction of steel reinforcement in:

- Slabs
- Concrete pavement
- Roller compacted concrete (RCC)
- Bridge deck
- Metal deck
- Precast product
- Shotcrete

Benefits:

- Reducing plastic shrinkage (effective crack control)
- Increasing -concrete toughness and fatigue resistance
- Increasing life cycle
- Elimination of corrosion
- Increasing in precast production speed
- Improve bonding strength
- Cost saving
- Increasing energy absorption, flexural toughness and flexural strength



KORTTA Mesh

Technical Properties:

Specific gravity (gr/cm^3) : 0.91
Length (mm) : 30 - 40 - 50
Diameter (mm) : 0.1
Color : Black - White
Melt point (°c) : 160 - 170
Tensile strength (MPa) : 300 - 400
Module of elasticity (GPa) : 3 - 4
Elongation (%) : 15
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Micro mesh synthetic fiber is made of modified polypropylene / polyolefin. The fiber is in form of mesh which uniformly distributed concrete matrix. The fiber is usually used by other types of macro synthetic fiber to control micro cracks and also to decrease shotcrete rebound.

Application:

For improving crack control in:
• Slabs
• Concrete pavement
• Bridge deck
• Metal deck
• Precast product
Decreasing rebound in:
• Shotcrete

Benefits:

• Reducing plastic shrinkage (effective crack control)
• Increasing life cycle

KORTTA P.P.

Technical Properties:

Specific gravity (gr/cm^3) : 0.91
Length (mm) : 6 - 12 - 18
Diameter (mm) : 0.035
Color : White
Melt point (°c) : 160 - 170
Tensile strength (MPa) : 350 - 400
Module of elasticity (GPa) : 3 - 3.5
Elongation (%) : 20
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Polypropylene fiber is a synthetic fiber which is made from propylene polymer. This fiber is categorized as micro fiber which is mainly used for controlling the plastic shrinkage cracking.

Application:

For improving crack control in:
• Slabs
• Concrete pavement
• Bridge deck
• Metal deck
• Precast product

Benefits:

• Reducing plastic shrinkage (effective crack control)
• Increasing concrete toughness and fatigue resistance
• Increasing life cycle
• Increasing in precast production speed
• Cost saving

KORTTA G-plus

Technical Properties:

Specific gravity (gr/cm^3) : 1.6
Length (mm) : 6 - 12 - 18
Diameter (mm) : 0.04
Color : White
Melt point (°c) : 400
Tensile strength (MPa) : 400 - 600
Module of elasticity (GPa) : 3.5 - 4.5
Elongation (%) : 8
Acid and alkaline resistance : Excellent
Water absorption : No

Description:

Glass fiber is a synthetic fiber which is categorized as micro fiber. This fiber is used for controlling the plastic shrinkage cracking.

Application:

For improving crack control in:

- Slabs
- Concrete pavement
- Bridge deck
- Metal deck
- Precast product

Benefits:

- Reducing plastic shrinkage (effective crack control)
- Increasing concrete toughness and fatigue resistance
- Increasing life cycle
- Increasing in precast production speed
- Cost saving

KORTTA Blend

Description:

This fiber is a mixture of micro, macro, and mesh fibers. The amount of each types of fiber is determined according to desired technical properties and application. Hybrid fiber reinforced concrete consists of different types of fibers. The efficiency of each type results in total efficiency of the concrete section.

Application:

For replacement or reduction of steel reinforcement and improving crack control in:

- Slabs
- Concrete pavement
- Bridge deck
- Metal deck
- Precast product
- Shotcrete

Benefits:

- Reducing plastic shrinkage (effective crack control)
- Increasing concrete toughness and fatigue resistance
- Increasing life cycle
- Elimination of corrosion
- Increasing in precast production speed
- Cost saving

KORTTA Asphalt Fibers

- KORTTA Blend fib
- KORTTA Fiber mat
- KORTTA Para fiber
- KORTTA Micro surfacing
- KORTTA SMA
- KORTTA SBS

KORTTA Blend fib

Technical Properties:

	Polyolefin	Aramid	Micro
Specific gravity (gr/cm^3) :	0.91	1.44	2.6
Length (mm) :	19	19	19
Tensile strength (MPa) :	500	3100	2600
Color :	White - Yellow - beige	Yellow	White
Melt point (°c) :	150	450	500
Acid and alkaline resistance :	Excellent	Excellent	Excellent

Description:

KORTTA asphalt fiber consists of five components. Three components are based on polyolefin, one is based on aramid, and the other is micro glass fiber. This fiber is used for reinforcement of Hot mix asphalt (HMA), Warm mix asphalt (WMA) and Hot/Cold patch.

Application:

This fiber is useful for:

- Hot mix asphalt (HMA)-(120-200 °c)
- Warm mix asphalt (WMA)-(>100 °c)
- Hot/cold patch (PAT)

Benefits:

- Increasing life cycle
- Controlling and Decreasing reflective cracking
- Decreasing maintenance cost
- Improving fatigue resistance
- Increasing bitumen adhesion
- Quick application

KORTTA Fiber-mat

Description:

KORTTA Fiber-mat is a specially formulated, polymer modified, crack resistant membrane that produces superior strength and flexibility. It forms a high tensile matrix upon application with a highly modified asphalt emulsion residue that is reinforced with engineered fiberglass strands. The Fiber-mat system is installed by a specially developed machine that uniformly applies the fiberglass strands in a continuous application. The strands are sandwiched between two layers of modified emulsion prior to application of an aggregate cover. The final product is then rolled to seat the aggregate into the surface. This combination of highly modified asphalt residue and a fiberglass reinforcement matrix creates a powerful resistant membrane interlayer that absorbs stresses in the pavement structure and delays the onset of cracking. Unlike conventional geotextile reinforced interlayers, Fiber-mat is easily recycled without any issues, is easily constructed, and saves time and labor on application for the user without the usual wrinkles, rips and tears associated with fabrics.

Application:

Fiber-Mat can be used on any asphalt or concrete pavement to be overlaid with HMA including:

- Streets
- Roads
- Highways
- Airfields

Benefits:

- Greatly reduces reflective cracking
- Increases strength with fiberglass fibers, resisting stresses placed on the surface treatment
- Waterproofs and seals small cracks and imperfections
- Enriches aged and oxidized asphalt pavements
- Improves skid resistance
- Protects underlying pavement from traffic wear
- Uses environmentally safe asphalt emulsions
- Ultrathin, preserving curb reveal and clearances under bridges and overpasses
- Quick application and traffic return
- Effective preventive and corrective maintenance for a long-lasting wearing course that

protects and extends the life of your pavement

- Product can be milled or reclaimed, and recycled without any construction or production issues

KORTTA Para-fiber

Technical Properties:

	Fiber
Density (gr/cm^3) :	2.6
Length (mm) :	6 - 19
Tensile strength (MPa) :	750 - 900
Color :	White - Yellow
Melt point (°c) :	500
Acid and alkaline resistance :	
	Elastomer plastomer elastobit
MFR 190 °c (gr/10min) :	35
Density (kg/m^3) :	870
Hardness (shore A) :	70
Melt point (°c) :	55

Description:

KORTTA Para-fiber is consist of fiber and elastomer, elastomer elastobit, that improve life-cycle of asphalt layer and creates a powerful resistant membrane. The reinforced asphalt with this fiber has high tensile and fatigue strength.

Application:

- Thin layer pavements
- Road asphalt
- Asphalt crack sealing
- Water proofing membrane

Benefits:

- Increasing tensile strength
- Increasing life cycle of the pavement
- Increasing fatigue and slope strength

KORTTA Micro Surfacing Fiber

Description:

KORTTA fiber micro-surfacing is a new type of protective asphalt in which the fiber properties can improve the performance of protective layer. Actually, Micro-surfacing inclusive of fiber demonstrated better resistance to cracking under flexural tension than Micro-surfacing without fiber.

Application:

- Highways and free ways
- Residential roads
- Airfields

Benefits:

- Erosion resistance
- Increasing the life cycle
- Low cost
- Ultrathin and high speed of performance
- Can be applied in both covering asphalt and concrete asphalt

KORTTA SMA

Description:

KORTTA SMA is a granular material that consists of high quality cellulose fiber without modifying additive and doesn't contain bitumen

Application:

• For all types of asphalt with a high content of bitumen, for example, SMA
• To prevent separation of the bonding layer and minerals during production
• To prevent the splitting of the asphalt-concrete mixture during transportation and storage

Benefits:

• Increasing splitting and modifying strength
• Increasing loading strength
• Increasing fatigue strength
• Increasing shrinkage crack resistance
• Delaying aging of the bitumen
• Increasing asphalt mixture durability

KORTTA SBS

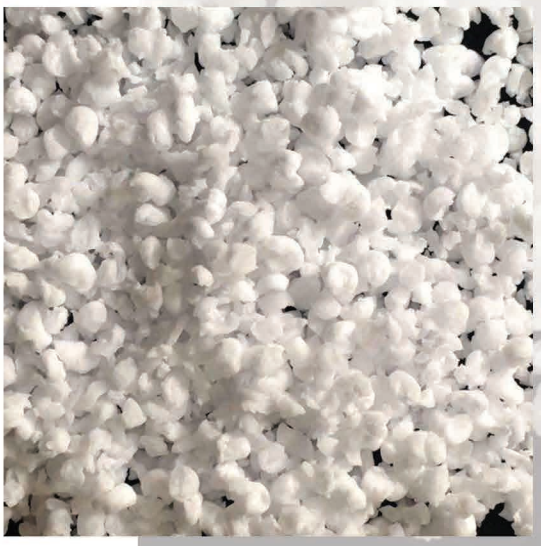
Description:

KORTTA SBS is a pellet made of bitumen and SBS elastomer (Styrene-Butadiene-Styrene), used as a modifier for asphalt mixes, whatever the type of bitumen used. KORTTA SBS is a suitable alternative to existing Polymer modified Bitumen (PmB) currently manufactured in binder plants.

Application:

KORTTA SBS is used to modify asphalt mixes as soon as major improvements of their thermo mechanical performances are required. SBS SIRJAN is designed for the fabrication of asphalt mixes for binder course and surface course in:

• Airports
• Runways
• parking areas
• Motorways
• Highways
• High load bearing areas
• Bridges



Benefits:

• Outstanding resistance to rutting and thermal cracking
• Excellent resistance to fatigue and permanent deformation
• Better adherence
• Better sustenance of pavement surface properties
• Strong cohesion and elasticity
• Improvement of the modulus of rigidity
• Lower thermal susceptibility

Concrete Pavement

Slabs

Bridge Deck

Metal Deck

Precast Product

Dams

Shotcrete

Roller Compacted Concrete (RCC)

Hot mix Asphalt (HMA)

Warm mix Asphalt (WMA)

Hot/cold Patch (PAT)

Thin layer Pavements

Asphalt Crack sealing

Water proofing Membrane

Highways and Freeways

Airfields

Residential Roads

Runways

parking Areas

High load bearing Areas

Bridges

Notice

www.sirjannano.com
info@sirjannano.com

TEHRAN OFFICE:
No. 24, 8th Alley, Pakestan St., Dr. Beheshti Ave.,
Tehran 1531713917 Iran
P.O.Box : 15875 -7458
E-mail : info@sirjannano.com
Tel: (+98 21) 88 75 06 18 (20 Lines)
Fax: (+98 21) 88 75 06 02 - 88 74 15 22
SIRJAN FACTORY:
Sirjan Special Economic Zone, Sirjan, Iran
Tel Factory : (+98 34) 42 38 20 23-25
Fax Factory : (+98 34) 42 38 20 27