

# GEOSKY Geosynthetics 土工合成材料

## 公司简介

山东鑫天河新材料科技有限公司位于泰山之阳，汶水之滨，坐落在大汶口石膏工业园内，毗邻京台高速、104国道，是一家集新型土工合成材料、新型环保材料研发、生产、销售、技术咨询服务于一体的现代化高科技企业。

Shandong Geosky Technology Co., Ltd is located in South of Mount Tai, coast of Wenshui and in Dawen Kou Gypsum Industrial Park, adjoins Jing Tai Expressway and 104 State Road. It is a modern high-tech enterprise which focus on research and development, production, sales and technical advisory services for new geosynthetics and new environmental materials.

公司注册资本5619万元，占地面积120000m<sup>2</sup>，现有生产车间、办公楼共计26600m<sup>2</sup>。公司现有产品分6大类，60多种规格，主要产品有高强度聚酯经编土工格栅、高强度聚酯矿用支护网、土工布、土工膜、机织布、防水板等土工材料。已被广泛应用于高速公路、铁路、机场、隧道、水利设施、矿山支护、挡土墙等相关工程的建设软土地基处理。

Company registered capital is more than \$ 9 million, covers an area of 120,000 square meters. The existing production workshop and office building cover a total of 26,600 square meters. The product covers 6 categories, more than 60 specifications. The main products are high strength warp-knitted geogrid, high strength polyester fiber supporting and protecting mesh, geotextile, geomembrane, woven geotextile, waterproof board and other geosynthetic products. All of them are used widely in highway, railway, airport, tunnel, water conservancy facilities, mine supporting and protecting, retaining wall and the construction of soft foundation treatment in other related projects. 公司技术力量雄厚，拥有年轻的高素质研发和管理团队，主要研发和管理人员曾供职于中国社会科学院研究生院、铁路勘探设计院、甘肃路桥建设集团、神华集团有限责任公司、中铁十二局等大型集团公司，研发和管理经验丰富。公司发展方向致力于新型材料研发、工程技术应用等领域，为国家重点建设工程提供优质的产品和服务。目前已承担国家与省级重点攻关研发计划项目二项，并与相关设计研究院展开紧密合作，研制开发出了多种新型土工合成材料及新型节能环保材料，并积极申报了多项国家发明和实用新型专利及科技成果鉴定；公司现有职工120余人，其中具有高级职称15人，中级职称20人，研发人员10人，大专以上学历占员工总数的43%。

Company has strong technical force and a young high-competent team for R&D and management. The main R&D and management staffs have worked in Graduate School of Chinese Academy of Social Science, Railway Exploration and Design Institute, Gansu Road and Bridge Construction Group, Shenhua Group Co., Ltd, China Railway 12th Bureau and other large scale groups. They are have rich R&D and management experience. Company focuses on R&D of new materials

公司拥有高强进口经编生产线、定型涂覆设备、土工膜设备、土工布设备、防水板设备、机织机各类生产设备以及相关的各类实验仪器设备共26条。

Company has 26 production lines including the high tensile strength warp-knitting machine lines from Germany, coating machine lines, geomembrane machine lines, geotextile machine lines, waterproof board machine lines, dornier weaving machine lines and variety testing machines. 公司本着“以客为本、以质求存、以信立市”的经营准则，不断优化产品结构，研发高新产品，扩大生产规模，公司通过ISO9001质量管理体系认证、MA认证、CE认证。市场占有率日益提高。公司自开办以来，所研制销售产品得到客户高度认可，已被广泛应用。产品技术优势明显，性价比高，获得业主单位及施工单位一致好评。国内市场迅速扩大，同时公司积极开拓国际业务，产品已远销美国、俄罗斯、印度、越南、韩国、马来西亚等二十多个国家。

With the operation principles of "customer-oriented, quality-oriented, reputation-oriented", our company is continuous to optimize the product structure, research and develop high-tech products, expand production scale, and has passed the ISO9001 quality management system certification, MA certification, CE certification. Market share is increasing day by day. Since its setting up, the products we have developed and sold have received customers highly recognition and have been widely used. With obvious technology advantages and high cost performances, our productions have earned project owners and construction units' favourable comments. The domestic market has expanded rapidly, and our company is actively exploring international market. The products have been exported to more than 20 countries, such as United States, Russia, India, Vietnam, Korea, Malaysia, etc. ,

公司与中国科学院长春应用化学研究所、南京水科院、天津大学、青岛科技大学等科研单位建立了长期友好的合作关系，并成立了技术合作研发中心和产学研实践基地，使企业综合实力得以发展壮大并稳步提升。

Company has built a long term cooperation relationship with the Chinese Academy of Sciences Changchun Institute of Applied Chemistry, Nanjing Water Research Institute, Tianjin University, Qingdao University of Science and Technology and other scientific research units, and set up a technology research and development center and practice base of production, research and study, which have developed our comprehensive strength and improved growth steadily. 公司将始终遵循“以科技创新为动力，以客户满意为目标”的原则，秉承“真诚、利他、创新、严谨、优质”的企业宗旨，不断开拓进取，追求完美，创造世界最优秀的产品和服务，与各工程单位和各界同仁真诚合作，共同为国家基础设施建设做出更大的贡献。

The company will always follow principle: "scientific and technological innovation as the driving force, customer satisfaction as the goal", adhering to the mission: "sincere, altruistic, innovative, rigorous, high-quality", and continuously forge ahead, pursuit of perfection to create the world's best products and Services. Cooperating with each project units and colleagues from all walks of life, we will together make greater contributions for the national infrastructure projects.

#### 高强聚酯纤维矿用支护网

##### High Strength Polyester Fiber Mine Supporting & Protecting Grid

产品介绍：Product Introduction 高强聚酯纤维网是采用高模，高强度工业涤纶长丝捆绑编织成基体，在基体表面覆一层阻燃抗静电的涂层，是一种新型的矿用支护材料，也是露天煤矿护坡，加固路基专用材料。它完全可以替代传统的金属网，塑料网以及钢塑网等，是理想的井下支护网和露天矿护坡专用网。

High Strength Polyester Fiber Grid is made of high-modulus and high strength long polyester fiber which are warp-knitted and bundled together as its body and then is coated with fire retarding and static conducting material. It is not only a kind of new type material for mine supporting and protecting, but also the specific materials for open-pit slope protection and reinforcement of sub-grade. It is a good substitute for traditional metal mesh, plastic mesh, steel-plastic mesh and other materials. It is a ideal subsurface supporting and protecting mesh and specific slope protection mesh for open-pit mine.

应用范围及性能特点：Application Rang and Performance Features 该产品具有强度高、重量轻、施工方便、耐酸碱、耐腐蚀、耐高低温、抗老化、使用寿命长、阻燃、抗静电等性能。可广泛应用于煤矿末采搬家撤面、采煤工作面假顶支护工程、掘进工作面护帮支护工程、端尾端头支护、煤矿锚喷巷道、隧道的临时和永久支护等。该产品坚固柔软、重量轻、易铺设、拉力强度大。每平方米的最小拉力强度达40KN，最大拉力强度可达1000KN，而金属网的拉力强度只有35KN左右。抗酸碱、耐腐蚀、摩擦不易产生静电，阻燃性能好，在井下埋压性能基本不变，而金属网、塑钢网腐蚀严重，大大降低拉力强度。上网工艺简单，不影响工作面正常生产，节省工期，提高工效。

The product has the properties of high strength, light weight, easily operation, acid and alkali resistance, anti-corrosion, high temperature resistance, anti-aging, long service life, fire retarding, static conduction and etc. performance features. It could be widely used in the working face moving and withdrawing of coal mining end extraction, fake ceiling supporting engineering, protecting upper engineering, end and start supporting, temporary and permanent tunnel supporting and so on. It is firm and flexible, light weight, easily pave, high strength tensile and etc. The minimum tensile strength of unit square meter is 40KN and maximum 1000KN, but the strength tensile of metal mesh is only about 35KN. It has anti-acid and alkali, anti-corrosion, difficult to produce static electricity and best fire-retardant performance. All the performances barely change, even though it is buried in the underground. But metal mesh, steel-plastic mesh will corrode heavily, so the tensile strength reduces much. The mesh is also easy-construction, makes no effects on normal working face production, saves the working time and improves the working efficiency.

#### 高强聚酯单、双向经编土工格栅

##### High Strength Polyester Uniaxial & Biaxial Warp-knitting Geogrid

产品介绍：Product Introduction 高强聚酯经编土工格栅选用工业高强、高模、低收缩加捻涤纶丝为原料，采用经编定向结构，织物中的经纬向相互间无弯曲状况，交叉点用高强纤维长丝捆绑结合，形成牢固的结合点，并经过优质油性或水性PVC涂覆处理而形成平面网状材料，充分发挥其力学性能。

Warp-knitting polyester geogrid adopts industrial high-strength, high modulus and low-shrinkage twisting polyester fiber as raw material. It is used warp-knitted directional structure, and there is no bend statement between warp and weft yarns on the fabric. The crossing points are bundled and banded together by high-strength polyester fiber, and form solid binding points. After coating high-quality oil or water-soluble PVC, its physical and chemical properties

put into great play.产品特点： 高强聚酯经编土工格栅具有高强度、高模量、低蠕变、抗老化、抗脆裂、抗撕裂强度大，与土壤碎石相结合力强及可预设计的多种特性。

#### Product Features

Warp-knitting polyester geogrid has high tensile strength, high modulus, low creep, anti-aging, anti-brittle, high tearing strength, strong bonding force with gravel and soil, and other multiple pre-designed characteristics.应用范围： 1、各种各等级道路、高速铁路的软路基增强，隔离不同的基土材料。2、河岸、山体滑坡、挡土墙、填海工程、港口码头建设工程等。3、各种基地的加强稳固。4、机场软路基处理。

#### Application Range

Strengthening weak sub-grades of high-grad roads and railways, and separating different foundation soil materials.

Using in riverbank, slope and earth-retaining wall.

Enhancing a variety of foundation.

### Applying in airport runway.产品技术参数：

#### Product Technical Parameter

性能/规格 Specification 强度 Tensile Strength 延伸率 Elongation 网格尺寸 Grid Size

幅宽 Width 高强聚酯单向经编土工格栅 High Strength Polyester Uniaxial Warp-knitting Geogrid

玻璃纤维土工格栅

#### Fiberglass Geogrid

产品介绍： Product Introduction 玻纤格栅是选用优质增强型无碱玻纤纱,利用先进经编机织成基体,采用经编定向结构,充分利用织物中纱线强力,改善其力学性能,使其具有良好的抗拉强度,抗撕裂强度和耐蠕变性能,并经过优质改性沥青涂覆处理而成的平面网状材料。其因循相似相容原理,重点突出其与沥青混合料的复合性能，并充分保护玻纤基体,极大提高了基体的耐磨性及抗剪切能力,从而得以用于路面增强,抵抗裂缝车辙等公路病害产生，结束了沥青路面难以增强的难题。

Fiberglass geogrid is a kind of flat mesh material coated with high-quality modified asphalt. It uses high quality reinforced non-alkali fiberglass yarn as raw material and utilizes warp knitting machine to knit as basal body. It adopts warp-knitted directional structure, and makes full use of the fabric yarn strength to improve its mechanical properties. It has good tensile strength, tear strength and anti-creep performance. It follows the principle of similar compatibility and highlights its composite performance with asphalt mixture. It fully protects the basal body of glass fiber, greatly improves the wear-resisting and anti-shearing performance. So it can be used for road enhancement, resistance to rutting cracks such as road disease happened. It solves the problem that asphalt pavement is difficult to reinforce.产品特点： 产品有强度高、伸长率低、耐高温、模量高、重量轻、韧性好、耐腐蚀、寿命长等特点,高抗拉强度低延伸率,无长期蠕变,物理化学稳定性好,热稳定性好,抗疲劳开裂,耐高温车辙，抗低温缩裂,延缓减少反射裂缝。

#### Product Features

The product has features in high tensile strength, low elongation, high modulus, light wight, good toughness, anti-corrosion, anti-aging, as well as high resistance tensile strength, low elongation, good physical and chemical stability, thermos-stability. It can prevent the road cracking under low temperature and fatigue condition, the pavement rut under high temperature. 应用范围： 1、沥青砼路面,加筋增强沥青面层，防治病害 2、水泥砼路面改建复合式路面,抑制板块收缩等引起反射裂缝。 3、道路拓改工程，防治新老结合部及不均匀沉降而造成裂纹 4、软土基加筋处理.利于软土析水固结,有效抑制沉降,均匀应力分布,增强路基整体强度。

#### Application Range

Maintenance of old asphalt road, reinforcement of asphalt pavement.

Rebuild old cement concrete road into composite road, restrain reflection crack caused by different block contraction.

Apply in road renovation and expansion project, prevent cracks along the joint position caused by uneven sedimentation.

Used for soft sub-grade reinforcement. It will help the water infiltration and soil concretion, restrain subsidence effectively, and decentralize evenly, enhance overall strength of the roadbed.

性能/规格 Specification 强度 Tensile Strength 延伸率 Elongation 网格尺寸 Grid Size

幅宽 Width 玻璃纤维土工格栅 fiberglass geogrid

土工布

Geotextile

## 产品介绍:

该产品具有优越的透水性、过滤性、耐用性、可广泛用于铁路、公路、运动馆、堤坝、水利建筑、隧道、沿海滩涂、围垦、环保等工程。主要有短纤非织造土工布和裂膜丝机织土工布。它具有隔离、过滤、排水、加筋、防护、封闭的作用。

### Product Introduction

This product has excellent permeability, filterability and durability. It can be widely used in railway, highway, sports hall, dam, water conservancy construction, tunnel, coastal beach, reclamation, environmental protection and other projects. It mainly divides spun non-woven geotextile and split film yarn woven geotextile.

It has isolation, filtration, drainage, reinforcement, protection, and sealing functions. 产品特点: 1、利用土工布良好的透气性、使水流通过。从而有效地载留沙土流失。 2、土工布具有良好的导水性能。 3、利用土工布增强土体的抗拉强度和抗变形能力, 增强建筑结构的稳定性, 以改善土体质量。 4、有效地集中应力扩散, 传递或分解, 防止土体受外力作用破坏。 5、防止水下层砂石、土体及混凝土之间的混杂。 6、网孔不易堵塞。 7、高透水性。 8、施工简单、重量轻、使用方便。

### Product Features

The geotextile has good air permeability, so that water flows through and contain sand loss effectively.

The geotextile has a good water conductivity.

To use geotextile reinforce soil tensile strength and non-deformability, and enhance the stability of building structure to improve soil quality.

To concentrate the stress diffusion, transfer or decomposition and prevent the soil damaged by external force.

To prevent the mixture among underwater sand, soil body and concrete.

The mesh is not easy to block.

It has high permeability.

Easy-construction, light weight, easy to use. 应用范围: 用于公路、铁路、堤坝、沿海滩涂等工程的加筋、隔离及排水。

### Application Range

It is used in road, railway, dam, coastal beach and other projects for reinforcement, isolation and drainage.

## 技术指标:

### Technical Parameter

| 土工布 |             |                           |      |      |      |      |      |      |      |      |      |      |
|-----|-------------|---------------------------|------|------|------|------|------|------|------|------|------|------|
| 序号  | 项目          | 规格指标                      |      |      |      |      |      |      |      |      |      |      |
|     |             | 100                       | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 600  | 800  |
| 1   | 单位面积质量偏差    | -8                        | -8   | -8   | -8   | -7   | -7   | -7   | -7   | -6   | -6   | -6   |
| 2   | 厚度, mm      | 0.8                       | 0.9  | 1.3  | 2.1  | 2.4  | 2.5  | 2.8  | 3.1  | 3.4  | 4.2  | 5.5  |
| 3   | 幅宽偏差 %      | -0.5                      |      |      |      |      |      |      |      |      |      |      |
| 4   | 断有强力 KN/m   | 2.0                       | 2.5  | 4.5  | 8.0  | 9.5  | 11.0 | 12.5 | 14.0 | 16.0 | 19.0 | 25.0 |
| 5   | 断裂伸长率 %     | 25 ~ 100                  |      |      |      |      |      |      |      |      |      |      |
| 6   | CBR顶破强力 KN  | 0.2                       | 0.3  | 0.6  | 1.2  | 1.5  | 1.8  | 2.1  | 2.4  | 2.7  | 3.2  | 4.0  |
| 7   | 等效孔径 mm     | 0.07 ~ 0.2                |      |      |      |      |      |      |      |      |      |      |
| 8   | 垂直渗透系数 cm/s | (1.0-9.9) * (0.1 ~ 0.001) |      |      |      |      |      |      |      |      |      |      |
| 9   | 撕破强力 KN     | 0.06                      | 0.08 | 0.12 | 0.20 | 0.24 | 0.28 | 0.33 | 0.38 | 0.42 | 0.46 | 0.60 |

土工膜 Geo membrane

用途： 1、垃圾填埋场、江堤、湖坝、尾矿坝、污水坝及库区、渠道、蓄液池（坑、圪等）。 2、地铁、地下室和隧道、隧洞防渗衬砌。 3、路基及其他地基盐渍防渗。 4、堤、坝前水平防渗铺盖，地基垂直防渗层、施工围堰、肥料厂。 5、海水、淡水养殖场。 6、公路、高速公路、铁路的地基；膨胀土和湿陷性黄土的防水层。 7、屋面防渗。

Used in landfill, river embankment, lake dam, tailing dam, sewage dam and reservoir area, channels, and other hydraulic ponds.

Used in subway, basement and tunnel, tunnel seepage-proofing lining.

Used in roadbed and other foundation saline seepage-proofing.

Used in level seepage-proofing bedding of embankment and dam, foundation vertical impermeable layer, construction cofferdam, fertilizer plant.

Used in sea water, freshwater farms.

Used in the foundation of road, highway,railway and the waterproof layer of expansive soil and collapsible loess.

Used in roof seepage-proofing.

技术参数

Technical Parameter

项目/类别 Item LDPE 土工膜技术指标 LDPE Technical Index EVA土工膜技术指标 EVA Technical Index 养殖专用土工膜技术指标 (HDPE 或MDPE) Farming Film Technical Index 厚度 Thickness 宽度 Width 拉伸强度 (纵横) Tensile Strength (cross & across) 断裂伸长率 (纵横) Breaking Elongation( Cross & Across) 直角撕裂强度 Vertical Tearing Strength 水蒸气渗透系数 Vapour Permeability Coefficient 使用温度范围 Range of Temperature 通过 pass

| 项目/类别                                   | LDPE土工膜技术指标            | EVA土工膜技术指标             | 养殖专用土工膜技术指标 (HDPE或MDPE) |
|-----------------------------------------|------------------------|------------------------|-------------------------|
| 厚度, mm                                  | 0.2~4                  | 0.2~4                  | 0.2~1.0                 |
| 宽度, m                                   | 2.5~8                  | 2.5~8                  | 2.5~8                   |
| 拉伸强度 (纵横), MP <sup>2</sup>              | ≥14                    | ≥16                    | ≥26                     |
| 断裂伸长率 (纵横), %                           | ≥400                   | ≥550                   | ≥600                    |
| 直角撕裂强度, N/mm                            | ≥5                     | ≥60                    | ≥110                    |
| 水蒸气渗透系数 (g. cm/cm <sup>2</sup> . s. pa) | <1.0×10 <sup>-14</sup> | <1.0×10 <sup>-14</sup> | ≥1500<br>通过             |
| 使用温度范围, °C                              | +70~-70                | +70~-70                | ≥50                     |

厚度 Thickness 宽度 Width 拉伸强度（纵横） Tensile Strength (cross & across) 断裂伸长率（纵横） Breaking Elongation( Cross & Across) 直角撕裂强度 Vertical Tearing Strength 耐环境应力开裂 Environmental Stress Crack Resistance -70℃低温冲击催化性能 -70℃ low temperature impact catalytic performance 200℃氧化诱导时间 200℃ Oxidation Induction Time

|                          |       |       |
|--------------------------|-------|-------|
| 厚度, mm                   | 0.2~4 |       |
| 宽度, m                    | 2.5~8 |       |
| 拉伸强度（纵横），MP <sup>2</sup> | ≥17   | ≥25   |
| 断裂伸长率（纵横），%              | ≥450  | ≥550  |
| 直角撕裂强度，N/mm              | ≥80   | ≥110  |
| 耐环境应力开裂，F20.h            |       | ≥1500 |
| -70℃低温冲击催化性能             |       | 通过    |
| 200摄氏度氧化诱导时间             |       | ≥50   |