

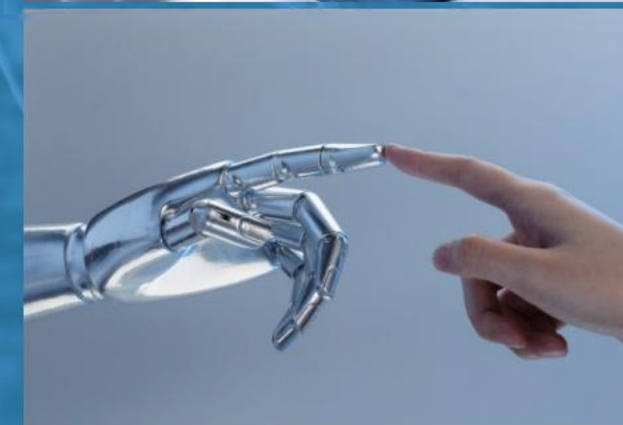
ABOUT US 关于+我们

Liaoning Hengyu New Materials Co.,Ltd.



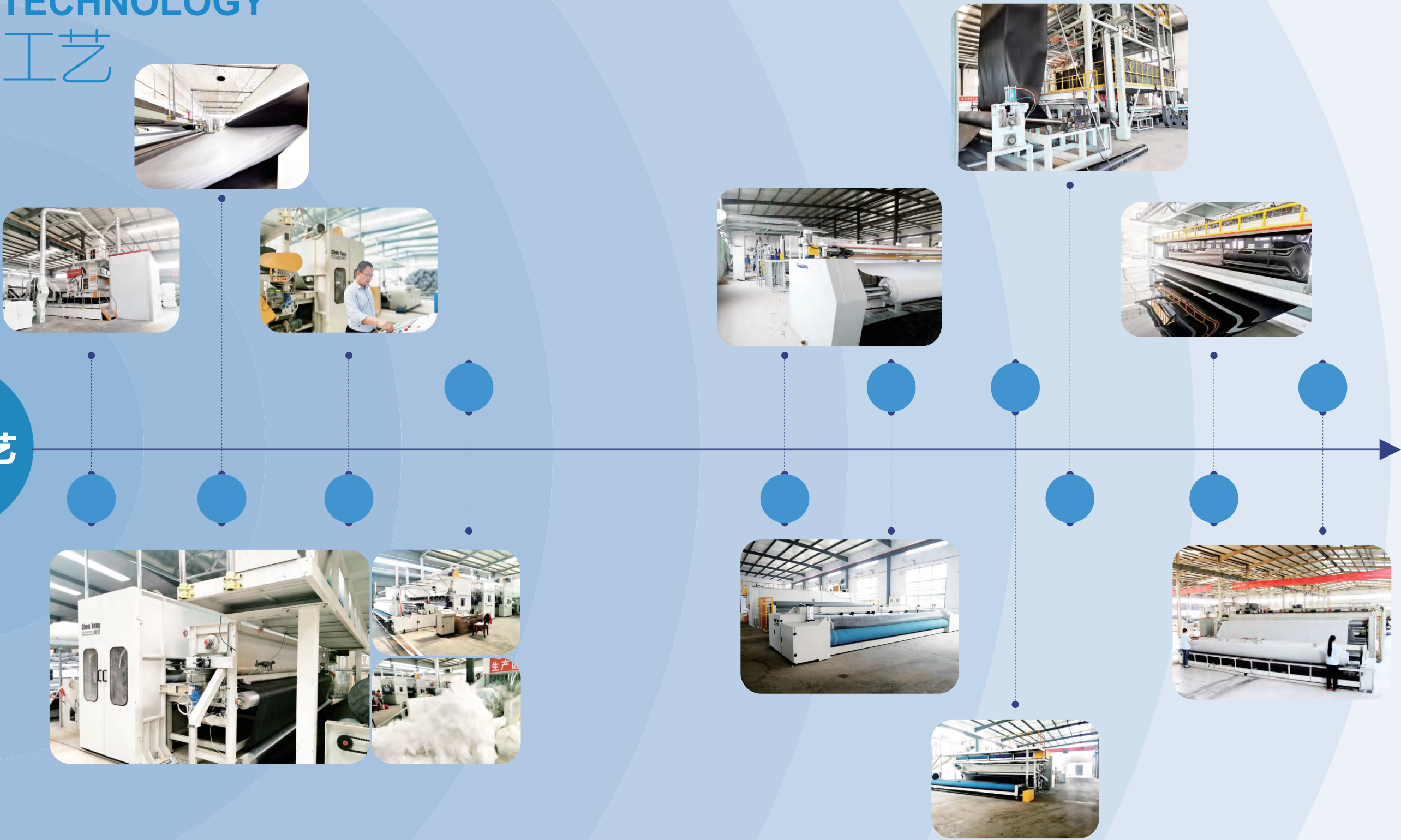
Liaoning Hengyu New Materials Co., Ltd., based in Shenyang, China, is a leading integrated manufacturer specializing in geosynthetic solutions. We develop and produce high-performance HDPE geomembranes, filament geotextiles, and composite geomembranes, supported by full engineering and technical services. Our modern automated facilities ensure strict quality control, with products meeting both Chinese (GB/T) and international (ASTM, GRI) standards. We have successfully executed key projects including landfill liners, reservoir seepage prevention, and artificial lake construction. Beyond supplying materials, we deliver reliable engineering solutions through logistics support and technical guidance. Committed to sustainability and integrity, we partner with clients to build environmentally responsible infrastructure worldwide.

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ABOUT TECHNOLOGY
关于+工艺

设备工艺



ABOUT CULTURE

关于+文化

涵蕴—以诚为本
秉性纯直，以诚待天下，天下趋之

专注行业，值得信赖的品牌

Focus on the industry, trustworthy brand

山东恒阳新材料有限公司专注土工布、hdpe土工膜、复合土工膜、防渗膜、GCL膨润土防水毯、三维复合排水网等新型复合土工材料多年，产品在国内工程中大批量应用；积淀深厚，值得信赖。

Shandong Hengyang New Materials Co., Ltd. focuses on geotextile, hdpe geomembrane, composite geomembrane, impermeable membrane, GCL bentonite waterproof blanket, three-dimensional composite drainage network and other new composite geomembrane materials for many years, the products are used in large amounts in domestic projects; Deep accumulation, trustworthy.

产品质量管控严格

Product quality control is strict

山东恒阳新材料有限公司生产线皆配置相关检测设备，专业质量检测人员，产品质量溯源到人；真正做到为工程提供放心产品。

Shandong Hengyang New Materials Co., Ltd. production line are equipped with relevant testing equipment, professional quality testing personnel, product quality traceability to people; Truly provide assured products for engineering.

专业设备生产线，供货时效有保障

Professional equipment production line, the supply time is guaranteed

年产土工材料万吨以上；仓库库存稳定，生产有序，供货时效有保障。常用规格土工布、复合土工膜、hdpe 土工膜、防渗膜现货当天发。

Annual output of more than 10,000 tons of geomaterials; The warehouse inventory is stable, the production is orderly, and the supply time is guaranteed. Common specifications geotextile, composite geomembrane, hdpe geomembrane, impermeable membrane spot on the same day.

贴心服务，工程商的好伙伴

Intimate service, good partner of engineering

山东恒阳新材料有限公司可根据客户工程情况，量身打造全面、优质的防渗设计；提供运输、施工、安装指导全方位服务，推进客户施工进度、服务涵盖售前指导、施工咨询、售后安装，为工程商提供管家级服务。

Shandong Hengyang New Materials Co., Ltd. can tailor comprehensive and high-quality anti-seepage design according to customer engineering conditions; Provide transportation, construction, installation guidance of a full range of services to promote the construction progress of customers, services covering pre-sales guidance, construction consulting, after-sales installation, to provide butler services for engineers.

目录

糙面土工膜	15	编织土工布	27
柱点土工膜	16	隧道防水板	28
光面土工膜	17	钠基防水毯	29
养殖防渗膜	19	复合排水网	31
短丝土工布	20	护坡生态袋	32
高强丙纶针刺土工布	21	塑料排水板	33
热轧非织造土工布	22	水泥毯	34
长丝土工布	23	施工方案	35
复合土工膜	25	检测设备	39

糙面土工膜

Rough surface geomembrane

产品介绍 Product Introduction

糙面土工膜是聚乙烯土工膜在吹塑生产工艺的基础上，对生产设备进行技术革新改造，经过氮气加糙、水糙或者喷糙工艺生产形成。HDPE 糙面土工膜是新型防渗材料，单糙面、双糙面型态土工膜具有增加摩擦系数，防滑等功能，可适用于陡坡垂直防渗，提高工程稳定性。糙面提高了土工膜表面的摩擦性能，与同规格的光面膜对比，糙面膜表面粗糙，在铺设膜时，会使膜与基面形成微小夹空层面，这样可以增强膜的抗承载变形力，一般应用在边坡要求有较大摩擦系数的项目中。

Rough surface geomembrane is polyethylene geomembrane on the basis of blow molding production process, technical innovation of production equipment, through nitrogen roughing, water roughing or spraying process. HDPE rough surface geomembrane is a new type of impermeable material. Single rough surface and double rough surface geomembrane have the functions of increasing friction coefficient and anti-slip, which can be applied to vertical impermeable steep slope and improve engineering stability. Rough surface improves the friction performance of the surface of the geomembrane. Compared with the light mask of the same specification, the rough surface of the mask is rough, and when laying the film, the film and the base surface will form a small hollow layer, which can enhance the load-bearing deformation resistance of the film. It is generally used in projects requiring a large friction coefficient of the slope.

性能特点 Performance characteristics

具有优异的温度适应性、延伸性，耐候性和良好的抗老化性、耐化学腐蚀性、耐环境应力开裂性能。

It has excellent temperature adaptability, extensibility, weather resistance and good aging resistance, chemical corrosion resistance and environmental stress cracking resistance.

作用用途 Function and use

主要应用于垃圾填埋场、污水废液处理、水利环保、尾矿库工程或废渣处理场作为防渗漏材料。

It is mainly used in landfill, sewage waste liquid treatment, water conservancy and environmental protection, tailings pond engineering or waste residue treatment field as anti-leakage materials.

产品规格 Product Specifications

厚度：1.0mm-3.0mm 幅宽：1m-8m 卷长：50m-100m 也可按照客户要求定做。

Thickness: 1.0mm-3.0mm Width: 1m-8m
Volume length: 50m-100m can also be customized according to customer requirements.

技术指标 Technical Indicators

环保用糙面高密度聚乙烯土工膜（GB/T 17643-2011 GH-2T1.GH-2T2型技术指标）

Rough high density polyethylene geomembrane for environmental protection (GB/T 17643-2011 GH-2T1.GH-2T2 type technical index)

项目 Item	单位 Unit	指标 Technical data						
厚度 Thickness	mm	0.75	1.0	1.25	1.5	2.0	2.5	3.0
密度 Density	g/cm³	≥0.940						
毛糙高度 Roughness height	mm	≥0.25						
拉伸屈服强度（纵、横向） Tensile stress At yield(MD/TD)	N/mm	≥11	≥15	≥18	≥22	≥29	≥37	≥44
拉伸断裂强度（纵、横向） Breaking strength(MD/TD)	N/mm	≥8	≥10	≥13	≥16	≥21	≥26	≥32
屈服伸长率（纵、横向） Yield elongation(MD/TD)	%	≥12						
断裂伸长率（纵、横向） Elongation at break(MD/TD)	%	≥100						
直角撕裂强度（纵、横向） Strength at tear(right-angle Tear)(MD/TD)	N	≥93	≥125	≥160	≥190	≥250	≥315	≥375
抗穿刺强度 Antipuncture strength	N	≥200	≥270	≥335	≥400	≥535	≥670	≥800
拉伸负荷应力开裂 Tensile load stress cracking	h	≥300						
炭黑含量 Carbon black content	%	2.0-3.0						
炭黑分散性 Carbon black distribute	/	10个数据中3级不多于1个，4级，5级不允许 In 10 date,3 degree no more than 1,4 and 5 degree not allowed						
氧化诱导时间(OIT) Antioxidation time	min	常压氧化诱导时间≥100 normal pressure oxidation time						
		高压氧化诱导时间≥400 high pressure oxidation time						
85℃热老化 85℃ Heat anti-aging	%	≥55						
抗紫外线 Uvioresistant	%	≥50						
厚度极限偏差 Thickness limit deviation	%	-10						



柱点土工膜

Column point geomembrane

产品介绍 Product Introduction

HDPE 柱点糙面土工膜，按照形态分为单柱点土工膜、双柱点土工膜；该生产工艺所生产的产品在保留原生树脂本身具有优异的力学性能和良好的延伸率、化学性能稳定的基础上，通过添加一定比例的功能助剂经熔融、挤出、压延、牵伸等工艺，增强了产品的抗拉、耐磨、耐穿刺性能，该产品的力学性能比同类普通工艺生产的糙面防滑土工膜防滑性能提高近3倍。膜面柱点由特制模型压辊压延而成，柱点分布均匀，美观，提高摩擦系数，且膜面正反两面可由不同材质，不同颜色热融成一体，在工程应用中可根据地质条件、工程要求设置产品正反面。

HDPE column point rough surface geomembrane can be divided into single column point geomembrane and double column point geomembrane according to their morphology. On the basis of retaining the excellent mechanical properties, good elongation and stable chemical properties of the original resin itself, the products produced by the production process enhance the tensile, wear and puncture properties of the products by adding a certain proportion of functional additives through melting, extrusion, calendaring, drawing and other processes. The mechanical property of the product is nearly 3 times higher than that of the rough surface anti-slip geomembrane produced by the same ordinary process. The column points of the film surface are calended by a special model roller, the column points are evenly distributed, beautiful, and the friction coefficient is improved. The positive and negative sides of the film surface can be thermally melted by different materials and different colors, and the front and back sides of the product can be set according to geological conditions and engineering requirements in engineering applications.



性能特点 Performance characteristics

柱点外表美观，均匀分布摩擦系数高，具有防渗、防滑的作用，便于施工，特别适用于斜坡、陡坡及重直防渗，提高工程稳定性。

Column point appearance is beautiful, uniform distribution of high friction coefficient, with anti-seepage, anti-slip role, easy to construction, especially suitable for slope, steep slope and double straight anti-seepage, improve the stability of the project.

作用用途 Function and use

主要应用于垃圾填埋场、污水废液处理、水利环保、尾矿库或废渣飞灰填埋处理场作为防渗漏材料。

It is mainly used in landfill, sewage waste liquid treatment, water conservancy and environmental protection, tailings pond or waste slag fly ash landfill as anti-leakage material.

产品规格 Product Specifications

厚度：0.8mm-3.0mm 幅宽：1m-8m

卷长：50m-100m 也可按照客户要求定做。

Thickness: 0.8mm-3.0mm Width: 1m-8m
Volume length: 50m-100m can also be customized according to customer requirements.



HDPE 光面土工膜

HDPE Smooth surface geomembrane

产品介绍 Product Introduction

HDPE光面土工膜由95%的原生树脂加热稳定剂、抗氧化剂经吹塑工艺或者压延工艺生产而成，具有防渗和隔离作用。

HDPE smooth geomembrane is produced by 95% of the original resin heating stabilizer and antioxidant through blow molding process or calendering process, which has the effect of impermeability and isolation.

作用用途 Function and use

环保工程：垃圾填埋场、污水处理厂、化工废水池、电厂调节池、工业/医疗废弃物填埋、灰渣场、蒸发塘防渗。
石油化工：石化炼油厂储油罐、油井污泥池、化学反应池、沉淀池、尾矿坝的底衬、二次衬层防渗。
化工矿业：灰渣场、赤泥堆、堆浸池、溶解池、沉淀池、尾矿坝的底衬防渗。
水产养殖：养殖池、鱼塘、虾池的内衬，海参圈、护坡等防渗。
建筑工程：地铁、地下车库、屋顶花园、污水管、疏水箱涵防渗。
农林牧业：水库、蓄水池、饮用水池、灌溉系统的防渗。
盐 化 工：盐场结晶池、卤池苦盖、盐膜等防渗。

Environmental protection projects: landfill, sewage treatment plant, chemical wastewater tank, power plant regulation tank, industrial/medical waste landfill, ash and slag field, evaporation pond seepage prevention.
Petrochemical: petrochemical refinery oil storage tank, oil well sludge tank, chemical reaction tank, sedimentation tank, tailings dam bottom lining, secondary lining anti-seepage.
Chemical mining: ash and slag field, red mud pile, pile leaching pool, dissolution pool, sedimentation tank, tailings dam bottom lining seepage prevention.
Aquaculture: the lining of aquaculture ponds, fish ponds, shrimp ponds, sea cucumber rings, slope protection and other seepage prevention.
Construction project: subway, underground garage, roof garden, sewage pipe, drain water tank culvert seepage prevention.
Agriculture, forestry and animal husbandry: seepage prevention of reservoirs, cisterns, drinking tanks and irrigation systems.
Salt chemical: salt plant crystallization tank, bitterlid brine tank, salt film and other seepage prevention.

产品规格 Product Specifications

厚度：0.2mm-3.0mm 幅宽：1m-8m 卷长：50m-100m 也可按照客户要求定做。

Thickness: 0.2mm-3.0mm Width: 1m-8m
Volume length: 50m-100m can also be customized according to customer requirements.

技术指标 Technical Indicators

普通高密度聚乙烯HDPE土工膜 (GB/T 17643-2011 GH-1型技术指标)

Ordinary high density polyethylene HDPE geomemofilm (GB/T 17643-2011 GH-1 type technical specifications)

项目 Item	单位 Unit	指标 Technical data								
厚度 Thickness	mm	0.30	0.50	0.75	1.00	1.25	1.50	2.0	2.5	3.0
密度 Density	g/cm³	≥0.940								
拉伸屈服强度（纵、横向） Tensile stress At yield(MD/TD)	N/mm	≥4	≥7	≥10	≥13	≥16	≥20	≥26	≥33	≥40
拉伸断裂强度（纵、横向） Breaking strength(MD/TD)	N/mm	≥6	≥10	≥15	≥20	≥25	≥30	≥40	≥50	≥60
屈服伸长率（纵、横向） Yield elongation(MD/TD)	%	—	—	—	11					
断裂伸长率（纵、横向） Elongation at break(MD/TD)	%	600								
直角撕裂强度（纵、横向） Strength at tear(right-angle Tear)(MD/TD)	N	≥34	≥56	≥84	≥115	≥140	≥170	≥225	≥280	≥340
抗穿刺强度 Antipuncture strength	N	≥72	≥120	≥180	≥240	≥300	≥360	≥480	≥600	≥720
炭黑含量 Carbon black content	%	2.0~3.0								
炭黑分散性 Carbon black distribute	/	10个数据中3级不多于1个，4级，5级不允许 In 10 date,3 degree no more than 1,4 and 5 degree not allowed								
常压氧化诱导时间(OIT) Antioxidation time	min	≥60								
低温冲击脆化性能 Anti low temperature crispy ability	/	通过 Pass								
水蒸气渗透系数 Permeability coefficient of vappour	g.cm/ (cm².s.Pa)	≤1.0×10 ⁻¹³								
尺寸稳定性 Dimensional stability	%	±2.0								

环保高密度聚乙烯HDPE土工膜 (GB/T 17643-2011 GH-2S型技术指标)

Environmental protection High density polyethylene HDPE geomemofilm (GB/T 17643-2011 GH-2S type technical indicators)

项目 Item	单位 Unit	指标 Technical data						
厚度 Thickness	mm	0.75	1.0	1.25	1.5	2.0	2.5	3.0
密度 Density	g/cm³	≥0.940						
拉伸屈服强度（纵、横向） Tensile stress At yield(MD/TD)	N/mm	≥11	≥15	≥18	≥22	≥29	≥37	≥44
拉伸断裂强度（纵、横向） Breaking strength(MD/TD)	N/mm	≥20	≥27	≥33	≥40	≥53	≥67	≥80
屈服伸长率（纵、横向） Yield elongation(MD/TD)	%	≥12						
断裂伸长率（纵、横向） Elongation at break(MD/TD)	%	≥700						
直角撕裂强度（纵、横向） Strength at tear(right-angle Tear)(MD/TD)	N	≥93	≥125	≥160	≥190	≥250	≥315	≥375
抗穿刺强度 Antipuncture strength	N	≥240	≥320	≥400	≥480	≥640	≥800	≥960
拉伸负荷应力开裂 Tensile load stress cracking	h	≥300						
炭黑含量 Carbon black content	%	2.0-3.0						
炭黑分散性 Carbon black distribute	/	10个数据中3级不多于1个，4级，5级不允许 In 10 date,3 degree no more than 1,4 and 5 degree not allowed						
氧化诱导时间(OIT) Antioxidation time	min	常压氧化诱导时间≥100 normal pressure oxidation time						
		高压氧化诱导时间≥400 high pressure oxidation time						
85℃热老化 85°C Heat anti-aging	%	≥55						
抗紫外线 Uvioresistant	%	50						
厚度极限偏差 Thickness limit deviation	%	-10						

垃圾填埋场用光面HDPE土工膜 (CJ/T 234-2006技术指标) （等效于美国GRI-GM13标准）

Plain HDPE geomembrane for landfills (CJ/T 234-2006 Technical Index) (equivalent to the US GRI-GM13 standard)

项目 Item	单位 Unit	指标 Technical data						
厚度 Thickness	mm	0.75	1.0	1.25	1.5	2.0	2.5	3.0
密度 Density	g/cm³	≥0.939						
拉伸屈服强度（纵、横向） Tensile stress At yield(MD/TD)	N/mm	≥11	≥15	≥18	≥22	≥29	≥37	≥44
拉伸断裂强度（纵、横向） Breaking strength(MD/TD)	N/mm	≥20	≥27	≥33	≥40	≥53	≥67	≥80
屈服伸长率（纵、横向） Yield elongation(MD/TD)	%	≥12						
断裂伸长率（纵、横向） Elongation at break(MD/TD)	%	≥700						
直角撕裂强度（纵、横向） Strength at tear(right-angle Tear)(MD/TD)	N	≥93	≥125	≥156	≥187	≥249	≥311	≥374
抗穿刺强度 Antipuncture strength	N	≥240	≥320	≥400	≥480	≥640	≥800	≥960
耐环境应力开裂 Environmental stress crack resistance	h	≥300						
炭黑含量 Carbon black content	%	2.0-3.0						
炭黑分散性 Carbon black distribute	/	10个数据中3级不多于1个，4级，5级不允许 In 10 date,3 degree no more than 1,4 and 5 degree not allowed						
氧化诱导时间(OIT) Antioxidation time	min	常压氧化诱导时间≥100 normal pressure oxidation time						
		高压氧化诱导时间≥400 high pressure oxidation time						
85℃热老化 85°C Heat anti-aging	%	≥55						
抗紫外线 Uvioresistant	%	50						
尺寸稳定性 Dimensional stability	%	±2.0						

养殖防渗膜

Culture impermeable membrane

产品介绍 Product Introduction

养殖防渗膜具有抗拉伸、抗冲击、抗撕裂、强度强、耐静水压高、抗紫外线、防渗水性能好等特点，特别适合应用于鱼塘防渗、虾塘防渗、养殖泥鳅池防渗等工程。用养殖防渗膜覆盖整个鱼虾池或池底，可以使池底与池水隔开，对高低位养虾池防渗漏、病毒污染、抗微生物侵蚀等具有显著效果。由于养殖防渗膜光滑，不仅消毒、清淤方便，也有利于防止底部病原的传播，缩短清理虾塘底部和晒塘的时间。

The culture impermeable membrane has the characteristics of tensile resistance, impact resistance, tear resistance, strong strength, high hydrostatic pressure resistance, ultraviolet resistance, good impermeable water performance, etc., especially suitable for application in fish pond impermeable, shrimp pond impermeable, and aquaculture loach pond impermeable projects. Covering the whole fish and shrimp pond or the bottom with culture impermeable film can separate the bottom of the pond from the water, which has a remarkable effect on the anti-seepage, virus pollution and anti-microbial erosion of the high-low shrimp pond. Because the culture impermeable film is smooth, it is not only convenient for disinfection and dredging, but also conducive to preventing the spread of pathogens at the bottom and shortening the time for cleaning the bottom of the shrimp pond and drying the pond.

水产养殖防渗膜施工方案 Aquaculture impervious membrane construction scheme

- A、与铺设无关人员不得进入施工现场。
- B、铺设使用的方法和设备，必须不损坏防渗膜或其下土工布和基底。
- C、施工人员在施工现场施工时必须穿不损坏防渗膜的鞋子。
- D、必须有足够的压载物或锚固物以防止防渗膜被风吹起。
- E、防渗膜铺设应平顺、贴实、尽量减少褶皱，铺设后及时压载或锚固。
- F、合理的选择铺设方向，尽可能减少接缝受力。
- G、合理布局每片材料的位置，力求接缝要少。
- H、在铺设过程中防止任何因素破坏防渗膜，铺设工具不得对防渗膜产生损害。
- I、在坡脚 1.5m 范围内坡度大于 10% 的坡面上不得有横向接缝。



- A. Personnel unrelated to laying shall not enter the construction site.
- B. The method and equipment used for laying must not damage the impermeable film or its geotextile and substrate.
- C. Construction personnel must wear shoes that do not damage the impermeable film during construction at the construction site.
- D. there must be sufficient ballast or anchor to prevent the impermeable film from being blown up by the wind.
- E. anti-seepage film laying should be smooth, solid, as far as possible to reduce the fold, after laying in time ballast or anchorage.
- F. reasonable choice of laying direction, as far as possible to reduce the joint stress.
- G. reasonable layout of the position of each piece of material, and strive to have fewer joints.
- H. in the laying process to prevent any factor damage to the impermeable film, laying tools must not cause damage to the impermeable film.
- I. There shall be no transverse joint on the slope with a slope slope greater than 10% within 1.5m of the slope foot.

产品规格 Product Specifications

厚度：0.2mm-3.0mm 幅宽：1m-8m 卷长：50m-100m 也可按照客户要求定做。

Thickness: 0.2mm-3.0mm Width: 1m-8m
Volume length: 50m-100m can also be customized according to customer requirements.

技术指标 Technical Indicators

低密度聚乙烯LDPE土工膜（GB/T 17643-2011 GL-1型技术指标）

Low density polyethylene LDPE geomembrane (GB/T 17643-2011 GL-1 type technical indicators)

项目 Item	单位 Unit	指标 Technical data								
厚度 Thickness	mm	0.30	0.50	0.75	1.00	1.25	1.50	2.0	2.5	3.0
密度 Density	g/cm³	≥0.939								
拉伸断裂强度（纵、横向） Breaking strength(MD/TD)	N/mm	≥6	≥9	≥14	≥19	≥23	≥28	≥37	≥47	≥56
断裂伸长率（纵、横向） Elongation at break(MD/TD)	%	≥560								
直角撕裂强度（纵、横向） Strength at tear(right-angle Tear)(MD/TD)	N	≥27	≥45	≥63	≥90	≥108	≥135	≥180	≥225	≥270
抗穿刺强度 Antipuncture strength	N	≥52	≥84	≥135	≥175	≥220	≥260	≥350	≥435	≥525
炭黑含量 Carbon black content	%	2.0~3.0								
炭黑分散性 Carbon black distribute	/	10个数据中3级不多于1个，4级，5级不允许 In 10 data,3 degree no more than 1,4 and 5 degree not allowed								
常压氧化诱导时间(OIT) Antioxidation time	min	≥60								
低温冲击脆化性能 Anti low temperature crispy ability	/	通过 Pass								
水蒸气渗透系数 Permeability coefficient of vappour	g.cm/(cm².s.Pa)	≤1.0×10 ⁻¹³								
尺寸稳定性 Dimensional stability	%	±2.0								

短丝土工布

Short Nonwoven Geotextile

产品介绍 Product Introduction

短丝土工布是无纺布机械以涤纶短纤维为主要原料，经开松、梳理、铺网、针刺等工艺生产而成。

Staple geotextile is non-woven fabric machinery with polyester staple fiber as the main raw material, by opening, carding, laying nets, needling and other processes produced.



性能特点 Performance characteristics

- 强力高，由于使用塑料纤维，在干湿状态下都能保持充分的强力和伸长。
- 耐腐蚀，在不同的酸碱度的泥土水中能长久的耐腐蚀。
- 透水性好，在纤维间有空隙，故有良好的渗水性能。
- 抗微生物性好，对微生物、虫蛀均不受损害。
- 施工方便，由于材质轻、柔，故运送、铺设、施工方便。
- 重量轻、成本低、耐腐蚀、具有反滤、排水、隔离、增强等良性能。

High strength, due to the use of plastic fibers, can maintain sufficient strength and elongation in wet and dry conditions.
Corrosion resistance, long-term corrosion resistance in soil and water with different pH levels.
Good water permeability, there is a gap between the fibers, so it has good water seepage performance.
Good resistance to microorganisms, insects are not damaged.
Convenient construction, because the material is light and soft, it is convenient for transportation, laying and construction.
Light weight, low cost, corrosion resistance, with reverse filtration, drainage, isolation, enhancement and other benign properties.

产品规格 Product Specifications

克重：100g-1000g 幅宽：1m-8m 卷长：50m-100m 也可按照客户要求定做。

G weight: 100g-1000g Width: 1m-8m
Volume length: 50m-100m can also be customized according to customer requirements.

技术指标 Technical Indicators

短纤针刺非织造土工布技术指标（GB/T 17638-1998）

Technical specifications of staple fiber needled nonwoven geotextiles (GB/T 17638-1998)

项目 Item	规格 specification										
	100	150	200	250	300	350	400	450	500	600	800
单位面积质量偏差/% Weight variation	-8	-8	-8	-8	-7	-7	-7	-7	-6	-6	-6
厚度 mm thickness	0.9	1.3	1.7	2.1	2.4	2.7	3.0	3.3	3.6	4.1	5.0
幅宽偏差 % width variation	-0.5										
纵向断裂强度（kN/m）≥ Breaking strength(MD/TD)	2.5	4.5	6.5	8.0	9.5	11.0	12.5	14.0	16.0	19.0	25.0
断裂伸长率 % Elongation at break	25~100										
CBR顶破强力 kN ≥ CBR Mullen Burst Strength	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.2	4.0
纵向向撕破强力 kN ≥ Tear Strength(MD/TD)	0.08	0.12	0.16	0.20	0.24	0.28	0.33	0.38	0.42	0.46	0.60
等效孔径 Sieve size	0.07~0.2										
垂直渗透系数 Vertical permeability coefficient	K× (10 ⁻¹ ~10 ⁻³)										

短纤针刺非织造土工布技术指标（GB/T 17638-2017）

Technical specifications of staple fiber needled nonwoven geotextiles (GB/T 17638-2017)

项目 Item	标称断裂强度/(kN/m) Nominal breaking strength								
	3	5	8	10	15	20	25	30	40
纵向断裂强度（kN/m）≥ Breaking strength(MD/TD)	3.0	5.0	8.0	10.0	15.0	20.0	25.0	30.0	40.0
标称断裂强度对应伸长率 % Correspondding elongation of Nominal fracture strength	20~100								
顶破强力kN ≥ bursting strength	0.6	1.0	1.4	1.8	2.5	3.2	4.0	5.5	7.0
纵向向撕破强力 kN≥ Tear Strength(MD/TD)	0.10	0.15	0.20	0.25	0.40	0.5	0.65	0.80	1.00
等效孔径O ₉₀ (O ₉₅), mm Sieve size	0.07~0.20								
垂直渗透系数 cm/s Vertical permeability coefficient	K× (10 ⁻¹ ~10 ⁻³) 其中：K=1.0-9.9								
幅宽偏差率 % Width deviation rate	±5								
单位面积质量偏差率 % deviation rate of mass per unit area	±5								
厚度偏差率 % Thickness deviation rate	±10								
抗酸碱性能（强力保持率）%≥ Acid-base resistance (strong retention)	80								
抗氧化性能（强力保持率）%≥ Antioxidant properties (strong retention)	80								
抗紫外线性能（强力保持率）%≥ Uv resistance (strong retention)	80								

高强丙纶针刺土工布

High-strength polypropylene needle-punched geotextile

产品介绍 Product Introduction

以超高强丙纶短纤维为主要原料，采用非织造工艺生产而成，具有隔离、防护、过滤、排水缓冲等功能。

Product Introduction: Made from ultra-high strength polypropylene staple fibers as the main raw material and produced through nonwoven fabric technology, it features functions such as isolation, protection, filtration, drainage and buffering.

产品规格 Product Specifications

SNGPP100-SNGPP1200 幅宽 1m ~8m, 长度可根据用户要求订制。

Product Specifications: SNGPP100 - SNGPP1200, Width: 1m to 8m, Length can be customized according to customer requirements.

产品特点 Product features

物理机械性能高于常规产品的2~3倍，相同克重的产品比重低；耐酸碱性能优良，热熔粘性好，耐磨耗性能强，特别适用于CRTSⅡ/Ⅲ型板式无砟轨道滑动层系统，减小轨道系统与桥梁面间的相互作用。

Product features: The physical and mechanical properties are 2 to 3 times higher than those of conventional products. Products of the same grammage have a lower specific gravity. They have excellent acid and alkali resistance, good hot melt adhesion, and strong wear resistance. They are particularly suitable for the sliding layer system of CRTS Ⅱ/Ⅲ type plate ballastless track, reducing the interaction between the track system and the bridge surface.

应用范围 Application scope

聚丙烯针刺非织造土工布主要用于客运专线铁路CRTSⅡ/Ⅲ型板式无砟轨道与梁面间设置的滑动层，及CRTSⅡ/Ⅲ型板式无砟轨道与摩擦板间隔离层，也可广泛应用于高速公路、铁路、港口、机场、沿海滩涂、围垦、环保等工程领域。

Application scope: Polypropylene needle-punched non-woven geotextile is mainly used for the sliding layer set between the CRTSⅡ/Ⅲ type slab ballastless track and the beam surface of the passenger dedicated line railway, as well as the isolation layer between the CRTSⅡ/Ⅲ type slab ballastless track and the friction plate. It can also be widely applied in engineering fields such as highways, railways, ports, airports, coastal mudflats, reclamation, and environmental protection.

技术指标 Technical Indicators

高强丙纶针刺土工布执行标准：科技基【2009】88号文

Standard for High-Strength Polypropylene Nonwoven Geotextile: Document No. [2009] 88 of the Science and Technology Bureau

序号NO.	项目 project	单位 unit	100	200	300	400	500	600	700
1	单位面积质量偏差 Unit area quality deviation	%	±6						
2	握持强度 Holding strength	纵向 lengthways	N	≥450	≥900	≥1200	≥1600	≥2000	≥2400
		横向 crosswise		≥450	≥900	≥1200	≥1600	≥2000	≥2400
3	梯形撕裂强度 Trapezoidal tear strength	纵向 lengthways	N	≥170	≥350	≥420	≥500	≥580	≥660
		横向 crosswise		≥170	≥350	≥420	≥500	≥580	≥660
4	CBR顶破强力 CBR impact strength	kN	≥1.3	≥2.5	≥3.5	≥4.3	≥5.5	≥6.5	≥9.0
5	断裂强度 breaking strength	纵向 lengthways	Kn/m	≥5.0	≥11	≥16	≥22	≥28	≥35
		横向 crosswise		≥5.1	≥11	≥16	≥22	≥28	≥35
6	断裂伸长率 elongation at break	纵向 lengthways	%	40~70			50~80		
		横向 crosswise							
7	刺破强力 Pierce with force	N	≥210	≥430	≥650	≥900	≥1200	≥1500	≥2500

热轧非织造土工布

Hot-rolled non-woven geotextile

产品介绍 Product Introduction

热轧土工布是一种以聚丙烯（PP）或聚酯（PET）等纤维为原料，经熔融纺丝、铺网后，通过热轧辊压制而成的单面或双面非织造土工合成材料。热烫工艺通过高温轧点定型（轧点温度约 200-220℃），使纤维结点形成“热定型结构”，冷却后尺寸稳定性显著提升。其纤维之间通过热粘合形成稳定的孔隙结构，具有良好的力学性能和工程适应性。

Hot-rolled geotextile is a type of non-woven geotechnical synthetic material made from fibers such as polypropylene (PP) or polyethylene terephthalate (PET), through melt spinning, laying, and then pressing with hot rolling rollers. The hot-pressing process forms a "heat-set structure" by applying high-temperature rolling (with a rolling temperature of approximately 200-220℃), resulting in significant improvement in dimensional stability after cooling. The fibers are bonded together through heat to form a stable pore structure, which possesses excellent mechanical properties and engineering adaptability.

产品规格 Product Specifications

幅宽：1m~6m 克重：100g/㎡~1000g/㎡ 卷长：50~100m也可按客户要求定做。

Width: 1m - 6m Weight: 100g/㎡ - 1000g/㎡ Roll length: 50 - 100m. Customization is also available upon customer request.

产品特点 Product Features

热轧处理后的土工布，其纤维或丝线在受控的高温下表面会发生部分熔融，然后在压力下重新固化粘合。使材料在纵向和横向均具有较高的抗拉强度，其具有外观平整，握持强度高，伸长率低，耐酸碱，耐磨损等特点。

After undergoing hot rolling treatment, the fibers or threads of the geotextile will partially melt on the surface under controlled high temperatures, and then re-solidify and bond under pressure. This results in the material having high tensile strength both in the longitudinal and transverse directions. It features a smooth appearance, high grip strength, low elongation rate, resistance to acid and alkali, and wear resistance.

应用范围 Application scope

- 1.可加工制作成环保生态袋、植树袋，用于公路、铁路、堤坝、河岸、景观等生态环保绿化工程。
- 2.铺设于路基填料与原地基之间，隔离不同粒径土层，避免因沉降差异导致路面开裂。
- 3.沥青路面基层下铺设热轧土工布，高温下其收缩率远小于非热烫工艺的土工布。
- 4.机场跑道地基加固，承受飞机起降的高频荷载，要求材料抗疲劳性能突出，热烫工艺的耐久性优势显著。

1. It can be processed into environmentally friendly ecological bags and tree planting bags, which are used in ecological and environmental protection greening projects such as roads, railways, embankments, riverbanks, and landscapes.
2. It is laid between the roadbed fill material and the original foundation to isolate different particle size soil layers, avoiding pavement cracking caused by settlement differences.
3. When laid under the asphalt pavement base layer, the hot-rolled geotextile has a much lower shrinkage rate than the geotextile processed by non-thermal treatment methods under high temperatures.
4. For airport runway foundation reinforcement, which needs to withstand the high-frequency loads of aircraft takeoff and landing, the material must have outstanding fatigue resistance, and the durability advantage of the thermal treatment process is significant.



长丝土工布 Filament geotextile

产品介绍 Product Introduction

聚酯长丝土工布是以PET或PP为原料，采用熔断纺丝、气流成网、针刺固结工艺生产而成的具有三维孔隙的土工织造物品。长丝土工布具有良好的力学功能，透水性好，并能抗腐蚀，抗老化，具有隔离、反滤、排水、保护、稳固、加筋等功能，能适应凹凸不平的基层，能抵抗施工外力破坏，蠕变小，长期荷载下仍能保持原有的功能。即使在将近 20℃的环境中短期暴露 其性能也几乎没有变化，经过大量的试验和实践证明，长丝土工布具有对各种自然土壤、水分和微生物的长期耐腐蚀性。

Polyester filament geotextile is made of PET or PP as raw material, and is produced by fusing spinning, air flow netting and needle consolidation. Filament geotextile has good mechanical function, good water permeability, corrosion resistance, anti-aging, isolation, reverse filtration, drainage, protection, stability, reinforcement and other functions, can adapt to uneven base, can resist construction external force damage, creep becomes smaller, long-term load can still maintain the original function. Even in the environment of nearly 20℃ short-term exposure to its performance is almost unchanged, after a large number of tests and practice has proved that filament geotextile has a variety of natural soil, water and microorganisms long-term corrosion resistance.

作用用途 Function and use

水利工程：海堤、江堤、湖堤达标工程；水库加固工程；围垦工程；防汛抢险。
公路铁路航空港工程：软基加固处理；边坡防护；路面防反射裂缝结构层；排水系统；绿化隔离带。
电气工程：核电站基础工程；火电灰坝工程；水电站工程。
用于公路、铁路、堤坝、沿海滩涂等工程的加筋，加固，反滤、隔离。
长丝土工布特别适用于盐碱沼泽、垃圾填埋场。

Water conservancy project: seawall, river dike, lake dike standard project; Reservoir strengthening project; Reclamation works; Flood prevention and rescue. Highway, railway and airport engineering: soft foundation reinforcement treatment; Slope protection; Pavement anti-reflective crack structure layer; Drainage system; Afforestation divider. Electrical engineering: basic engineering of nuclear power plant; Thermal power ash dam project; Hydropower project. For roads, railways, DAMS, coastal beaches and other projects reinforcement, reinforcement, filtration, isolation filament geotextile especially suitable for saline-alkali marsh, landfill.

产品规格 Product Specifications

克重：100g-800g 幅宽：1m-6m 卷长：50m-100m 也可按照客户要求定做。
G weight: 100g-800g Width: 1m-6m
Volume length: 50m-100m can also be customized according to customer requirements.



技术指标 Technical Indicators

长丝纺粘针刺非织造土工布技术指标（GB/T17639-2008）
Technical specifications of filament spunbonded needled nonwoven geotextiles (GB/T17639-2008)

项目 Item	指标 Technical data							
规格 specification	100	150	200	300	400	500	600	800
厚度 Thickness	0.8	1.2	1.6	2.2	2.8	3.4	4.2	5.5
纵横向断裂强度（kN/m）≥ Breaking strength(MD/TD)	4.5	7.5	10.0	15.0	20.0	25.0	30.0	40.0
纵横向标准强度对应伸长率 % Vertical and horizontal standard strength corresponds to elongation	40~80							
CBR顶破强力 kN ≥ CBR bursting strength	0.8	1.6	1.9	2.9	3.9	5.3	6.4	7.9
纵横向撕破强力 kN ≥ Tear Strength(MD/TD)	0.14	0.21	0.28	0.42	0.56	0.70	0.82	1.10
等效孔径O ₉₀ (O ₉₅), mm Sieve size	0.05~0.20							
垂直渗透系数 cm/s Vertical permeability coefficient	K×（10 ⁻¹ ~10 ⁻³ ）其中：K=1.0~9.9							
幅宽偏差 % Width deviation	-0.5							
单位面积质量偏差/% Weight deviation	-5							

长丝纺粘针刺非织造土工布技术指标（GB/T17639-2023）
Technical specifications of filament spunbonded needled nonwoven geotextiles (GB/T17639-2023)

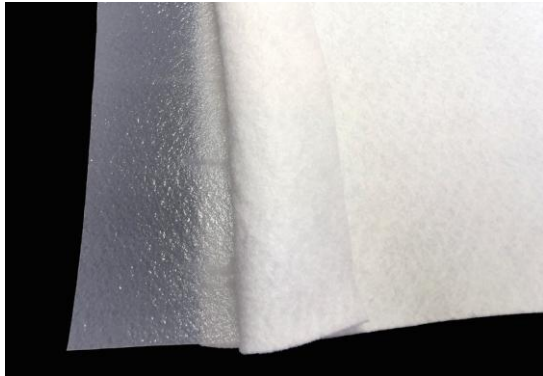
项目 Item		指标 Technical data								
		标称强度/(kN/m) Nominal strength								
		6	9	12	18	24	30	36	48	54
纵横向抗拉强度（kN/m）≥ Longitudinal and transverse tensile strength		6.0	9.0	12.0	18.0	24.0	30.0	36.0	48.0	54.0
纵横向最大负荷下伸长率 /% Elongation under maximum load in vertical and horizontal direction		30~80								
CBR顶破强力 kN ≥ CBR bursting strength		0.9	1.6	1.9	2.9	3.9	5.3	6.4	7.9	8.5
纵横向撕破强力 kN ≥ Tear Strength(MD/TD)		0.15	0.22	0.29	0.43	0.57	0.71	0.83	1.10	1.25
等效孔径O ₉₀ (O ₉₅), mm Sieve size		0.05~0.30								
垂直渗透系数 cm/s Vertical permeability coefficient		K×（10 ⁻¹ ~10 ⁻³ ）其中：K=1.0~9.9								
幅宽偏差率 %≥ Width deviation		-0.5								
单位面积质量偏差/% ≥ Weight deviation		-5								
厚度偏差率/% ≥ Thickness deviation rate		-10								
厚度变异系数（CV）/% ≤ Thickness variation coefficient (CV)		10								
纵横向断裂强力（抓样发）/kN Vertical and horizontal breaking strength		0.3	0.5	0.7	1.1	1.4	1.9	2.4	3.0	3.5
动态穿孔 [®] Dynamic punch	破洞直径/mm≤ Hole diameter	37.0	33.0	27.0	20.0	17.0	14.0	11.0	9.0	7.0
抗紫外线性能（氙弧灯发） [®] Uv resistance (xenon arc lamp) [®]	纵横向强力保持率/%≥ Vertical and horizontal strength retention	70								
抗紫外线性能（荧光紫外灯发） [®] Uv resistance (fluorescent UV lamp)a	纵横向强力保持率/%≥ Vertical and horizontal strength retention	80								

复合土工膜 composite geomembrane

产品介绍 Product Introduction

复合土工膜是用土工织物与土工膜复合而成的不透水材料，主要用于防渗、隔离，按照结构形式可分为为一布一膜、两布一膜和三布两膜等，具有抗拉、抗撕裂、顶破等物理力学性能指标高，能满足水利、市政、建筑、交通、地铁、隧道等工程需要。由于其选用高分子材料且生产工艺中添加了防老化剂，故可在非常规温度环境中使用。是由一层土工织物与一层高分子材料(一般为膜材)经过压延或热熔复合而成的土工合成材料。

Composite geomembrane is an impervious material composed of geotextile and geomembrane, which is mainly used for impermeability and isolation. According to the structural form, it can be divided into one cloth and one membrane, two cloth and three cloth and two membranes, etc., with high physical and mechanical performance indicators such as tensile resistance, tear resistance and roof breaking, which can meet the needs of water conservancy, municipal, construction, transportation, subway, tunnel and other projects. Due to the selection of polymer materials and the addition of anti-aging agents in the production process, it can be used in unconventional temperature environments. It is a geosynthetic material composed of a layer of geotextile and a layer of high molecular material (generally membrane material) by calendering or hot melting composite.



性能特点 Performance characteristics

抗拉、抗撕裂、顶破等物理指标高，产品具有强度高、延伸性能较好，变形模量大，耐酸碱、抗腐蚀、耐老化，膜布复合结构形式使其不但具有土工膜的防渗、隔离作用，还具有土工布的加筋、防护、排水反滤作用。

Tensile resistance, tear resistance, top breaking and other physical indicators are high, the product has high strength, good extension performance, large deformation modulus, acid and alkali resistance, corrosion resistance, aging resistance, membrane fabric composite structure form makes it not only has the impermeability of geomembrane, isolation, but also has the reinforcement, protection, drainage and filtration effect of geotextile.

作用用途 Function and use

1. 路基，屋面防渗。
2. 江堤、湖坝、尾矿坝、污水坝库区、渠道、蓄液池(坑、矿)。
3. 公路、高速公路、铁路的地基。
4. 堤、坝水平防渗铺盖、地基垂直防渗层、施工围堰、废料场。
5. 海水、淡水养殖场。
6. 垃圾填埋场、污水或废渣处理防渗。
7. 地铁、地下室和隧道、隧洞防渗衬砌。

1. roadbed, roof seepage prevention.
2. River dike, lake dam, tailings dam, sewage dam reservoir area, channel, liquid storage pond (pit, mine).
3. the foundation of roads, highways, railways.
4. embankment, dam horizontal anti-seepage blanket, foundation vertical anti-seepage layer, construction cofferdam, waste yard.
5. Seawater and freshwater farms.
6. landfill, sewage or waste treatment seepage.
7. subway, basement and tunnel, tunnel anti-seepage lining.

产品规格 Product Specifications

克重：200g-1000g 幅宽：1m-6m 卷长：50m-100m 也可按照客户要求定做。

G weight: 200g-1000g Width: 1m-6m
Volume length: 50m-100m can also be customized according to customer requirements.



技术指标 Technical indicators

复合土工膜技术指标 (GB/T 17642-2025)

(17642-2025)Technical Specifications for Composite Geomembrane (GB/T 17642-2025)

非织造复合土工膜通用指标要求

General Index Requirements for Nonwoven Composite Geomembrane

项目 project		膜材标称厚度/mm Nominal thickness of membrane material / mm							
		0.30	0.40	0.50	0.60	0.70	0.80	1.00	
1	膜材平均厚度/mm ≥ Average thickness of membrane material / mm ≥		0.30	0.40	0.50	0.60	0.70	0.80	1.00
2	成品单位面积质量偏差率/%≥ Percentage of area-specific quality deviation of the finished product / % ≥		-5						
3	成品单位面积质量变异系数（ CV值 ）/%≤ Coefficient of variation (CV value) of unit area quality of the finished product (%) ≤		10						
4	耐静水压/MPa≥ Resistant to static water pressure / MPa ≥	一布一膜 One fabric, one coating	0.5	0.6	0.8	1.0	1.2	1.4	1.6
		二布一膜 Two layers of fabric and one layer of membrane	0.6	0.9	1.0	1.2	1.4	1.6	1.8
5	剥离强度(N/cm)≥ Peel strength (N/cm) ≥		6						
6	膜材灰分含量/%≤ Fiber material ash content/% ≤		1						
7	纵横向最大负荷下伸长率/% Strain at maximum load in both longitudinal and transverse directions / %		30-100						
8	幅宽偏差率/%≥ Width deviation rate /% ≥		0						

短纤针刺非织造土工布复合土工膜

Short fiber needle-punched non-woven geotextile composite geotextile membrane

项目 project		指标 index							
标称强度/ (Kn/m) Nominal strength / (kN/m)		5	8	10	12	14	16	18	20
1	纵横向抗拉强度/ (Kn/m) ≥ Longitudinal and transverse tensile strength/(kN/m) ≥	5.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
2	顶破强力/kN≥ Breaking strength / kN ≥	1.1	1.5	1.9	2.2	2.5	2.8	3.0	3.2
3	纵横向撕破强力/Kn≥ Longitudinal and transverse tearing strength / Kn ≥	0.15	0.25	0.32	0.40	0.48	0.56	0.62	0.70
4	抗酸碱性能 纵横向强力保持率/%≥ Antacid and alkali resistance Longitudinal and transverse strength retention rate/% ≥	90							

长丝纺粘针刺非织造土工布复合土工膜

Long filament spunbond needle-punched nonwoven geotextile composite geotextile membrane

项目 project		指标 index								
标称强度/ (Kn/m) Nominal strength / (kN/m)		10	12	14	16	18	20	25	30	40
1	纵横向抗拉强度/ (Kn/m) ≥ Longitudinal and transverse tensile strength/(kN/m) ≥	10.0	12.0	14.0	16.0	18.0	20.0	25.0	30.0	40.0
2	顶破强力/kN≥ Breaking strength / kN ≥	2.1	2.4	2.7	3.0	3.2	3.4	3.6	4.0	5.0
3	纵横向撕破强力/Kn≥ Longitudinal and transverse tearing strength / Kn ≥	0.34	0.42	0.50	0.58	0.64	0.72	0.80	1.0	1.2
4	抗酸碱性能 纵横向强力保持率/%≥ Antacid and alkali resistance Longitudinal and transverse strength retention rate/% ≥	90								

塑料扁丝 编织 土工布 Plastic flat silk woven geotextile

产品介绍 Product Introduction

编织布是以聚丙烯扁丝为原料，由两组平行的纱线(或扁丝)组成，一组沿织机的纵(织物行进的方向)称经纱，另一组横向布置称为纬纱。用不同的编制编织设备和工艺将经纱与纬纱交织在一起织成布状，可根据不同的使用范围编织成不同的厚度与密实度，一般编织土工布较薄纵横向都具有抗拉度(经度大于纬度)，具有很好的稳定性能。

The woven fabric is made of polypropylene flat yarn and consists of two sets of parallel yarns (or flat yarn), one set along the longitudinal (direction of the fabric travel) of the loom is called the warp, and the other set of lateral arrangements is called the weft. With different weaving equipment and processes, the warp and weft are interwoven into cloth, which can be woven into different thicknesses and compactness according to different ranges of use. Generally, woven geotextiles are thinner and have tensile strength (longitude is greater than latitude) and have good stability.

性能特点 Performance characteristics:

产品特点重量轻、强度高、延伸率小、整体性好、施工方便、加固性能良好等。

Product features Light weight, high strength, small elongation, good integrity, convenient construction, good reinforcement performance, etc.

产品规格 Product Specifications

- 1、克重范围：90-400g/m²；
- 2、宽幅范围：1-6m²；
- 3、颜色：按客户要求(以黑、白为主)；

- 1.gram weight range: 90-400g/m²；
- 2.wide range: 1-6m²；
- 3.color: according to customer requirements (mainly black and white);

作用用途 Function and use

加筋加固、排水隔离、反滤防护、农业抑草。广泛应用于水利工程、公路工程、铁路工程、沿海滩涂、农业等工程。

Reinforcement reinforcement, drainage isolation, anti-filtration protection, agricultural grass suppression.Widely used in water conservancy projects, highway projects, railway projects, coastal beaches, agriculture and other projects.



技术指标 Technical indicators

塑料扁丝编织土工布技术指标 (GB/T17690-1999)

Plastic flat silk woven geotextile technical indicators (GB/T17690-1999)

项目 Item	指标 Technical data						
	20-15	30-22	40-28	50-35	60-42	80-56	100-70
经向断裂强力，kN/m≥ Breaking strength (LD)	20	30	40	50	60	80	100
纬向断裂强力，kN/m ≥ Breaking strength (TD)	15	22	28	35	42	56	70
经纬向伸长率 %≤ Elongation Rate (LD,TD)	28						
梯形撕破强力(纵向)kN≥ Trapezoid tear strength (LD)	0.3	0.45	0.5	0.6	0.75	1.0	1.2
顶破强力kN≥ bursting strength	1.6	2.4	3.2	4.0	4.8	6.0	7.5
垂直渗透系数，cm/s Vertical permeability coefficient	10 ⁻¹ ~10 ⁻⁴						
等效孔径O ₉₅ , mm Sieve size	0.08~0.5						
单位面积质量，g/m ² Unit weight	120	160	200	240	280	340	400
允许偏差值，% Allowable deviation value	±10						
抗紫外线强力保持率 % Uv resistance strength retention rate	按合同要求 As required by contract						

隧道 防水板 Tunnel waterproof plate

产品介绍 Product Introduction

隧道防水板生产工艺采用国内先进的两段共挤单螺杆挤出法生产，由原料树脂加入增强剂、抗氧化剂，经加热熔融、塑化、挤出成形、牵引后形成的板材，也可与穿好吊带的土工织物热合成一体，形成复合防水板；也可采用挤出压延法，即将树脂挤出机熔融塑化，从机头狭缝模口挤出熔融状的片坯与吊带融合一体，经辊筒压延冷却成光膜，或与穿好吊带的土工织物融合一体，经辊筒压延冷却成复合防水板材。

The tunnel waterproof plate production process adopts the domestic advanced two-stage co-extruded single screw extrusion method. The plate formed by adding the reinforcement agent and antioxidant agent to the raw material resin, after heating melting, plasticizing, extrusion forming and traction, can also be thermically synthesized with the geotextile wearing the suspension belt to form a composite waterproof plate. Extrusion calendering method can also be used, that is, the resin extruder is melted and plasticized, and the molten sheet blank is extruded from the slit die of the head and fused with the sling, which is rolled and cooled into a light film, or fused with the geotextile with the sling, and then rolled and cooled into a composite waterproof sheet.

性能特点 Performance characteristics

耐化学腐蚀、耐紫外线辐射；耐老化、耐磨性好；抗穿刺能力强；施工简便、无污染。

Resistant to chemical corrosion and ultraviolet radiation; Aging resistance, good wear resistance; Strong puncture resistance; Construction is simple and pollution-free.

作用用途 Function and use

新建铁路、公路、市政道路、轻轨交通建设(包括桥面、隧道)、屋面、地下工程的防水，水利建设、污水处理工程化工酸碱处理池等工程的防渗耐腐蚀、衬垫使用。

New railway, highway, municipal road, light rail transit construction (including bridge deck, tunnel), roof, underground engineering waterproofing, water conservancy construction, sewage treatment engineering chemical acid and alkali treatment pond and other engineering seepage resistance, corrosion resistance, liner use.

产品规格 Product Specifications

幅宽：2-6米 厚度：1.0mm-1.5mm 卷长：可按照客户要求定做。

Width: 2-6 meters Thickness: 1.0mm-1.5mm
Volume length: can be customized according to customer requirements.

技术指标 Technical Indicators

隧道专用EVA防水板 GB18173.1-2012

EVA waterproof Plate for Tunnel GB18173.1-2012

序号 No.	项目 Item	单位 Unit	技术指标 technical data
1	拉伸强度/Mpa tensile strength	常温 (23℃) ≥ normal temperature	Mpa 16
		高温 (60℃) ≥ high temperature	Mpa 6
2	拉伸伸长率/% tensile elongation	常温 (23℃) ≥ normal temperature	% 550
		低温 (- 20℃) ≥ low temperature	% 350
3	撕裂强度 ≥ tear strength	kN/m	60
4	不透水性 antipermeability	30min	0.3MPa 无渗漏 0.3MPa no leaking
5	低温弯折 Low temperature bend	/	- 35℃ 无裂纹 - 35℃ no crack
6	加热伸缩量 Heat expansion	延伸 ≤ elongation	mm 2.0
		收缩 ≤ contraction	mm 6.0
7	热空气老化 (80℃×168h) air aging	拉伸强度保持率 ≥ rate of tensile strength	% 80
		拉伸伸长率保持率 ≥ rate of break tensile strength	% 70
8	耐碱性[饱和Ca (OH) ₂ 溶液23℃×168h) anti-alkali	拉伸强度保持率 ≥ rate of tensile strength	% 80
		拉伸伸长率保持率 ≥ rate of break tensile strength	% 90
9	人工气候老化 artificial climate aging	拉伸强度保持率 ≥ rate of tensile strength	% 80
		拉伸伸长率保持率 ≥ rate of break tensile strength	% 70
10	粘结剥离强度 (片材与片材) Bond peel strength	标准实验条件 ≥ standard test	N/mm 1.5
		浸水保持率 (23℃×168h) ≥ soaking rate	% 70



钠基膨润土防水毯 (GCL) Geosynthetic clay liner

产品介绍 Product Introduction

膨润土防水毯是一种新型土工合成材料。由膨润土颗粒和相应的外加剂混合为原材料，经针刺工艺，把膨润土颗粒固定在土工布和塑料编织布之间而制成的毯状防水卷材。膨润土防水毯既具有土工材料的特性，又具有防水(渗)性能。膨润土防水毯作为一种新型环保生态复合防渗材料，以其独特的防渗漏性能已在水利、环保、交通、铁道、民航等土木工程中得到广泛使用。常见于垃圾填埋场的基础处理和封场，人工湖、水库、渠道、河流、屋顶花园的防渗，地下室、地铁、隧道、地下通道等名类地下建筑物的防渗。

Bentonite waterproof blanket is a new type of geosynthetic material. The blanket waterproof sheet is made by fixing the bentonite particles between the geotextile and the plastic woven cloth by needling process, which is mixed with the bentonite particles and the corresponding admixtures as raw materials. Bentonite waterproof blanket not only has the characteristics of geotechnical materials, but also has waterproof (seepage) performance. Bentonite waterproof blanket, as a new type of environmental protection and ecological composite impermeable material, has been widely used in water conservancy, environmental protection, transportation, railway, civil aviation and other civil engineering for its unique anti-seepage performance. It is commonly used in the foundation treatment and sealing of landfill sites, the seepage prevention of artificial lakes, reservoirs, channels, rivers, roof gardens, and the seepage prevention of underground buildings such as basements, subways, tunnels, and underground passages.

产品优势 Product advantages

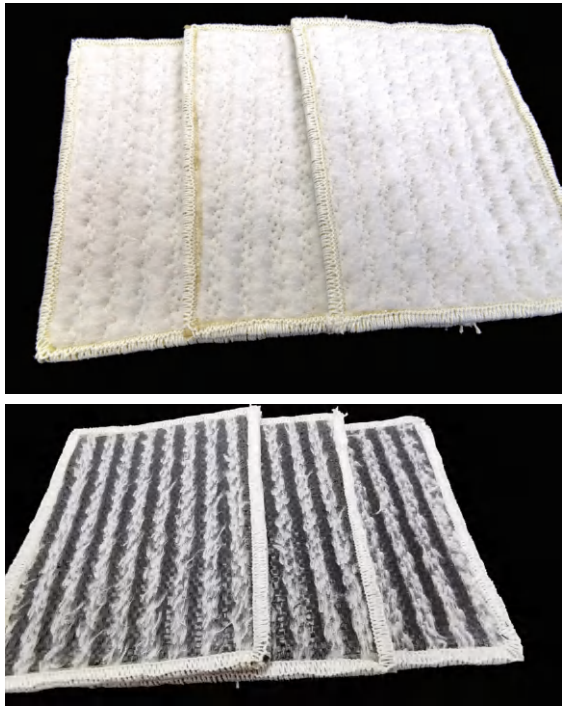
- 密实性——钠基膨润土在水压状态下形成高密度横隔膜，厚度约3mm时，它的透水性相当于100倍的30cm厚度粘土的密实度，具有很强的自保水性能。
- 防水性能——因为钠基膨润土系天然无机材料，即使经过很长时间或周围环境发生变化，也不会发生老化或腐蚀现象，因此防水性能持久。
- 施工工期短——和其他防水材料比较，施工相对比较简单，不需要加热和粘贴。只需将膨润土粉末和钉子、垫圈等进行连接和固定。施工后不需要特别的检查，如果发现防水缺陷也容易维修。GCL是现有防水材料中施工工期最短的。
- 绿色环保——膨润土为天然无机材料，对人体无害无毒，对环境没有特别的影响，具有良好的环保性能。

Compactness - sodium bentonite forms a high-density diaphragm under water pressure. When the thickness is about 3mm, its water permeability is equivalent to 100 times the compactness of 30cm thick viscose, and it has a strong self-water retention performance. Waterproof performance - Because sodium bentonite is a natural inorganic material, even after a long time or changes in the surrounding environment, there will be no aging or corrosion phenomenon, so the waterproof performance is durable. Short construction period - compared with other waterproof materials, the construction is relatively simple and does not require heating and pasting. Just use bentonite powder and nails, washers, etc. to connect and fix. No special inspection is required after construction, and it is easy to repair if waterproofing defects are found. GCL is the shortest construction period of existing waterproof materials. Green environmental protection - Bentonite is a natural inorganic material, harmless and non-toxic to the human body, no special impact on the environment, with good environmental performance.

产品特点 Product features

- 具有优异的防水防渗性能，抗渗静水压可达1.0MPa以上，渗透系数5x10-9cm/s，膨润土是天然无机材料，不会发生老化反应，耐久性好；且不会对环境造成任何不利影响。
- 具有土工布材料的全部特性，如隔离、加固、防护等，施工简便且不受施工环境温度的限制，0℃以下也可施工。施工时只需将防水毯平铺在地上，立面或斜面施工时，用钉子和垫圈将其固定，并按要求搭接即可。
- 容易修补；即使在防水(渗)施工结束以后，如防水层发生意外破损，只要对破损的部位加以简单的修补，就可重新获得完美如初的防水性能。

With excellent waterproof and impermeable performance, impermeable hydrostatic pressure can reach 1.0MPa or more, permeability coefficient 5x10-9cm/s, bentonite is a natural inorganic material, will not occur aging reaction, good durability; Without any adverse impact on the environment. With all the characteristics of geotextile materials, such as isolation, reinforcement, protection, etc., the construction is simple and not limited by the construction environment temperature, and can also be constructed below 0℃. During construction, just lay the waterproof blanket on the ground, and fix it with nails and washers when the facade or slope is constructed, and lap it as required. Easy to repair; Even after the completion of waterproof (seepage) construction, if the waterproof layer is accidentally damaged, as long as the damaged part is simply repaired, the perfect waterproof performance can be regained.



作用用途 Function and use

用途：垃圾填埋场、人工湖、河道治理等，其他水利工程。
作用：防水、防渗。

Uses: landfill, artificial lake, river treatment, other water conservancy projects.
Function: waterproof, anti-seepage.



产品规格 Product Specifications

克重：3000g-6000g 幅宽：3m-6m
卷长：30m-50m 也可按照客户要求定做。

Gram weight: 3000g-6000g Width: 3m-6m
Roll length: 30m-50m can also be customized according to customer requirements.



技术指标 Technical Indicators

膨润土防水毯技术指标 (JG/T193-2006)
GCL (geosynthetic clay liner) specifications (JG/T193-2006)

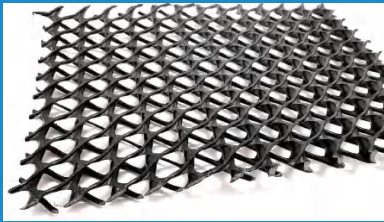
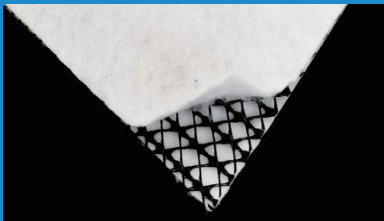
项目 Item		指标 Technical data		
		GCL-NP	GCL-OF	GCL-AH
膨润土防水毯单位面积质量/ (g/m²) The quality of bentonite waterproof blanket unit area		≥4000且不小于规定值 ≥4000 and not less than the specified value	≥4000且不小于规定值 ≥4000 and not less than the specified value	≥4000且不小于规定值 ≥4000 and not less than the specified value
膨润土膨胀指数/(ml/2g) Bentonite Swelling Index		≥24	≥24	≥24
吸蓝量 (g/100g) Blue Absorption Value		≥30	≥30	≥30
拉伸强度/ (N/100mm) tensile strength		≥600	≥700	≥600
最大负荷下伸长率% Elongation under maximum load		≥10	≥10	≥8
剥离强度 (N/100mm) peel strength	非织造布与编织布 Nonwovens and woven fabrics	≥40	≥40	——
	PE膜与非织造布 PE film and nonwovens	——	≥30	——
渗透系数 (m/s) permeability coefficient		≤5.0×10-11	≤5.0×10-12	≤5.0×10-12
耐静水压 Hydrostatic pressure		0.4Mpa, 1h, 无渗漏 0.4Mpa, 1h, no leakage	0.6Mpa, 1h, 无渗漏 0.6Mpa, 1h, no leakage	0.6Mpa, 1h, 无渗漏 0.6Mpa, 1h, no leakage
滤失量 /ml filter loss		≤18	≤18	≤18
膨润土耐久性 / (ml/2g) Bentonite durability		≥20	≥20	≥20

复合排水网 Three-dimensional composite geonet for drainage

产品介绍 Product Introduction

复合排水网是一种新型的排水土工材料。以高密度聚乙烯(HDPE)为原料，经特殊的挤出成型工艺加工而成，具有三层特殊结构。中间筋条刚性大，纵向排列，形成排水通道，上下交叉排列的筋条形成支撑防止土工布嵌入排水通道，即使在很高的荷载下也能保持很高的排水性能，具有“反滤——排水——透气——保护”综合性能。

Composite drainage network is a new type of geotechnical material for drainage. High density polyethylene (HDPE) as raw material, by special extrusion molding process processing, with three layers of special structure. The middle rib is rigid, vertically arranged, forming a drainage channel, and the upper and lower cross-arranged ribs form a support to prevent geotextiles from embedding in the drainage channel, which can maintain a high drainage performance even under a high load, and has the comprehensive performance of "reverse filtration - drainage - ventilation - protection".



性能特点 Performance characteristics

排水性强(相当于一米厚砾石排水)。抗拉强度高。减少土工织物嵌入网芯的机率，保持长期稳定的排水。长期承受高压载荷(能承受大约3000Ka的压缩载荷)，耐腐蚀、耐酸碱、使用寿命长。施工方便、缩短工期、降低成本。

Strong drainage (equivalent to one meter thick gravel drainage). High tensile strength. Reduce the probability of geotextile embedment in the mesh core and maintain long-term stable drainage. Long-term high-pressure load (can withstand about 3000Ka compression load), corrosion resistance, acid and alkali resistance, long service life. Construction is convenient, shorten the construction period and reduce the cost.

作用用途 Function and use

主要用于铁路、公路、隧道、市政工程、水库、护坡等排水工程中效果显著。

Mainly used in railway, highway, tunnel, municipal engineering, reservoir, slope protection and other drainage engineering effect is remarkable.

产品规格 Product Specifications

厚度：4mm-8mm 幅宽：3m 卷长：30m-50m 也可按照客户要求定做。
Thickness: 4mm-8mm Width: 3m Roll length: 30m-50m can also be customized according to customer requirements.

施工工艺 Construction process

调整土工排水网的方向，使材料卷的长度方向垂直于道路。复合土工排水网必须端接，相邻土工网芯上的土工布沿着材料卷搭接。把相邻的土工材料卷的土工网芯用白色或黄色的塑料扣或聚合物带子连接起来，从而连接材料卷。沿着材料卷的长度方向，每隔 3英尺用带子连接一次。

搭接的土工织物的方向要与填料堆放的方向一致。若复合排水网铺设在地基/基层和底基层之间，要进行连续楔形焊接。平头焊接或缝合，使搭接的土工织物上层得到固定。如果缝合，推荐使用平头缝法或一般缝法，以达到针脚长度的最低要求。

Adjust the direction of the geotechnical drainage network so that the length direction of the material roll is perpendicular to the road. The composite geodrainage network must be terminated, and the geotextile on the adjacent geomesh core is lapped along the material roll. The geomesh cores of adjacent geomaterial rolls are connected with white or yellow plastic buckles or polymer straps to connect the rolls. Connect with straps every 3 feet along the length of the roll of material.

The direction of the bonded geotextile should be consistent with the direction of the packing pile. If the composite drainage network is laid between the foundation/base and the base, continuous wedge welding should be carried out. Flat head welding or stitching to secure the top layer of the bonded geotextile. If stitched, it is recommended to use a flat head stitch or a general stitch to meet the minimum stitch length requirements.

技术指标 Technical Indicators

复合排水网技术指标 (CJ/T 452-2014)
Technical Specifications of Composite drainage Network (CJ/T 452-2014)

项 目 Item	技术指标 technical data	
	土工排水网 Geotechnical drainage network	土工复合排水网 Geotechnical composite drainage network
密度/ (g/cm³) Density	≥0.939	——
炭黑含量/% Carbon black content	2~3	——
纵向拉伸强度/ (kN/m) Longitudinal tensile strength	≥8.0	≥16.0
纵向导水率 (法向荷载500kPa、水力梯度0.1) / (m²/s) Longitudinal tensile strength longitudinal water conductivity (normal load 500kPa, hydraulic gradient 0.1)	≥3.0×10 ⁻³	≥3.0×10 ⁻⁴
剥离强度/ (kN/m) peel strength	——	≥0.17
土工布单位面积质量/ (g/m²) Unit area mass of geotextile	——	≥200
注：土工布技术指标应符合GB/T 17639的规定。 Note: The technical specifications of geotextiles shall comply with the provisions of GB/T 17639.		

护坡生态袋 Slope protection eco-bag

产品介绍 Product Introduction

生态袋是一种高强抗紫外线抗冻融耐酸碱的生态合成材料，是高新技术新型特种材料，具有高强抗UV 耐酸碱 抗腐蚀 抗冻融 作用可达到5年以上不降解，主要运用于建造柔性生态边坡。生态袋由丙纶无纺布（PP）或者聚酯长丝无纺布（PET）、涤纶无纺布为原材料制成的热烫针刺无纺布加工而成的袋子。按照指标主要常用为丙纶布生态袋、长丝布生态袋、涤纶布生态袋。生态袋经发展里面加草籽（羊茅、黑麦草、早熟禾等）又发展成为植草生态袋也称为植生袋、草籽袋等。生态袋规格一般为815mmX430mm/800mmX400mm/600mmX400mm,也可以根据客户要求定做。



Ecological bag is a kind of high-strength anti-ultraviolet anti-freeze thaw acid and alkali ecological synthetic material, is a new high-tech special material, with high-strength anti-UV acid and alkali anti-corrosion anti-freeze thaw effect can reach more than 5 years of non-degradation, mainly used in the construction of flexible ecological slope.

The bag is made of polypropylene non-woven fabric (PP) or polyester filament non-woven fabric (PET) and polyester non-woven fabric, which is made of hot needling non-woven fabric. According to the index, it is mainly used as polypropylene cloth ecological bag, filament cloth ecological bag and polyester cloth ecological bag. Ecological bags after the development of grass seeds (fescue, ryegrass, bluegrass, etc.) and developed into planting grass ecological bags, also known as planting bags, grass seed bags. Ecological bag specifications for 815 mmx400mm mmx430mm / 800/600 mmx400mm commonly, can also be customized according to customer requirements.

性能特点 Performance characteristics

一、抗潮湿

生态袋原材料不吸收水分，水分出现时不会破坏袋子，而袋子也不会变形，不溶于污染液体。

二、抗化学腐蚀（PH）

广泛研究测试表明生态袋对一定浓度的酸碱化学物品有很强的抵抗力，可用于大多数固体和严重污染地点。

三、抗生物降解和动物破坏

生态袋采用特殊配方材料，不支持、不吸收、不帮助菌类生长，不腐烂、不发霉、不变质。生态袋不会被昆虫和有关动物消化，不会成为啃齿动物（老鼠）、白蚁、蛀虫、壳虫、银鱼蛾等的食物。

四、抗紫高分子

生态袋可以承受150摄氏度高温而不融化，可以承受低气温-40摄氏度。

五、抗紫外线（UV）

生态袋含碳墨和其他抗UV成分。

六、这里以等效孔径举证说明：

1)、孔径太大（袋体，材料过薄）

2)、孔径太小（袋体材料过厚）

A.会对植被生长与根系延伸的形成阻碍，严重影响柔性边坡的结构稳定。

B.边坡静水压力因此而增大会使坡体坍塌。

First, resistance to moisture

The raw material of the ecological bag does not absorb water, and the water will not damage the bag when it appears, and the bag will not be deformed, and it is insoluble in polluted liquid.

Second, chemical corrosion resistance (PH)

Extensive research and testing have shown that the ecobag is highly resistant to certain concentrations of acid-base chemicals and can be used in most solids and heavily polluted sites.

3. Resistance to biodegradation and animal destruction

The ecological bag adopts special formula material, does not support, does not absorb, does not help the growth of fungi, does not rot, does not mold, does not deteriorate. The ecobag will not be digested by insects and related animals, and will not become food for gnawing animals (mice), termites, moths, shell worms, whitebait moths, etc.

Fourth, anti-violet polymer

The ecobag can withstand high temperatures of 150 degrees Celsius without melting, and can withstand low temperatures of -40 degrees Celsius.

5. Anti-ultraviolet (UV)

The biobags contain carbon ink and other UV resistant ingredients.

6. The equivalent aperture is used here to prove:

1), the aperture is too large (bag body, material is too thin)

2), the aperture is too small (bag body material is too thick)

A. It will hinder vegetation growth and root extension, and seriously affect the structural stability of the flexible slope.

B. The increase of slope hydrostatic pressure will cause slope collapse.

作用用途 Function and use

一、生态修复：1.河流两岸：人类和野生生物共存的自然岸带环境。2.矿山复绿：综合利用矿矸石，科学整治沉降区，绿化荒山，净化水气，开创矿山生态修复，荒山复绿新纪元。3.海湖滨岸、地表滑坡治理、涵洞口、排水沟、土壤侵蚀、灌溉系统等。4.人工湿地：生态修复。5.屋绿化

二、基础建设：1.道路护坡：铁路、公路护坡，适用于挖方边坡和填方边坡。2.河湖护坡：适用于河流、湖泊、水库边坡。3.特殊应用：军事设施与防洪应急、掩体、防洪堤坝等。

三、园林绿化住宅：1.垂直绿化、园林艺术；2.商业住宅小区；3.屋花园式绿化。

First, ecological restoration

1. Riverbanks: natural coastal environments where humans and wildlife coexist.

2. Mine greening: comprehensive utilization of mine gangue, scientific remediation of settling areas, greening of barren mountains, purification of water and gas, creating a new era of ecological restoration of mines and green restoration of barren mountains.

3. Waterfront, surface landslide treatment, culvert mouth, drainage ditch, soil erosion, irrigation system, etc.

4. Constructed wetland: ecological restoration.

5. House greening

2. Infrastructure

1. Road slope protection: railway, road slope protection, suitable for excavation slope and fill slope.

2. River and lake slope protection: suitable for river, lake, reservoir slope.

3. Special applications: military facilities and flood control emergency, shelters, flood control DAMS, etc.

Third, garden greening housing

1. Vertical greening and garden art;2. Commercial residential district;3. House garden type greening.



塑料排水板

plastic drainage plate

产品介绍 Product Introduction

采用挤出吸附等工艺压型成封闭突起的柱状、半锥状壳体，形成一种膜、壳连续，有立体空间和一定支撑刚度，液体和气体可以在其内流动排泄的板材。是一种潜在功能很多的功能性材料，使用中很方便地构筑出架空层，形成排水、排气通道达到隔音、隔振的功能。在土木建筑工程领域中可广泛用于建筑屋面系统的层内架空、种植屋面的排水透气，建筑地下室防水系统的排水保护，室内地面的防潮隔热保护，公路铁路隧道的排水保护等。在城市土地、空间，塑料排水板提供有价值的选择。

A cylindrical and semi-cone-shaped shell with a closed protrusion is formed by extrusion and adsorption process to form a plate in which the membrane and shell are continuous, with three-dimensional space and a certain support stiffness, and in which liquid and gas can flow and discharge. It is a functional material with many potential functions, and it is convenient to build an overhead layer to form drainage and exhaust channels to achieve sound insulation and vibration isolation functions. In the field of civil construction engineering, it can be widely used in the overhead of building roof system, drainage ventilation of planting roof, drainage protection of building basement waterproof system, moisture proof and heat insulation protection of indoor ground, drainage protection of highway and railway tunnels, etc. In urban land, space, plastic drainage board provides a valuable option.

性能特点 Performance characteristics

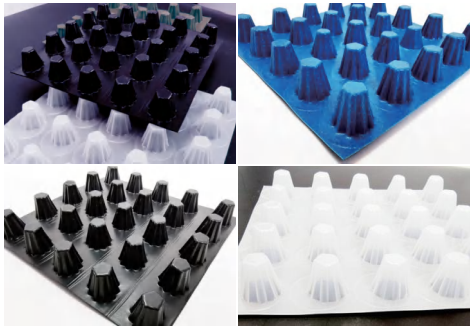
低成本、耐用、耐化学腐蚀、耐植物根系穿刺、应用功能多样化、安装工艺简单，质量稳定。

Low cost, durable, chemical corrosion resistance, plant root puncture resistance, diversified application functions, simple installation process, stable quality.

产品规格 Product Specifications

凸高一般为 8mm~50mm，产品幅宽为2m~3m，板材材质为 HDPE、PVC 等，长度可根据用户要求生产。

The convex height is generally 8mm~50mm, the product width is 2m~3m, the plate material is HDPE, PVC, etc., and the length can be produced according to user requirements.



施工工艺 Construction process

- 1、铺设时要平整自然，顺坡或依水流向铺设。
- 2、当排水板铺设时尽可能做好保护措施，层面或室外车库铺设排水板应及时尽快做好回填土工作，防止大风吹乱排水板影响铺设质量。地下室和内墙防水要尽快做好保护层，预防排水板被人或物破坏。

- 1, the laying should be smooth and natural, along the slope or in accordance with the flow of water.
2. When the drainage board is laid, take protective measures as far as possible, and the drainage board laid in the layer or outdoor garage should be backfilled as soon as possible to prevent the wind from affecting the quality of the drainage board. The basement and the inner wall should be waterproof as soon as possible to do a protective layer to prevent the drainage board from being damaged by people or objects.

技术指标 Technical Indicators

塑料防护排水板技术指标 JC/T2112-2012

Plastic protective drainage board technical indicators JC/T2112-2012

序号 No.	项目 Item		技术指标 technical data
1	伸长率10%时拉力/ (N/100mm) ≥ Tensile force at 10% elongation		350
2	最大拉力/ (N/100mm) ≥ Maximum tensile force		600
3	断裂伸长率/% ≥ Elongation at break		25
4	撕裂性能/N ≥ tear resistance		100
5	压缩性能 Compression performance	压缩率为20%时最大强度/kpa ≥ Maximum strength at 20% compression rate	150
		极限压缩现象 Extreme compression phenomenon	无破裂 No rupture
6	低温柔度 Low temperature flexibility		-10℃无破裂 No rupture at -10℃
7	热老化(80.168h) Thermal aging(80.168h)	伸长率10%时拉力保持率/% ≥ Tensile retention at 10% elongation	80
		最大拉力保持率/% ≥ Maximum tensile retention	90
		断裂伸长率保持率/% ≥ Elongation at break retention rate	70
		压缩率为20%时最大强度保持率/%≥ Maximum strength retention when the compression rate is 20%	90
		极限压缩现象 Extreme compression phenomenon	无破裂 No rupture
		低温柔度 Low temperature flexibility	-10℃无破裂 No rupture at -10℃
8	纵向透水量 (测压力150kpa) / (cm³/s) ≥ Longitudinal water penetration (measured pressure 150kpa)		10

水泥毯

产品介绍 Product Introduction

水泥毯是一种创新型复合材料，结合纺织品的柔韧性与混凝土的坚固性。其结构通常分为三层：底层为疏孔吸水织物，确保水分均匀渗透。中间层采用干混凝土混合料，通过水合反应固化。表层为三维纤维增强骨架，提升抗拉强度。产品优势在于运输时为柔性卷材，铺设浇水后硬化成型，大幅简化传统混凝土施工流程。

The cement blanket is an innovative composite material that combines the flexibility of textiles with the durability of concrete. Its structure typically consists of three layers: the bottom layer is a porous water-absorbing fabric to ensure uniform water penetration. The middle layer uses dry concrete mixture, which is solidified through hydration reaction. The top layer is a three-dimensional fiber-reinforced framework to enhance tensile strength. The product's advantage lies in its flexibility as a rolled material during transportation. After laying and watering, it hardens and takes shape, significantly simplifying the traditional concrete construction process.

性能特点 Performance characteristics:

产品不仅具有强度高、抗冲击、柔韧抗裂等优异的力学性能，而且在耐环境腐蚀、防冲刷耐磨等方面表现突出；同时兼顾便捷高效、环保节能的施工优势。

The product not only possesses excellent mechanical properties such as high strength, impact resistance, and flexibility with anti-cracking ability, but also demonstrates outstanding performance in resisting environmental corrosion and resisting erosion and wear. At the same time, it also takes into account the advantages of convenient and efficient construction as well as environmental protection and energy conservation.

作用用途 Function and use

水利工程：

河坝护坡、排水沟/渠防渗加固；
鱼塘护坡、人工湖防渗；
临时导流渠、防洪堤抢险。

Water Conservancy Projects:

River dam slope protection, anti-seepage reinforcement of drainage ditches/ canals;
Fishpond slope protection, anti-seepage of artificial lakes;
Temporary diversion channels, emergency reinforcement of flood control embankments.

交通基建：

高速公路/铁路边坡防护、路肩稳固；
矿山巷道支护、截水沟铺设。

Transportation infrastructure:

Highway/railway slope protection, shoulder stabilization;
Mine tunnel support, water diversion ditch laying.

生态修复：

水土流失治理（搭配草种植入）；
沙丘固沙、高陡边坡绿化基材。

Ecological restoration:

Soil and water erosion control (with grass planting);
Sand dune stabilization, greening materials for steep slopes.



技术指标 Technical indicators

普通针刺型水泥毯性能指标

General needle-punched cement blanket performance indicators

序号 NO.	项目 project	单位 unit	技术指标 Technical data									
			15kg/ m²		12kg/ m²		10kg/ m²		8kg/ m²		6kg/ m²	
			优等品 superior product	合格品 qualified product	优等品 superior product	合格品 qualified product	优等品 superior product	合格品 qualified product	优等品 superior product	合格品 qualified product	优等品 superior product	合格品 qualified product
	单位面积质量 mass area ratio	/	不小于标称值的92%									
	剥离强度 peel strength	N/ m	≥30									
	抗拉强度 strength of extension	KN/ m	≥7.0									
	抗折能力 Bending strength	Mpa	≥2.0	≥1.5	≥1.8	≥1.3	≥1.6	≥1.1	≥1.4	≥0.9	≥1.2	≥0.8
	抗冲击性能 shock resistance	/	无可见裂纹和破损									
	不透水性 imperviousness	/	普通型：微渗 防水型：试样背面无湿痕或水滴									
	抗冻性 freezing resistance	/	外观：无可见裂纹、剥落、粉化； 抗折强度降低率：≤20%									
	燃烧性能 Fire resistance	/	不低于GB8624规定的B1级									