

江苏长海复合材料股份有限公司
JIANGSU CHANGHAI COMPOSITE MATERIALS HOLDING CO.,LTD

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NON-WOVENS
湿法薄毡



Brief Introduction 公司简介

江苏长海复合材料股份有限公司成立于 2000 年，是一家集科研、产品开发、生产、销售、服务于一体的民营科技上市企业。

公司位于长三角极具活力和发展潜力的工业城市——常州市武进区，距常州机场 30 多公里，距常州火车站 16 公里，毗邻沪宁高速、沿江高速与 312 国道，交通极其方便。

通过多年发展与自主创新，长海玻纤在强手如林的市场竞争中脱颖而出，成为行业中的佼佼者。目前，公司已建成年产 5.5 万吨、8.5 万吨和 10 万吨的共三座池窑，形成了以玻璃纤维纱、玻璃纤维短切毡、湿法薄毡、涂层毡为主的四大产品系列，品种覆盖各种无碱玻纤直接纱、喷射纱、SMC 片材用纱、车顶棚用纱、透明板用纱、缠绕挤拉纱、短切毡用纱、聚丙烯复合纤维纱、热塑性短切原丝及无碱玻纤短切毡、薄毡、蓄电池复合隔板、方格布、网格布、复合毡、双轴向织物、多轴向织物与缝编毡、新型墙体保温复合贴面材料系列等。近年来，公司又引进了玻璃纤维连续毡，玻璃纤维复合防火板层压板，连续

层压复合板等生产线。产品应用领域包括汽车制造、游艇、卫浴设施、储罐、管道包裹、冷却塔、透明板材、建筑装饰、风力发电、家用电器、运输、运动器材、橡塑制品等。

一直以来，长海玻纤将“以质量求生存，以品种求发展”的经营理念渗透到生产过程中的每一个环节。公司现有国际先进的多条玻璃纤维制品生产线，拥有拉力、厚度、可燃物含量等一系列高端质量检测设备和全电脑检测分析仪，保证玻纤生产的每一个环节都经过严格的检测。公司通过了 ISO9001:2000 质量管理体系认证，并获全国防水行业建设奖，被江苏省科学技术厅认定为江苏省高新技术企业；新型超细玻璃纤维复合隔板被命名为江苏省高新技术产品。2008 年公司通过 ISO14001, ISO9001, TS16946 管理体系。2011 年 3 月 29 日江苏长海复合材料股份有限公司在深圳交易所创业板上市，股票代码 300196。

Jiangsu Changhai Composite Materials Holding Co., Ltd., founded in 2000, is a large listed scientific and technical enterprise focusing on scientific research, product development, production, sales and service in the area of fiberglass products manufacture.

Through years of development and independent innovation, Changhai has been able to compete successfully in the fiberglass market and become the leader in the industry. Now, the company had successfully completed the three furnace with output of 55,000 tons, 85,000 tons and 10,000 tons. The company has formed four main series of products for fiberglass roving, chopped strand mat, fiberglass tissue and coated mat, covering all kinds of E-glass roving for filament winding, spray-up roving, SMC roving, chopping roving for headliner, panel roving, roving for pultrusion, assembled Roving for Chopping, combotex roving (pp+fiberglass), chopped strands for thermoplastics and chopped strand mat, tissue, colored & printed tissue, battery separator, new insulation wall cover material, stitch combo mat, woven roving, stitch mat, biaxial fabric, multiaxial fabric, mesh and so on. In recent years, Changhai introduced the new product lines for continuous filament mat, fiberglass high pressure laminate, continuous laminated. Applications include automobile

manufacturing, yachts, private facilities, storage tank, pipeline coating, cooling towers, architectural decoration, wind power, household appliances, transportation, sports equipment, rubber and plastic products and so on.

All along, Changhai keeps its business philosophy—“survive by quality, development by variety”, to infiltrate into the production process in every link. By now, the company has several advanced glass fiber production lines. With kinds of international advanced quality testing equipments in tensile strength, thickness and binder content and computer analysis instruments, every progress of fiberglass is produced in rigorous testing. On 2008 year, the company obtained the ISO14001, ISO9001, TS16949 management system certification, and it received the awards of Construction of national waterproof industry and was identified as the high-tech enterprises in Jiangsu Province. New ultra-fine glass fiber compound separator was named the high-tech products in Jiangsu Province. On March 29, 2011, Jiangsu Changhai Composite Materials Holding Co., Ltd is listed on the Shenzhen Stock Exchange GEM, the stock code is 300196.



玻璃纤维表面毡

Surfacing veil

玻璃纤维表面毡主要用于玻璃制品的表面层中。具体分为缠绕型(S-SM)系列和手糊型(S-HM)系列两大类。

缠绕型玻璃纤维表面毡主要用于缠绕管道和罐制品,能改善制品表面的耐腐蚀性和增强抗压强度,防渗漏,延长使用寿命。

手糊型玻璃表面毡主要用于几何曲线复杂的手糊制品,其覆膜性好,树脂渗透速度快,能提高制品的强度和耐腐蚀性。

Surfacing veil is mainly used in the surface layers of FRP products. It is divided into winding S-SM series and hand lay-up S-HM series.

S-SM are mainly used on pipe and tank winding process. It can improve the product surface property on corrosion resistance, compressive strength, seepage resistance, and longer service life.

S-HM is chiefly used in the product with complicated geometric curve. It has the advantages of good pattern fitness, quick resin permeation. It can raise the intensity and corrosion resistance of products.



产品特点 Product Features

- 纤维分布均匀
- 制成表面光滑、平整
- 耐腐蚀性
- 粘结剂含量低
- 伏膜性好
- Excellent fiber distribution
- Smooth surface appearance of finished products
- Corrosion resistant
- Low binder content
- Good molding properties

技术参数 Technical Specification

产品代号 Product code	玻纤类型 Glass type	单位重量 Area weight	可燃物含量 Binder content	纵向拉伸强度 Tensile MD(N/5cm)	含水率 Moisture Content
S-SM 30	C/E/ECR-glass	30g/m ²	6.0	≥25	≤0.2
S-SM 50	C/E/ECR-glass	50g/m ²	6.0	≥40	≤0.2
S-HM 30	C/E/ECR-glass	30g/m ²	7.0	≥20	≤0.2
S-HM 50	C/E/ECR-glass	50g/m ²	6.0	≥30	≤0.2



玻纤屋面毡 / 管道包覆毡

Roofing Tissue / Pipe Tissue

S-RM 是制作 SBS、APP 改性沥青防水卷材和彩色沥青玻纤瓦的良好基材,并自由于整幅毡的纵向加筋,充分提高了毡的纵向拉伸强度和抗撕裂强度。用S-RM系列毡作基材制成的油毡,能克服油毡高温流淌、低温脆裂、易于老化等缺点,使油毡耐候性优异,防渗透性增强,并延长其使用寿命,因此是用于屋面油毡等材料的理想基材。同时,S-RM系列毡也可用作房屋隔热层的底衬材料。

S-PM系列毡是用于运输石油、天然气的地下管道防腐的玻纤基材与煤焦油、沥青等和S-PM毡包裹的地下运输管道具有优异的防渗透和耐各种环境介质的能力,并延长管道的使用寿命,减少维修及更换费用,经对S-PM系列玻纤毡的各项技术指标测试均达到甚至超过中国相关标准中规定的各项技术指标。因此,S-PM系列毡将是理想的内外缠绕带基材。

S-RM mat is mainly used as substrate for water-proof roofing materials. The asphalt mat that is made with S-RM series base material has an excellent weather-proofing, improved seepage resistance, and longer service life. Therefore, it is an ideal base material for roof asphalt mat etc. S-RM mat series can also be used as the housing heat insulation layer.

S-PM mat is used as basic material for anti-corrosion wrapping on steel pipelines that buried underground for oil or gas transportation. It has good compatibility with coal tar, pitch etc, so the underground transportation pipe wrapped with coal tar and pitch S-PM mat possesses excellent resistance to permeate and various mediums and has longer service life and less repairing and changing cost. All technical data of S-PM series can meet or even surpass the specification stipulated in the related standards in China. Therefore, S-PM series is the ideal basic material of internal and external wrapping strip.



产品特点 Product Features

- 纤维分布均匀
- 拉力强度高
- 抗撕裂性好
- 适用于沥青
- Excellent fiber distribution
- Good tensile strength
- Good tear strength
- Good compatibility with asphalt

技术参数 Technical Specification

产品代号 Product code	单位重量 Area weight (g/m ²)	可燃物含量 Binder content (%)	筋距 Yarn distance(mm)	纵向拉伸强度 Tensile MD (N/5cm)	横向拉伸强度 Tensile CMD (N/5cm)
S-RM50	50	18	否	≥170	≥100
S-RM60	60	18	否	≥180	≥120
S-RM90	90	20	否	≥280	≥200
S-RM-C45	45	18	15,30	≥200	≥75
S-RM-C60	60	16	15,30	≥180	≥100
S-RM-C90	90	20	15,30	≥280	≥200
S-RM90/1	90	20	否	≥400	≥250
S-RM95/3	95	24	否	≥450	≥260
S-RM120	120	24	否	≥480	≥280



地板毡 Flooring Tissue

S-FLM 系列毡主要用作塑料地板和壁纸的基材，用它作基材制成的软质塑料地板外观平整，不收缩变形，色彩鲜艳，铺设方便，是居民装饰地面的理想材料。该产品经过进一步加工可以制成各种彩色贴面材料，是装饰高档宾馆、饭店的理想材料。

S-FLM mat is mainly used as substrate for plastic flooring and wall covering materials. The PVC cushion and vinyl flooring made from this substrate is an ideal decorative material for floor decoration in domestic residence on account of their features such as smooth appearance, non-shrinkage, non-deformation bright color, convenient lay-up and renovation. By further processing, this mat can be manufactured into a variety of colorful facing materials to be used in the internal decoration in elegant hotels.

We can also supply Carpet tiles tissue and Wall covering tissue.



产品特点 Product Features

- 玻纤分布好
- 非常光滑的表面
- 柔韧性好，不翘曲
- 较好的拉力和张力，高温不变形
- 尺寸稳定性好
- Excellent fiber distribution
- Very smooth surface
- Excellent flexibility
- Good tensile and tear resistance
- Good dimensional stability

技术参数 Technical Specification

项目 Item	单位 Unit	型号 Type		
		S-FLM0.3	S-FLM0.4	S-FLM0.5
含胶率 Binder content	%	25 ± 3	25 ± 3	23 ± 3
厚度 Thickness	mm	0.33 ± 0.03	0.42 ± 0.04	0.52
纵向拉伸强度 Tensile MD	N/5cm	≥ 120	≥ 136	≥ 175
横向拉伸强度 Tensile CMD	N/5cm	≥ 80	≥ 112	≥ 140
透气率 Air Permeability	m ³ /m ² *s	< 4.5	< 4.4	< 3.8



地毯毡 Carpet Tissue

地毯毡系列主要用于方块地毯的基材。用玻璃纤维薄毡制作的方块地毯外观挺刮，不收缩变形，是室内地面装饰的理想材料。

The carpet tissue mat is mainly used as substrates for the carpet tissue. The carpet tissue made from this substrate is an ideal decorative material for flooring decoration in domestic residences on account of their characteristics such as toughness appearance, non-shrinkage and non-deformation.



产品特点 Product Features

- 玻纤分布好
- 非常光滑的表面
- 柔韧性好，不翘曲
- 较好的拉力和张力，高温不变形
- 尺寸稳定性好
- Excellent fiber distribution
- Very smooth surface
- Excellent flexibility
- Good tensile and tear resistance
- Good dimensional stability

技术参数 Technical Specification

项目 Item	单位 Unit	型号 Type	
		S-FM0.4	S-FM0.3
单重 Area weight	g/m ²	40	35
含胶率 Binder content	%	22 ± 3	22 ± 3
厚度 Thickness	mm	0.42 ± 0.04	0.33 ± 0.03
纵向拉伸强度 Tensile MD	N/5cm	≥ 136	≥ 120
横向拉伸强度 Tensile CMD	N/5cm	≥ 112	≥ 80
水劲强度 Wet strength MD	N/5cm	≥ 49	≥ 35
透气率 Air Permeability	m ³ /m ² *s	≤ 4.40	4.0 ± 0.5



PCB电子毡

PCB (Printed Circuit Board) Tissue

PCB电子毡是生产CEM-3的主要基材之一。我公司在国内首先开发生产的E玻纤电子毡产品已成功地应用于CEM-3型覆铜板的生产上。经过国内外广大CCL厂家使用表明我公司的玻纤纸其性能已达到或超过进口玻纤纸水平，用我公司E玻纤纸生产的CEM-3型覆铜板其主要性能指标经测试已达到或超过国内外同类产品的各项指标，尤其是它的耐热性更加突出。在中高档家用电器特别是高频头数字、电子信息LED照明用CEM-3型覆铜板已得到应用。

PCB fiber glass tissue is specially used as the base material in the copper-clad laminate of type CEM-3. This type of tissue is characterized by its smooth visual quality, excellent electrical feature and heat resistance. Being uniquely compatible to epoxy resin matrix, this type of mat enables the CCL product to reach the specifications set by IPC-4130 and comparable to that made of fiber glass woven roving. Applicable to industrial electronic devices, CCL with fiber glass tissue base is well received by the market because of its processability by punching and drilling. The successful application by the CCL producers has proven that the PCB tissue developed by this company is comparable to similar products in the world market in terms of physical and chemical properties and is reliable in the CCL production.

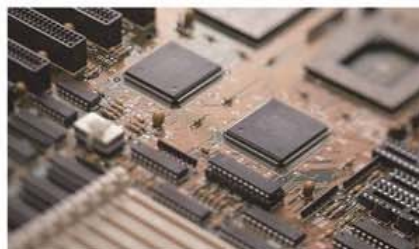


产品特点 Product Features

- 外观均匀
- 优良的电性能
- 耐热性好
- 与环氧树脂相容性优良
- Smooth visual quality
- Excellent electrical feature
- Heat resistance
- Compatible to epoxy resin matrix

技术参数 Technical Specification

项目/Item	单位/Unit	标准/Standard
克重 Area Weight	G/m ²	75 ± 5, 105 ± 5
幅宽 Width	MM	1265
含胶量 Binder Content	%	11 ± 2
纵向拉力强度 Tensile Strength MD	N/50 mm	≥ 225
横向拉力强度 Tensile Strength CD	N/50 mm	≥ 150
颜色 Color		白色 White



保温毡

Insulation Tissue

保温毡是一种优质的保温材料，采用短切玻璃纤维，经湿法工艺成型。纤维分散状态良好，厚度均匀，耐高温，导热系数低，使得毡保温效果好。该产品施工安装方便，节能效果显著，性价比高。适用于防水、地下管道保温处理、内外包等。

Insulation Tissue is a high-quality thermal insulating materials, it is made of chopped glass fiber and formed by wet process. Good fiber dispersion, uniform thickness, high temperature resistance, low thermal conductivity, so that felt insulation effect is good. The construction and installation of the product is convenient, energy saving effect is remarkable, cost-effective. Applicable to waterproof, underground pipeline insulation treatment, internal and external wrap, etc.



产品特点 Product Features

- 纤维分散均匀
- 良好的拉伸强度
- 导热系数低，保温效果好
- 耐高温
- Excellent fiber distribution
- Good tensile with strength
- Low thermal conductivity and good heat preservation effect
- High temperature resistance

技术参数 Technical Specification

项目/Item	单位/Unit	型号/Type		
		S-RM200	S-RM300	S-RM400
含胶率 Binder content	%	10 ± 3	10 ± 3	10 ± 3
厚度 Thickness	mm	2.0	3.0	4.0
纵向拉伸强度 Tensile MD	N/5cm	≥ 600	≥ 600	≥ 600
横向拉伸强度 Tensile CMD	N/5cm	≥ 600	≥ 600	≥ 600



蓄電池隔板粘 Battery separator tissue

蓄電池隔板粘主要用作鉛酸蓄電池隔板的基材，用含 S-BM 制成的複合隔板具有較好的耐振動性能和機械強度，用此隔板裝配的蓄電池起動能力強，使用壽命也較長。

The battery separator tissue is chiefly used as the base material of lead acid battery separator. The compound battery separator with S-BM series mat possesses a good vibration resistance with a good starting ability and longer service life.



产品特点 Product Features

- 非常平整的表面
- 吸液能力强
- 耐酸性好
- 厚度均匀
- Excellent level and smooth surface
- Good liquid absorption
- Well acid resistance
- Even thickness

技术参数 Technical Specification

产品代号 Product code	含胶率 Binder content	厚度 Thickness (mm)	纵向拉伸强度 Tensile strength MD (N/5cm)	72小时耐酸性 Acid resistance/72hrs (%)	浸透时间 Wetting time (s)	15分钟耐酸性 Acid resistance/15min (%)
S-BM0.30	16	0.30	≥60	<3.00	<100	<2.00
S-BM0.40	16	0.40	≥80	<3.00	<25	<2.00
S-BM0.60	15	0.60	≥120	<3.00	<10	<2.00
S-BM0.80	14	0.80	≥160	<3.00	<10	<2.00



石膏板涂层毡 Coated Tissue for Gypsum Sheathing

玻纤贴面石膏板可以广泛应用于商用和居住房，与建筑外墙组成节能型保温复合墙体，具有隔音、抗震、防火、抗撞击、防霉菌和潮气等优点；还可以应用于外墙、内墙、隔墙、电梯和楼梯通道。

玻纤贴面石膏板还能增强结构抗力，耐火性，并可以保证在正常气候条件下暴露在外12个月。有1/2"和5/8"厚度，48"宽，8'，9'，10'，12'长等各种规格。另外它比其他玻璃纤维贴面石膏板更轻更易搬运，给工程建设和环境体系认证带来极大便利。

Fiberglass-faced gypsum sheathing is developed for use in commercial and residential applications under a broad range of exterior veneers including brick, stone, metal, wood and vinyl as well as EIFS and curtainwall systems. And it has the excellent performance like mould and moisture resistance, durability sound resistant, shock resistant, fire resistant and impact resistant.

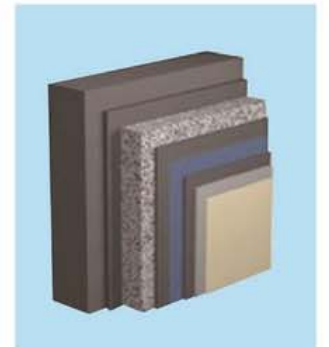
This kind of gypsum also adds structural strength, fire resistance and a warranty for up to 12 months of exposure in normal weather conditions. It is available in 1/2" and 5/8" thicknesses, a 48" width and lengths of 8', 9', 10', and 12'. Plus, it's lighter and easier to handle than other glass-faced gypsum sheathing. It is the glass mat-faced gypsum that offers the most benefits in your project's construction process and contributes the most value toward environmental certification.



聚氨酯板涂层毡 Coated Tissue For Polyurethane Foam

该产品与聚氨酯发泡更有亲和力，粘结强度高，不渗漏，便于连续生产，可用于各种发泡材料面层，屋面隔热保温，外墙装饰贴面等具有很强的实用性，代替了传统水泥网格布。阻燃等级经国家玻璃纤维产品质量监督检验中心检测达到B1级。

This kind of glass fiber products and the polyurethane foam have more affinity, high bonding strength, no leakage and are suitable for continuous production. It can be used for a variety of foaming material layer, roofing insulation, wall decoration veneer and has very strong practicability. And it replaced the traditional cement grid cloth. Flame retardant grade by the national glass fiber product quality supervision and inspection center can achieve the B1 level.



玻纤网格布 Fiberglass Scrim

玻纤网格布是水泥、塑料、沥青、大理石、屋面、墙体等理想的增强材料。强度高、耐碱、耐酸，与树脂粘性强，易溶于苯乙烯，硬挺性、定位性极佳，是理想的增强材料。

我公司可以生产各种克重的网格布，例如40, 70, 90, 110, 135, 150, 165, 210等。

我司可生产玻纤网格布，玻纤网格布+薄毡，玻纤薄毡+网格布+薄毡。

The product is used in cement, plastic, marble, roof, inside and outside wall etc. Widely used as an ideal reinforcement material.

High strength, excellent alkali and acid resistance, strong adhesion with resin, easy dissolution in styrene, with top stiffness and good location, widely used as an ideal reinforcement material.

We can supply the woven scrim with different weight (g/m2) like: 40, 70, 90, 110, 135, 150, 165, 210 and different width (cm) like: 20, 50, 100, 135. Also the production with user's specification can be made.

We can produce fiberglass scrim, fiberglass scrim with tissue and fiberglass tissue + fiberglass scrim with tissue.



玻纤网格薄毡 Fiberglass Scrim with Tissue

玻纤网格薄毡是水泥、塑料、沥青、大理石、屋面、墙体等理想的增强材料。强度高、耐碱、耐酸，与树脂粘性强，易溶于苯乙烯，硬挺性、定位性极佳，是理想的增强材料。

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We can produce fiberglass scrim, fiberglass scrim with tissue and fiberglass tissue + fiberglass scrim with tissue.



玻璃纤维复合防火层压板 Fiberglass Panel Laminate

绿色环保、防火等级高的玻璃纤维防火装饰板采用无纸化贴面，节约了大量的木材资源，增强了耐火性能及保温性能。其防火性能远优于纸质装饰板、木质板等材料，可广泛应用于需要防潮、防霉、防火和高强度的地方。

Fiberglass decorative laminate with Green Initiative, High Level Fireproof property is produced with out any paper, this research for us to save a lot of timber resource, at the same time enhance The panel's fireproof and thermalinsulation properties. Fireproof performance of GFRP Panel is more better than paper lamination decorative panels and wood panels, it can be used for the place where waterproof, waterproof, fireproof and high intensity needed.



产品特点 Product Features

- 防火性能
- 防水性能
- 耐磨损
- 抗化学性能
- 抗静电
- 易清洁，易加工
- Fire-proof
- Water-proof
- Wear-resistant
- Chemical resistant
- Anti-static
- Easy cleaning and fabrication

可应用于任何装饰表面：家具，隔间，卫生间隔断，火车车厢，汽车，橱柜，船舶，电梯，实验室台面，计算机房地板，外墙等。
It can be used on most of the decorative surface, such as Furniture, compartment, Toilet Cubical, train carriage, bus, cabinet, ship, lift, laboratory table, computer flooring, exterior and so on.

产品类别 Product Range

- 防火板
- 弯曲板
- 抗静电板
- 康贝特板
- 金属拉丝板
- 理化板
- High Pressure Laminate
- Post-forming Laminate
- Anti-static Laminate
- Compact Laminate
- Metal Laminate
- Chemical resistant Laminate



连续纤维增强热塑性带材 Continuous Fiber Reinforced Thermoplastic Tapes

证书 Certificate

缠绕成型产品 Winding molding products

CFRTP具有优异的比强度，PE基材的CFRTP带材拉伸强度可达800MPa，在增强热塑性复合管道中作增强材料，可显著提高管道的耐压力性能，革新管道应用方式。其耐腐蚀特性，更适应管道各种流体与环境。



CFRTP has excellent strength and the tensile strength of PE-based CFRTP tapes can reach 800 MPa. It is used as reinforced material in enhanced thermoplastic composite pipe, which can significantly enhance compression resistance of pipeline. As one feature of CFRTP is its corrosion resistance, it is suit for various fluid and circumstances of pipeline.

复合成型产品 Composite forming products

CFRTP作为热塑性材料，极大地发挥其热塑特性，以加热方式使材料熔融复合，冷却定型成品，可以CFRTP材料层叠制作板材，或以CFRTP材料作为增强面材料与热塑蜂窝芯及热塑发泡材料复合，产品复合为一体材料，层间结合力优异，无胶水助剂添加，环保无挥发。



CFRTP, as thermoplastic material, can exert its thermoplastic properties maximally. Through melting thermoplastic material, it can shape integrally after cooling, for example, manufacturing board material or mix with thermoplastic honeycomb core and thermoplastic foaming material as reinforced surfacing material. This product can have excellent interlayer bonding force without using glue and can be very environment friendly.



模塑成型产品 Molded products

CFRTP材料纤维的连续特性，使其材料力学性能优异，结合热塑特性，可压制类玻璃钢制品，更具优异的冲击性能。产品可根据需求进行力学设计补强，稳定的成型工艺，人工环境优良，适用自动机械化设备，生产效率高。



The CFRTP has excellent mechanical properties as the continuity of its fiber. Together with its thermoplastic properties, it can manufacture products similar to fiberglass reinforced products with great shock resistance. The product can be customized according to requirements with stable molding process, excellent artificial environment and it is suit for automatic mechanical equipment in high production efficiency.

