 Needle Mat and Products

Use glass fiber (basalt, silica) etc. yarn as raw material, cut into fixed length, after carding and layer, then send into the needle loom, punched into mat.

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**Property**

- **100% inorganic fiber, non-combustibility.**
- **High porosity, excellent sound absorption.**
- **High temperature duration, low heat shrinkage and heat loss.**
- **Low thermal conductivity, excellent thermal insulation.**
- **Good tensile strength and resistance for wind velocity.**

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**Technical Property**

<table>
<thead>
<tr>
<th>Item</th>
<th>Maximum Temperature Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber needle mat</td>
<td>700°C—950°C</td>
</tr>
<tr>
<td>Basalt fiber needle mat</td>
<td>750°C</td>
</tr>
<tr>
<td>Silica fiber needle mat</td>
<td>1100°C</td>
</tr>
</tbody>
</table>

**Production Specifications**

- **Thickness:** 2mm—25mm
- **Width:** Max.2.4M
- **Length:** 10M—150M
- **Density:** 100—220kg/M³

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SHANGHAI FENGYA FIREPROOF AND INSULATION MATERIALS CO., LTD.
Tel:86-21-68090222 56022760  Fax:86-21-66305890
http://www.shfengya.com

LIH FENG JING ENTERPRISE CO., LTD.
Tel:886-6-2534332 2534335  Fax:886-6-2534363
E-mail:info@lf-fs.com
http://www.lh-fs.com
According to customer's requirements, needle mat can be processed into the following products:

◆ 成型棉管 Forming Pipe
使用玻璃（玄武岩、矽）等繊維軋針棉管，添加有機或無機成型劑均勻塗佈後，再捲取加工成圓管。
Use glass fiber (basalt, silica) needle mat, after adding organic or inorganic binder, then coiling and forming into various pipes.

◆ 機切件 Die Cutting Product
使用玻璃（玄武岩、矽）等繊維軋針棉管，裁切成固定形狀及尺寸。棉管表面可貼各種覆層材，如玻璃（玄武岩、矽）纖維布、強化（素面）鋁箔、純鋁箔及雙面膠等。
Use glass fiber (basalt, silica) needle mat, cut into a fixed form and size. We supply various kinds of coating materials, such as: glass (basalt, silica) fabric, reinforced aluminum foil, pure aluminum foil and double-adhesive tape etc.

◆ 素棉棉卷組件 Mat Coiled Parts/Assembly
使用玻璃（玄武岩、矽）等繊維軋針棉管，直接將棉管裁切後捲取成組合成圓管。
Use glass fiber (basalt, silica) needle mat, cut the mat then coiling and assembled into tubular parts.

◆ 熱壓成形件 Heat Pressing Preformed Parts
依尺寸裁切後，將成型劑塗佈在玻璃（玄武岩、矽）等繊維軋針棉管上，經模具高溫熱壓成3D形式，以方便客戶安裝組配。
Cut into size, apply binder to the glass (basalt, silica) needle mat, pressing and forming into 3D shape with high temperature mold, which is easy to install.

◆ 散棉 Loose Fiber
將裁切後的玻璃（玄武岩、矽）等纖維加工成散（棉絮）狀，以滿足客戶在價格及組裝上的需求。
Opening the glass (basalt, silica) fiber into loose wool fiber, fully satisfied the customer on price and assembling requirements.
玻璃（玄武岩、硅）纤维纺织制品
GLASS (BASALT, SILICA) FIBER WOVEN FABRIC

使用玻璃（玄武岩、硅）纤维等加工而成，产品有：布、带、绳、网格布。
Made of glass (basalt, silica) fiber, processed into fabric, tape, rope, sleeves and mesh netting.

### 产品特性  PROPERTY

- **难燃性、耐化学性佳。**
  Non-combustibility, high stable chemical properties.
- **在高温下收缩率低，使用寿命长。**
  Low heat shrinkage at high temperature, long service life.
- **低热传导率，是优良之隔热材料。**
  Low thermal conductivity, excellent thermal insulation material.
- **高强度、高弹性模量。**
  High strength, high elastic modulus.
Glass (Silica) Fiber Needle Stitch Composite Mat

Glass (silica) fiber needle stitch composite mat uses glass (silica) fiber yarn as raw material, cut into fixed length, after carding and layer, needle punched into mat, then stitched by sewing thread into composite mat.

Coating materials: glass (silica) fabric, aluminum foil.

Product Properties

- **Strength significantly increased.**
  - Strength significantly increased.

- **Better thermal resistance performance on radiant heat.**
  - Better thermal resistance performance on radiant heat.

- **Effectively prevent the dispersion of fiber.**
  - Effectively prevent the dispersion of fiber.

- **High efficiency filtration.**
  - High efficiency filtration.

- **Corrosion resistance.**
  - Corrosion resistance.
不銹鋼絲棉及其製品
STAINLESS STEEL WOOL AND PRODUCTS

不銹鋼絲棉是使用切削法加工而成，質地均勻。由於其高精度和特殊的生產加工工藝，使其在衆多的使用領域中表現優異。
Stainless steel wool made by shaving process with uniform quality. Due to its high precision and special production process, it provides excellent performance in many fields.

產品特性 PROPERTY

- 具有極佳的吸音性及散熱性。
  Excellent sound absorption and heat dispersion.
- 可有效防止玻璃纖維飛散。
  Effectively prevent the dispersion of fiber.
- 耐化學性及耐震動性。
  High stable chemical properties and shock resistance.

產品技術性能 TECHNICAL PROPERTY

| 型號 | 附屬品
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Temperature</td>
</tr>
<tr>
<td>SUS434</td>
<td>850℃</td>
</tr>
<tr>
<td>SUS430</td>
<td>845℃</td>
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<tr>
<td>SUS446</td>
<td>1000℃</td>
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</tbody>
</table>

生産規格 PRODUCTION SPECIFICATIONS

<table>
<thead>
<tr>
<th>異性溫度</th>
<th>直徑：60–80μm, 80–120μm, 120–150μm</th>
</tr>
</thead>
<tbody>
<tr>
<td>寬度：50, 70, 100, 150, 200, 250, 300(mm)</td>
<td>Diameter: 60–80μm, 80–120μm, 120–150μm</td>
</tr>
<tr>
<td>註：特殊規格可依客戶要求生產</td>
<td>Note: special specifications is available for customer requirements</td>
</tr>
</tbody>
</table>

加工製品 PROCESSED PRODUCTS

根據客戶加工要求，可以將不銹鋼絲棉加工成以下產品：
According to customer’s requirements, stainless steel wool can be processed into the following products:

- 不銹鋼絲棉繩 Stainless Steel Twisted Rope
  將不銹鋼絲棉加工成直徑5–8mm，可使客戶產品的應用性更加廣泛。
  It is produced by stainless steel wool, diameter is 5–8mm, it makes the customer’s application widely.

- 不銹鋼絲棉管 Stainless Steel Wool Performed Pipe
  依照客戶要求，將不銹鋼絲棉捲成管狀，以便利客戶後續加工。
  According to customer’s requirements, stainless steel wool can be formed into tubular pipe.

- 不銹鋼絲棉絨 Stainles Steel Wool Needle Mat
  將不銹鋼絲棉絨經軋加工而成，除了增強材料的組織性及強度，也便於大面積產品的加工及組配。
  It is produced by stainless steel wool, needled into mat. In addition to better structure and strength, it is easier for processing and assembly.
勾織網製品
STAINLESS STEEL WIRE PRODUCTS

使用不銹鋼絲線等材料，經編織機以專用設備加工而成。有SUS304、SUS310S、SUS316或鍍鋅鋼線等材料可供選擇。
Use stainless steel wire as raw material, processed by special equipment. Available wire such as SUS304, SUS310S, SUS316 and galvanized wire etc.

產品特性 PROPERTY

● 耐高溫，氣密性佳。
   High temperature resistance, superior pressurization.

● 蠟潤作用，抗高壓。
   Lubrication, anti high pressure.

● 消音性佳，使用壽命長。
   Excellent sound absorption, long service life.

● 亦可作硅連元件。
   Maybe used as filter materials.

加工製品 PROCESSED PRODUCTS

依客戶加工需求，可以將不銹鋼絲線加工成以下產品，亦可與其它材料複合加工成其它產品：
Stainless steel wire can be processed into the following products according to customer’s requirements, processed together with other materials, compound products are available also:

◆ 勾織網 Stainless Steel Knitted Wire
可使用不銹鋼絲線或其它材料編織而成，編織方式有：單股編織、多股編織。
Knitted by stainless steel wire or other materials, weaving patterns: single knitting and multi-wire knitting.

◆ 平織網 Stainless Steel Wire Mesh - plain weave
是利用不銹鋼絲線採用平織的編織方式加工而成，具耐酸、耐鹼、耐腐、耐磨等性能。
Use stainless steel wire, by weaving and processed into screen, with acid, alkali, temperature and wear resistant properties.

◆ 溼震環（墊）Damping Ring (Shock Pad)
以不銹鋼絲線為原材料，經編織、模壓而成。
Use stainless steel wire as raw materials, by weaving and molding, into form.

◆ 密封環（墊） Ring Seal (Gasket)
使用勾織網與石墨、雲母、PTFE和陶瓷等材料加工而成。耐高溫且具有良好的氣密性，有效的密封作用，使用安裝方便。
Use stainless steel knitted wire and inorganic graphite, mica, PTFE and ceramic materials processed. High temperature resistance and superior pressurization, effective function for sealing up, easy to install.
金屬沖壓加工件
METAL STAMPINGS

採用SUS409L、SUS436等不銹鋼金屬材料，通過沖壓設備和模具，對板材、管材等進行加工成形。
Using stainless steel metal sheet such as SUS409L, SUS436 etc, through stamping equipment and tooling, forming into tube.

---

產品特性 PROPERTY

- 耐腐蝕性和耐熱性優良，沖壓、彎曲等熱加工性好。
  Excellent corrosion and heat resistance, excellent thermal processing for stamping, bending, etc.

- 與各種纖維製品模組化，降低熱損失且防止纖維飛散。
  Pattern assembly with various fiber products, reducing heat loss and preventing fiber dispersion.
隔熱襯墊及護熱蓋隔熱棉
INSULATING SHEETS FOR ENGINE HOOD AND HEAT SHIELD

材料可使用纖維棉、櫻花絨、玻璃布、鋁箔等，表面亦可投保各種材料，常用的為鋁箔和雙面膠，同時可以根據需求裁剪加工各種特殊尺寸。Various materials, such as rayon, PLE, glass fabric and aluminum foil can be used, and the surface can also be covered by different materials, for i.e. aluminum foil and double-adhesive tape is commonly used. Meanwhile we provide special cutting size according to requirements.

產品特性 PROPERTY

- 耐候性佳。
  Excellent weather resistance.
- 對皮膚無刺激性。
  Non-irritation for skin.
- 耐燃性，耐化學性佳。
  Non-combustibility, high stable chemical properties.
- 壓縮後復原佳，抗衝擊震動，優良的抗拉強度。
  High recovery rate after compression, shock vibration resistance, excellent tensile strength.
- 孔隙度高，吸音性佳。
  High porosity, excellent sound absorption.
- 熱傳導率低，隔熱性佳。
  Low thermal conductivity, excellent thermal insulation material.
隔熱紙（玻纖紙、超細玻纖紙、陶瓷纖維紙）
PAPER INSULATION (GLASS TISSUE, MICRON GLASS FIBER PAPER, CERAMIC PAPER)

以玻璃（陶瓷纖維）纖維為原料，採用獨特工藝加工製造而成。
Use glass (ceramic fiber) fiber as raw materials, by wet processing, made into paper.

產品特性 PROPERTY

- 完全不燃。
  Non-combustibility.
- 優良的熱穩定性及抗熱、抗震性。
  Excellent thermal stability and heat resistance, shock and vibration resistance.
- 優良的化學穩定性、耐腐蝕性。
  Excellent chemical stability, corrosion resistance.
- 低熱容量。
  Low thermal capacity.
- 質輕、強度高。
  Light weight, high strength.
- 熱傳導率低，優良的絕緣性能。
  Low thermal conductivity, excellent insulating materials.

加工製品 PROCESSED PRODUCTS:

根據客戶加工需要，可以加工成以下產品：
According to customer’s requirements, can be processed into the following products:

- 玻璃纖維管 Glass Fiber Paper Tube
  使用玻璃纖維管，添加有機或無機成型劑製成加工成管狀。
  Forming tube made of glass fiber paper is available by adding organic or inorganic binder.

- 輸切件 Die Cutting Product
  依賴客戶產品需求，將隔熱紙裁切沖壓成固定形式及尺寸。隔熱紙表面可貼各種複合材，如強化（聚丙烯）、鋁箔、銅箔及雙面膠等。
  Die cutting the heat-insulating paper into fixed form and size according to customer’s requirements. Heat-insulating paper can be surface coated with various of materials, such as reinforced aluminum foil, pure aluminum foil and double-adhesive tape etc.
無甲醛環保棉氈
FORMALDEHYDE-FREE FIBERGLASS WOOL PRODUCTS

採用丙烯酸熱固性樹脂將無機玻璃纖維黏結在一起，經加熱加壓製成柔性棉氈的製品。
Use the acrylic acid thermosetting resin, combine the inorganic fiberglass material, after heating and compression, made into flexible mat.

---------------------------

產品特性 PROPERTY

● 不含甲醛等有害物質，不會對人體健康造成傷害、不會對環境造成污染。
Formaldehyde free, without harmful substances, will neither cause harm to human health nor pollution to environment.

● 隔熱性佳。
Excellent thermal insulation.

● 吸音性佳。
Excellent sound absorption.

● 耐腐蝕性。
Corrosion resistance.

● 柔軟不易變形。
Soft but not easy to deformation.

● 完全不燃。
Non-combustibility.
**CERAMIC FIBER BLANKET**

By ejection or silk fling process of ceramic fiber, after needle, heat setting, and cutting process, made into blanket, temperature grade is 1100~1430°C.

---

**PROPERTY**

- **熱傳導率低，隔熱性佳。**
  Low thermal conductivity, excellent thermal insulation.
- **熱穩定性良好。**
  Excellent thermal stability.
- **優異的抗熱衝擊性能。**
  Excellent thermal shock resistance.
- **高溫下化學穩定性好。**
  Superior stable chemical property at high temperature.
- **高溫下熱收縮率低。**
  Low heat shrinkage at high temperature.
- **低熱容。**
  Low heat capacity.

---

**TECHNICAL PROPERTY**

<table>
<thead>
<tr>
<th>產品名稱</th>
<th>杜熱K1260鈍</th>
<th>杜熱S鈍</th>
<th>杜熱Z鈍</th>
</tr>
</thead>
<tbody>
<tr>
<td>風色 Color</td>
<td>白色 White</td>
<td>白色 White</td>
<td>白色 White</td>
</tr>
<tr>
<td>溫度等級 Temperature grade</td>
<td>1100°C</td>
<td>1260°C</td>
<td>1260°C</td>
</tr>
<tr>
<td>建議使用溫度 Recommend the use of temperature</td>
<td>1000°C</td>
<td>1150°C</td>
<td>1176°C</td>
</tr>
<tr>
<td>熔點 Melting point</td>
<td>1648°C</td>
<td>1760°C</td>
<td>1760°C</td>
</tr>
<tr>
<td>纖維直徑 Fiber diameter</td>
<td>2-4μm (平均值)</td>
<td>2.5-3.5μm (平均值)</td>
<td>2.5-3.5μm (平均值)</td>
</tr>
</tbody>
</table>
GLASS ROVING (CONTINUOUS)

It is made of glass roving (basalt roving), blowing into loose continuous fiber, weight and packed according to customer’s requirement. Especially suitable for the muffler with complicated design.

**PROPERTIES**

- **Continuous Fiber, Non-dispersion Problem.**

- **Non-combustibility, High Stable Chemical Properties.**

- **Excellent Sound Absorption.**

- **Low Heat Shrinkage at High Temperature, Long Service Life.**

- **Low Thermal Conductivity, Excellent Thermal Insulation Material.**

**TECHNICAL PROPERTY**

<table>
<thead>
<tr>
<th>Model</th>
<th>Fiber Diameter</th>
<th>Softening Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>24μm</td>
<td>846℃</td>
</tr>
<tr>
<td>Basalt</td>
<td>17μm</td>
<td>960℃</td>
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<tr>
<td>E2</td>
<td>24μm</td>
<td>907℃</td>
</tr>
<tr>
<td>E3</td>
<td>24μm</td>
<td>916℃</td>
</tr>
<tr>
<td>E4</td>
<td>24μm</td>
<td>925℃</td>
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</tbody>
</table>

**Processed Products**

- **Forming Parts**

Forming parts made of glass roving with thermosetting binder is available for special shaped exhaust pipe, excellent for dispersion prevention and easy assembly.
膨體紗
TEXTURIZED YARN

玻璃纖維通過高壓空氣的特殊裝置膨化而成膨體狀態，增加其產品的膨脹程度，達到現代汽車機車對於降噪及耐溫問題的要求。
Glass fiber yarn via high-pressure air and special device extruded to fluffy state. By increasing the level of product fluffy, it achieves the sever requirements for modern auto and motorcycle regarding noise reduction and temperature duration.

產品特性 PROPERTY

- 膨體柔軟有彈性，纖維覆蓋能力高，非常適合於填充在異型消音器。
  Fluffy soft and flexible, high-capacity of fiber coverage, quite suitable to fill in the special-shaped silencer.
- 透氣性好，吸音效果佳。
  Good permeability, excellent sound absorption.
- 低熱傳導率，隔熱效果佳。
  Low thermal conductivity, excellent thermal insulation.
- 耐高溫耐腐蝕，在廢氣環境中的耐久性佳。
  High temperature and corrosion resistance, superior durability under exhaust gas environment.
- 高溫下收縮率極低，使用壽命長。
  Low heat shrinkage at high temperature, long service life.

加工製品 PROCESSED PRODUCTS

使用沖孔壓縮袋或不織布袋包裝，方便安裝組配。
Packed by perforated plastic bag and non-woven bag, easy to assemble.
公司简介
COMPANY INTRODUCTION

"[Company Name]" established in [Year], is located in [City]. Our main products are [Product List]. We have been serving customers since [Year]. Our products are designed to meet the highest quality standards.

主要營業項目
MAIN BUSINESS

- Needle mat and products
- Needled glass fiber needle mat products
- Needled glass fiber mat products
- Insulation materials for roofs and heat shielding
- Stainless steel wool products
- Ceramic fiber blankets

企業沿革
DEVELOPMENT HISTORY

1970: [Event]
1975: [Event]
1980: [Event]
1990: [Event]
2000: [Event]

行銷實績
Market

- [List of countries and regions where the company operates]