

Insulation Catalog



RUBBER FOAM

新一代的一级“弗耐斯”全面采用了我公司先进的精细发泡技术。在延续了我公司产品一贯高品质绝热性能的基础上，产品发泡更均匀，泡孔更精细，其重要性能指标有了进一步的突破：湿阻因子 $\mu \geq 10,000$ ，导热系数 $\lambda \leq 0.034W/(m \cdot K) 0^{\circ}C$

弗耐斯橡塑是以橡胶为主要原材料发泡而成的柔性闭泡绝热材料。它们无纤维粉尘，不含甲醛，不含氟氯烃等破坏臭氧层的工质，适合于介质温度在-50至105°C间各种管道及设备的保温隔热。作为高品质的绝热节能材料，弗耐斯橡塑产品目前广泛应用于中央空调系统水管和风管，制冷和制热设备，热水管道及工艺管路的绝热工程，能充分保证降低冷、热损失的节能效果。在防止管道结露，降低管路腐蚀风险，保证整个绝热系统“汽密性”方面，弗耐斯橡塑能提供整套解决方案的绝热产品系列。

弗耐斯橡塑为全球柔性绝热材料技术和市场的领导者。公司一直致力于产品的研发与革新，持续的研发投入及工艺改进决定了弗耐斯橡塑产品优秀的技术性能。我们一直坚信，绝热效果不仅取决于产品技术性能指标的高低，而且与相应的专业选型、安装指导、产品质量跟踪等技术服务密切相关。弗耐斯橡塑正是凭借品质卓越的产品质量和全方位的服务为客户实现理想的绝热效果。

Based on maintaining the consistent high quality heat insulation performance of our products, the product foaming is more uniform, and the bubble holes are finer, with further breakthroughs in its most important performance indicators: dampening factor $\mu \geq 10,000$, thermal conductivity $\lambda \leq 0.034W/(m \cdot K) 0^{\circ}C$

Rubber foam are flexible closed-cell heat insulation materials made of rubber as the main raw material. They are free of fiber dust, formaldehyde, chlorofluorocarbons, and other substances that damage the ozone layer and are suitable for thermal insulation and heat preservation of various pipelines and equipment with medium temperatures ranging from -50 to 105°C. As a high-quality heat insulation and energy-saving material, rubber foam products are widely used in heat insulation projects for water and air ducts in central air conditioning systems, refrigeration and heating equipment, hot water pipelines, and process pipelines, fully ensuring the energy-saving effect of reducing cold and heat loss. In terms of preventing pipe line condensation, reducing the risk of pipeline corrosion, and ensuring the "airtightness" of the entire heat insulation system, rubber foam can provide a complete set of heat insulation product series with solutions.

Rubber foam is a global leader in flexible heat insulation material technology and market

HIGH - END

产品说明

PRODUCT DESCRIPTION

In accordance with customers' demands for continuous pursuit of high quality and excellence, has introduced high end production equipment and selected high-quality raw materials to process Class 0 rubber foam products through special processes. These products have undergone strict audits and testing in terms of moisture permeability and fire resistance. They are free of chlorofluorocarbons and formaldehyde, and possess excellent fire resistance (oxygen index exceeding 40%, more effectively suppressing the heat release rate during combustion), maximizing the environmental and safety performance of the usage environment.



- 稳定可靠的产品性能 保证实现最佳解决方案
- 弗耐斯橡塑是防止结露，降低冷/热损的最佳选择
- Stable and reliable product performance ensures optimal solutions
- rubber foam is the best choice for preventing condensation and reducing cold/heat loss.

产品说明 | PRODUCT DESCRIPTION

我公司生产的橡塑发泡 (PVC/NBR) 保温材料引进新技术及工艺，采用自动化生产线，以性能优异的丁腈橡胶、聚氯乙烯为主要原料，经密炼、硫化发泡等特殊工艺制成，其主要特点为：低密度，封闭式气泡结构，导热系数低、水汽透汽率好、吸水率低、富柔软性、施工方便。

适用温度范围广，自-40℃至105℃且抗老化性能好，经久耐用。阻燃效果达到国家B1级标准。绿色环保，从生产至安装完全符合国家环保要求，外观整体美观。

基于上述特性本品被广泛用于中央空调冷冻机房、建筑、船舶、车辆等行业的各类水汽管道的保温、隔热，并获得了理想的使用效果。

由于本材料的柔软、耐屈绕等特点，可加工制作健身器材、医疗器械、日用品的把套、护套。

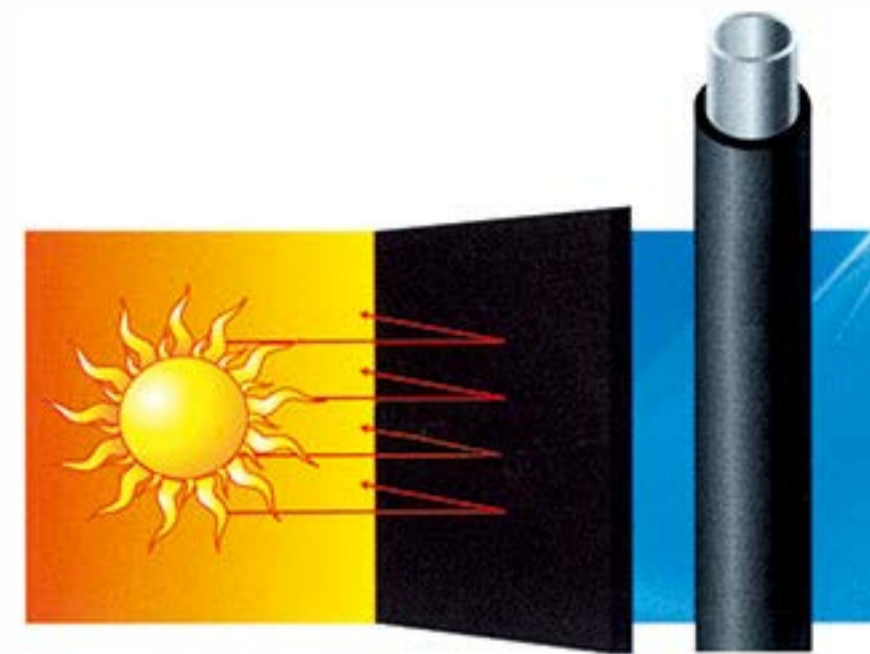
The rubber foam (PVC/NBR) heat insulation materials produced by our company introduce the new technology and processes, using automated production lines. They are made of high-performance NBR and PVC as the main raw materials and made through special processes such as milling and vulcanization foaming. Their main features are: low density, closed-cell bubble structure, low thermal conductivity, good water vapor permeability, low water absorption, softness, and easy installation.

Wide range of applicable temperature, from -40°C to 105°C and good anti-aging performance, durable. The flame retardant effect meets the national B1 grade standard. Environmentally friendly, from production to installation, it fully meets national environmental protection requirements, with an overall aesthetic appearance.

Based on the above characteristics, this product is widely used for heat insulation and heat preservation of various water and vapor pipelines in industries such as central air conditioning refrigeration rooms, construction, ships, and vehicles, and has achieved ideal usage effects.

Due to the flexibility and resistance to bending of this material, it can be processed and made into fitness equipment, medical devices, and handles and protective sleeves for daily necessities.

导热系数低 | LOW THERMAL CONDUCTIVITY



本品导热系数低，平均温度为0℃时为0.034w/m.k，表面放热系数高，达到9.5w/m.k，因此在相同的环境条件下，它的使用厚度比其它的温度材料薄一半以上，节省了楼层吊顶上的空间，从而增加了楼层的可利用空间。

The product has low thermal conductivity, when the average temperature is 0°C, and the surface exothermic coefficient is as high as 9.5 w/m.k. Therefore under the same environmental conditions, its usage thickness is more than half thinner than other temperature materials, which saving space on the ceiling of the floor, thus increasing the usable space of the floor.

水汽透过率极低 | EXTREMELY LOW WATER VAPOR PERMEABILITY



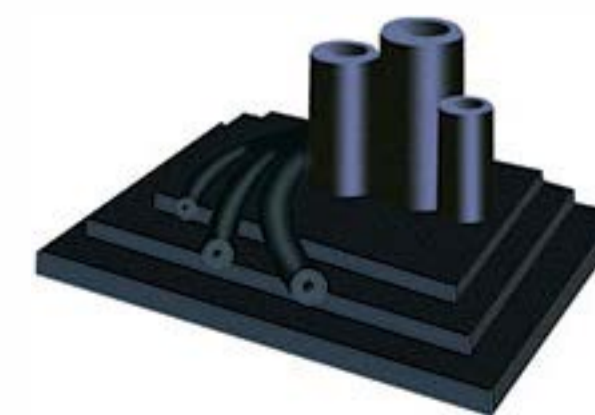
因本品为闭泡式结构，且表面平整光滑，所以外界空气中的水汽很难渗透到材料之中，保冷保温不必再添加隔汽层，从而获得较佳的导热系数，它的阻湿因子大于 4.5×10^3 使它的整体既是保温层又是防潮层。

Since this product has a closed-cell structure and a smooth surface, it is difficult for water vapor in the outside air to penetrate into the material. Therefore, no additional vapor barrier is needed for cold and heat insulation, resulting in optimal thermal conductivity. Its moisture resistance factor is greater than 4.5×10^3 , making it both a heat insulation layer and a moisture-proof layer.

产品介绍 | PRODUCT INTRODUCTION

本材料中含有大量阻燃减烟原料，燃烧时产生的烟浓度极低，而且遇火不溶化，不会滴下着火的火球，材料具有自熄灭特征，按GB/T17794-2008《建筑材料燃烧性能分级方法》本产品为B1级难燃材料，确保安全可靠。

This material contains a large amount of flame retardant and smoke reduction raw materials. The smoke produced during combustion concentration is extremely low, and does not dissolve when exposed to fire, will not drip fireballs. The material has self-extinguishing characteristics. According to GB/T17794-2008 <Classification Method for Combustion Performance of Building Materials>, this product is a B1 grade flame-retardant material, ensuring safety and reliability.



产品规格 | **PRODUCT SPECIFICATIONS**

管材: 壁厚(mm) Pipe Materials: Thickness	内径(mm) Inner Diameter	长度(mm) Length	其他长度可定做 Other lengths can be customized
9 13 15 20 25 30	6-108	1800-2000	-

安装简易快捷 | **SIMPLE AND QUICK INSTALLATION**

本品材质柔软,施工安装方便。对于管道的安装,可随管道及安装进度套上后一起安装,也可将管材剖开后,再用专用胶水粘合而成。对于阀门、弯头、三通等复杂形状,将板材及管材按实际要求切割,再依据不同形状选型包上,粘合即可。由此可确保整个系统的气密性和外形美观。

The product material is flexible and easy to construct and install. The pipe installation can be completed along with the pipe and installation progress, or the pipe materials can be cut open and glued together with special adhesive. For complex shapes such as valves, elbows, and tees, the sheets and pipes can be cut according to actual requirements, and then wrapped and glued according to different shapes. This ensures the airtightness and aesthetic appearance of the entire system.



基本操作规程 | **BASIC OPERATING PROCEDURES**

- 1、建议使用我公司生产的“弗耐斯”牌橡塑专用胶水及胶带。
 - 2、所有的缝隙接头都需用胶水粘接密封。
 - 3、粘接时先了解管道规格,由大到小,先弯头、三通、尸管、阀门法兰。
 - 4、粘接胶水适量、材料接口应轻微挤压。
 - 5、保温厚度大,需重叠保温的情况下每层的割口应相互错开。
 - 6、安装时切勿拉伸材料,应余出10mm。
1. It is recommended to use the brand rubber foam special adhesive and tape produced by our company.
 2. All gaps and joints need to be sealed with adhesive.
 3. When gluing, first understand the pipe specifications, starting from large to small, elbows, tees, then pipes, and valve flanges.
 4. Use the appropriate amount of adhesive, and the material interfaces should be gently squeezed.
 5. In cases where the heat insulation thickness is large and overlapping heat insulation is required, the cuts of each layer should be staggered.
 6. Do not stretch the material during installation, there should be an appropriate margin of 10mm.

COLORED AND ALUMINUM FOIL AIR CONDITIONING PIPE RUBBER FOAM PRODUCTS



米白色橡塑板多用于没有吊顶的风管保温,其色泽柔和,整体色调给人以舒适感,而且可以使室内更加明亮。
 The cream-colored rubber foam board is mostly used for pipe heat insulation without a ceiling. Its soft color and overall tone give a comfortable feeling and can make the indoor space brighter.

备注:可根据用户需要定做其它色彩的板、管。
 Note: Boards and pipes of other colors can be customized according to user needs.



COMPOSITE LAMINATED RUBBER FOAM HEAT INSULATION PRODUCTS

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GRID ALUMINUM FOIL RUBBER FOAM PRODUCTS

本公司根据该产品系列的市场之需，最新推出的贴面产品，其具备以下特殊优点：

In response to the market demand for this product series, our company has recently launched laminated products with the following special advantages:

- 因该贴面产品表面增加了特质的铝制金属层，更大程度提高了产品的防火性能。
- 其内部结构添加了特种工艺制作的高分子材料，大大提高了产品的抗撕裂、抗冲击、耐腐蚀性能。
- Due to the addition of a special aluminum metal layer to the surface of the laminated product, the fire resistance of the product is greatly improved.
- Its internal structure is added with polymer material made by special process, which greatly improves the tear, impact and corrosion resistance of the product.

以上两种贴面产品的共同性

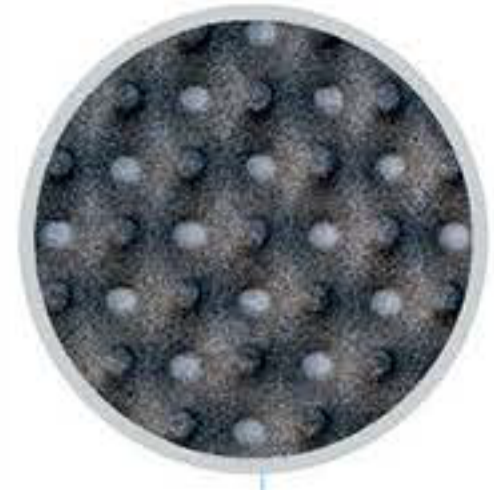
- 外观高档、整洁、大方、尤其适用于超市、展览中心、体育场、车间等非吊顶的建构场所。
- 防紫外线、抗氧化、抗老化、耐腐蚀。
- 具备优异的抗水汽渗透能力，能够保持产品初始导热系数。
- 大大提高了产品的使用寿命。

特点：因该贴面与橡塑之间增加了硬质塑料闭孔发泡材料，故其具有挺阔度高、立体感强的感觉特点。

COMMONALITIES BETWEEN THE ABOVE TWO PASTE STYLES PRODUCTS

- The appearance is high-end, generous, and elegant, especially suitable for non-suspended ceiling architectural spaces such as supermarkets, exhibition centers, stadiums, workshops, etc.
- It is resistant to ultraviolet rays, oxidation, aging, and corrosion.
- It has excellent water vapor permeability resistance, maintaining the initial thermal conductivity coefficient of the product.
- Greatly improves the product's service life.

Feature: The addition of rigid plastic closed-cell foam material between the laminated surface and the rubber foam gives it a sense of high stiffness and strong three-dimensionality.

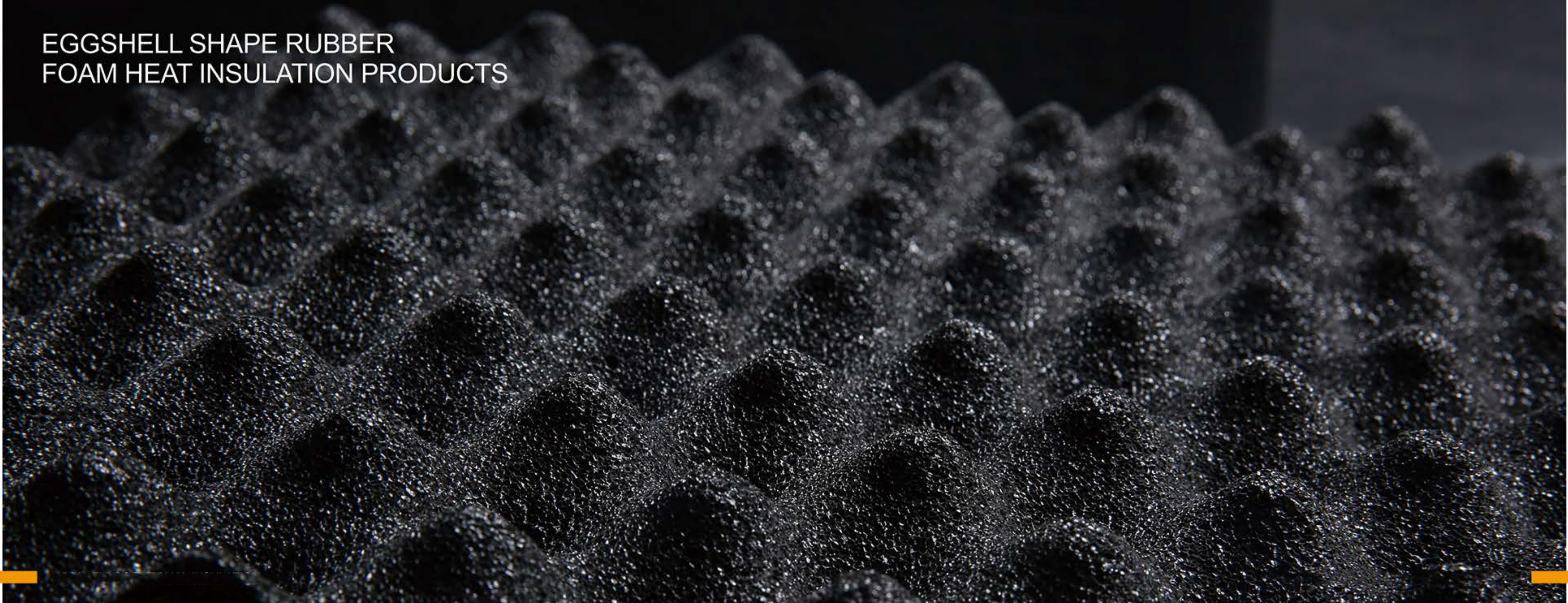


产品说明 | PRODUCT DESCRIPTION

鸡蛋棉又名波浪棉、波峰棉，是吸音棉中的一种。鸡蛋棉是经过设备特殊处理形成一面凹凸波浪形的一种海绵，其内部充满细小空隙及半开孔结构能大量吸收射入的声波能量对声波起到衰减作用，降低室内反射声的干扰和回响，提高声音的纯度，是吸音降噪材料的高性能产品。

Eggshell shape rubber foam also known as wave foam or peak foam, is a type of sound-absorbing foam. It is a type of sponge that is formed into a concave and convex wave shape through special equipment processing. Its interior is filled with tiny voids and semi-open pores that can absorb a large amount of incoming sound wave energy, reducing indoor sound reflections and echoes, and improving sound purity. It is a high-performance product for sound absorption and noise reduction materials.

EGGSHELL SHAPE RUBBER FOAM HEAT INSULATION PRODUCTS



RUBBER FOAM SPECIAL ADHESIVE | 弗耐斯橡塑专用胶水



主要用于管材、板材的接缝及材料与设备等的粘接，该胶水干化时间短，干化后强度高，与弗耐斯橡塑结合使用能达到最佳使用效果。

This adhesive is mainly used for bonding seams of pipes and sheets, as well as materials and equipment. It has a short drying time and high strength after drying. Used in combination with rubber foam, it can achieve the best effect.

规格 (毛重) Specifications (Gross Weight)

10 千克/桶 20.5 千克/桶
10 kg/bucket 20.5 kg/bucket

SPECIAL ADHESIVE TAPE FOR NON-DRY ADHESIVE | 弗耐斯不干胶专用胶带



主要用于接缝或形状复杂部位的保温。
It is mainly used for heat insulation of seams or complex shapes.

规格 (长 x 宽 x 厚) Specifications (Length x Width x Thickness)

10000mm x 50mm x 3mm

SPECIAL FABRIC TAPE FOR RUBBER FOAM | 弗耐斯布基专用胶带



板、管用胶水粘合后接缝处用布基胶带处理能起到保护与美观作用。

After gluing the seams of the plates and pipes, the use of fabric tape can play a protective and aesthetic role.

规格 (长 x 宽) Specifications (Length x Width)

25000mm x 28mm 40卷/箱 (rolls/box)
25000mm x 35mm 32卷/箱 (rolls/box)
25000mm x 48mm 24卷/箱 (rolls/box)

弗耐斯橡塑 6大特点

6 KEY FEATURES OF RUBBER FOAM



阻燃性能好

Excellent flame retardancy



闭孔式发泡，防潮性能好

Closed-cell foam for good moisture resistance



柔韧性能高

High flexibility



安装方便，外形美观

Easy installation and attractive appearance



抗震性能强

Strong earthquake resistance



导热系数低

Low thermal conductivity

科技飞速发展的今天，好产品的创造离不开先进、精密的设备和优质的原材料。弗耐斯橡塑以先进的设备、优良工艺的保证，铸就了超强优势的产品。

In today's rapidly developing technology, the creation of good products is inseparable from advanced and precise equipment and high-quality raw materials. With advanced equipment and excellent craftsmanship, rubber foam has created products with superior advantages.

包装标准 | PACKAGING STANDARDS

工程管材系列 ENGINEERING PIPE SERIES									
规格型号 Specification & Model (mm)	包装数量 (条/包) Packaging Quantity (tube/package)	规格型号 Specification & Model (mm)	包装数量 (条/包) Packaging Quantity (tube/package)	规格型号 Specification & Model (mm)	包装数量 (条/包) Packaging Quantity (tube/package)	规格型号 Specification & Model (mm)	包装数量 (条/包) Packaging Quantity (tube/package)	规格型号 Specification & Model (mm)	包装数量 (条/包) Packaging Quantity (tube/package)
06*9	100	6*13	120	13*25	40	13*30	30	1.5*10	20
10*9	140	10*13	110	16*25	35	16*30	30	1.5*15	12
13*9	120	13*13	100	19*25	35	19*30	30	1.5*20	10
16*9	100	16*13	80	22*25	30	22*30	25	1.5*25	8
19*9	100	19*13	70	25*25	25	25*30	25	1.5*30	6
22*9	80	22*13	60	28*25	25	28*30	20		
25*9	80	25*13	60	32*25	20	32*30	20		
28*9	60	28*13	50	34*25	20	34*30	20		
32*9	60	32*13	40	35*25	20	35*30	20		
34*9	60	34*13	40	38*25	20	38*30	15		
35*9	60	35*13	40	42*25	15	42*30	15		
38*9	60	38*13	40	43*25	15	43*30	15		
42*9	50	42*13	40	48*25	15	48*30	15		
43*9	50	43*13	40	54*25	12	54*30	12		
48*9	50	48*13	35	60*25	12	60*30	12		
				76*25	10	76*30	10		
				89*25	10	89*30	10		
				108*25	10	108*30	8		
						108*30	8		

安装所需厚度对照表 (供参考) | REQUIREMENTS TABLE OF THICKNESS FOR INSTALLATION (ONLY FOR REFERENCE)

环境条件 Environmental conditions		保温管尺寸 Insulated pipe size		管径温度下适用厚度 (毫米) Thickness used at pipe temperature (mm)			
温度 (Temperature)	相对湿度 (Relative humidity)	英寸 (Inch)	毫米 (mm)	13℃	7℃	3℃	-15℃
26.5℃	50%	3/8-3	10-76	10	10	10	15
		3-5	76-127	15	15	15	15
		5-10	127-254	15	15	15	20
29℃	70%	3/8-3	10-76	10	15	15	20
		3-5	76-127	15	15	15	20
		5-10	127-254	15	15	15	25
32℃	80%	3/8-3	10-76	15	15	20	20
		5-10	127-254	20	20	25	35
		3/8-1 1/2	10-38	20	25	30	45
32℃	85%	1 1/2-3	38-76	20	30	30	50
		3-5	76-127	20	30	35	60
		5-10	127-254	25	30	40	60
		>10	>254	30	40	45	70
		1 1/8-1 1/2	3-13	25	32	35	45
32℃	90%	1 1/2-2 1/2	13-64	30	35	45	60
		2 1/2-5	64-127	30	35	45	65
		5-10	127-254	35	45	50	75
		>10	>254	35	50	60	75

- 确定保温材料厚度考虑的因素: Factors to consider in determining the thickness of the heat insulation material:
1. 环境温度越高, 材料越厚; 1. The higher the ambient temperature, the thicker the material; and
 2. 相对湿度越大, 材料越厚; 2. The higher the relative humidity, the thicker the material; and
 3. 介质温度越低, 材料越厚; 3. The lower the temperature of the medium, the thicker the material; and
 4. 管道直径越大, 材料越厚; 4. The larger the diameter of the pipe, the thicker the material.

板材 (1.5宽) | BOARD MATERIAL (1.5M WIDTH)

厚度 Thickness (mm)	长度 Length (m)	宽度 Width (m)	包装数量 Packaging Quantity	平方米数 Square Meterage (m²)	立方数 Cubic Meterage (m³)
10	20	1.5	1	30	0.3
15	12	1.5	1	18	0.27
20	10	1.5	1	15	0.3
25	8	1.5	1	12	0.3
30	6	1.5	1	9	0.27

注: 1. 以上规格均为常用规格, 如需特殊规格可根据用户要求制作。
2. 板材、管材为黑色, 如需特殊颜色可根据用户要求制作。
3. 管道外径超过108mm建议选用板材。
4. 保温材料厚度超过30mm, 采用多层重叠包装, 直至所需厚度。
5. 板材宽度可根据用户要求定做1-1.2米。

Notes: 1. The specifications above are all commonly used. Special specifications can be made according to customer requirements.
2. Board materials and pipe materials are black. Special colors can be made according to customer requirements.
3. When the outer diameter of the pipe exceeds 108mm, it is recommended to use board materials.
4. Heat insulation materials require a thickness of more than 30mm. Multi-layer overlapping packaging is used until the desired thickness is reached.
5. The width of the board material can be customized from 1 to 1.2 meters according to customer requirements.

产品技术指标

项目 Item	单位 Unit	性能指标 Performance Indicator	执行标准 Execution Standard
表观密度 Apparent Density	Kg/m³	≤95	GB/T 6343
燃烧性能 Combustion Performance	氧指数 Oxygen Index	≥32	GB/T 2406
	烟密度 Smoke Density	≤75	GB/T 8627
		当用于建筑领域时, 不低于C级 When used in the construction field, it should not be lower than grade C	GB 8624-2006
导热系数 Thermal Conductivity 平均温度 Average Temperature	W/(m.k)	-20℃	≤0.031
		0℃	≤0.034
		40℃	≤0.036
透湿性能 Moisture Permeability	透湿系数 Moisture Permeability Coefficient	≤2.8 × 10 ⁻¹¹	GB/T 17146-1997
	湿阻因子 Dampening Factor	≥7.0 × 10 ⁹	
真空吸水率 Vacuum Water Absorption Rate	%	≤10	GB/T 17794-2008
尺寸稳定性 Dimensional Stability 105 ± 3℃, 7d	%	≤10	GB/T 8811
撕裂强度 Tear Strength	N/cm	≥2.5	GB/T 10808
压缩回弹率 Compression Recovery Rate 压缩率 Compression Rate 50% 压缩时间 Compression Time 72h	%	≥70	GB/T 6669-2001
耐臭氧性 Ozone Resistance 臭氧分压 Ozone Partial Pressure 202 mpa 200h	—	不龟裂 Not cracking	GB/T 7762
抗老化性 Anti-aging Performance 150h	—	轻微起皱, 无裂纹, 无针孔, 不变形 Slight wrinkling, no cracks, no pinholes, no deformation	GB/T 16259
适用温度 Applicable Temperature	℃	-40℃-110℃	GB/T 17794

注: B1级产品质量执行GB/T 17794-2008《柔性泡沫橡塑绝热制品》标准 II类指标
Note: The quality of B1 grade products follows the standard GB/T 17794-2008 (Flexible Foam Rubber Thermal Insulation Products) Category II indicators.



GLASS WOOL PIPE



GLASS WOOL BOARD

产品介绍 | PRODUCT INTRODUCTION

本品为玻璃棉施加树脂粘合剂，加温固化成管状的保温材料，其表面可粘贴铝箔。具有吸音降噪，能有效阻止共振；低吸湿性，物理性质稳定；导热系数低，保温性能强；A1级防火标准，永久不燃；抗挤压、抗冲击性强等特点。

This product is a thermal insulation material made by applying resin binder to glass wool, heating and curing it into a tubular shape. Its surface can be pasted with aluminum foil. It has the characteristics of sound absorption and noise reduction, effectively preventing resonance; low moisture absorption and stable physical properties; low thermal conductivity and strong thermal insulation performance; A1-level fire resistance, permanently non-flammable; strong resistance to extrusion and impact.

技术指标 | TECHNICAL SPECIFICATIONS

容重 Bulk Density	管壳内径 Inner Diameter of Pipe Shell	厚度 Thickness
50-80kg/m ³	Φ22-1220mm	30mm-100mm

产品应用 | PRODUCT APPLICATION

它适用于各种类型的冷、热管道和隐藏、外露管道的绝热保温。用于电力、石油、化工、轻工、冶金等行业的管道保温隔热中。

It is suitable for the thermal insulation of various types of cold and hot pipelines, as well as hidden and exposed pipelines. It is used for pipeline thermal insulation in industries such as electrical power, petroleum, chemicals, light industry, metallurgy, etc.

产品介绍 | PRODUCT INTRODUCTION

本品为玻璃棉施加酚醛树脂粘合剂，加压加温固化成型的板状材料，表面可粘贴PVC膜面料，也可粘贴铝箔。产品具有容重轻、吸声系数大、阻燃等特点，有极好的化学稳定性。

用途：屋顶保温、保冷、吸音材料建筑物保温、保冷、娱乐场所影剧院、电视台、广播电台、试验室、吸音处理，空调管道冷冻及冷藏仓库的隔热。

This product is a plate material made by applying phenolic resin binder to glass wool, pressing and heating it for curing. Its surface can be pasted with PVC film fabric or aluminum foil. The product has the characteristics of light bulk density, high sound absorption coefficient, flame retardancy, and excellent chemical stability.

Uses: Roof heat insulation, cold insulation, sound absorption materials; building heat insulation, cold insulation; entertainment venues such as theaters, television stations, radio stations, laboratories; sound absorption treatment; heat insulation for air conditioning pipes, freezers, and refrigerated warehouses.

技术指标 | TECHNICAL SPECIFICATIONS

体积密度 Volume Density	安全使用温度 Safe Operating Temperature	纤维直径 Fiber Diameter	规格 Specifications
24-96kg/m ³	-120~450℃	≤6-8μm	1200 x 1200 x 20-150mm 1200 x 600 x 20-150mm



产品介绍 | PRODUCT INTRODUCTION

本品为玻璃棉施加粘合剂，加温固化成型的毡状材料。其容重比板材轻，有良好的回弹性，价格便宜，施工方便。

This product is made of glass wool applied with adhesive, and is a felt-like material formed by heating and curing. It has a lighter weight than board material, good resilience, low price, and easy installation.

技术指标 | TECHNICAL SPECIFICATIONS

容重 Bulk Density	厚度 Thickness	长度 Length	宽度 Width
10-48kg/m ³	25-200mm	3m-30m	430-1200mm

GLASS WOOL FELT



产品介绍 | PRODUCT INTRODUCTION

岩棉管是一种主要应用于管道的岩棉保温材料，是以天然玄武岩为主要原料，经高温熔融后，由高速离心设备制成人造无机纤维，同时加入特制的粘结剂和防尘油，再经加温固化，制作成各种规格，不同要求的岩棉保温管。同时岩棉也可以与玻璃棉硅酸铝棉复合制成岩棉复合保温管壳。岩棉管壳是以精选的辉绿岩和玄武岩矿渣为主要原料，经高温融化在高速离心过程中喷入特制粘合剂和防水剂而制成的树脂岩棉保温管壳和防水岩棉保温管壳。

Rock wool pipe is a type of heat insulation material mainly used for pipelines. It is made of natural basalt as the main raw material, which is melted at high temperature and then processed into artificial inorganic fibers by high-speed centrifugal equipment. Special binders and dustproof oil are added, and then heated and cured to make various specifications and different requirements of rock wool heat insulation pipes. In addition, rock wool can also be combined with glass wool and silicon aluminum wool to make a composite heat insulation pipe shell. The rock wool pipe shell is made of selected diabase and basalt slag as the main raw materials. After high-temperature melting, special adhesives and waterproofing agents are sprayed into the high-speed centrifugal process to produce resin rock wool heat insulation pipe shells and waterproof rock wool heat insulation pipe shells.

技术指标 | TECHNICAL SPECIFICATIONS

密度 Density	内径 Inner Diameter	厚度 Thickness	长度 Length
80-160kg/cm ³	18-1016mm	30-150mm	1000mm

产品应用 | PRODUCT APPLICATION

岩棉管壳广泛应用于石油、化工、冶金、船舶、纺织等各工业锅炉及设备管道的保温，也用于建筑行业的隔墙，吊顶及内外墙的保温和及各种类型的冷、热管道和隐藏、外露管道的绝热保温。

Rock wool pipe are widely used in the heat insulation of industrial boilers and equipment pipelines in the petroleum, chemical, metallurgical, shipbuilding, and textile industries. They are also used for partition walls, ceilings, and heat insulation of internal and external walls in the construction industry, as well as for thermal insulation of various types of hot and cold pipelines and concealed and exposed pipelines.

ROCK WOOL PIPE





ROCK WOOL BOARD

产品介绍

PRODUCT INTRODUCTION

本产品是以玄武岩为主要原材料，经高温熔融加工而成的无机纤维板，具有质量轻、导热系数小、吸热、不燃的特点，产品广泛适用于冶金、电力、化工、建筑、船舶等领域。

This product is an inorganic fiber board made from basalt as the main raw material through high-temperature melting processing. It features light weight, low thermal conductivity, heat absorption, and non-combustibility. It is widely used in metallurgy, electric power, chemical, construction, shipping, and other industries.

技术指标

TECHNICAL SPECIFICATIONS

体积密度 Bulk Density	最高使用温度 Maximum Operating Temperature	纤维直径 Fiber Diameter	规格 Specifications
60-600kg/m ³	650℃	4-7μm	1000-1200mm x 600-630mm x 40-100mm



ROCK WOOL FELT

产品介绍

PRODUCT INTRODUCTION

岩棉毡产品采用优质玄武岩作为原料，具有良好的不燃性，熔点在1000℃以上，在隔热防火、降低或吸收噪音方面特别有效。本产品用于大型管道罐体以及异型的工业设备的保温隔热。

Rock wool felt is made of high-quality basalt as the raw material. It has excellent non-combustibility with a melting point above 1000°C. It is particularly effective in thermal insulation, fire prevention, and noise reduction or absorption. This product is used for thermal insulation of large-scale pipeline tanks and irregularly shaped industrial equipment.

技术指标

TECHNICAL SPECIFICATIONS

体积密度 Bulk Density	最高使用温度 Maximum Operating Temperature	纤维直径 Fiber Diameter	规格 Specifications
60-120kg/m ³	600℃	4-7μm	3000-5000mm x 200-900mm x 20-100mm



FIREPROOF SMOKE EXHAUST DUCT

防排烟风管

产品优势 | PRODUCT ADVANTAGES

防火卓越，A级不燃

EXCELLENT FIRE RESISTANCE, CLASS A NON-COMBUSTIBLE

弗耐斯防排烟风管具有良好防火性能，1200°C无火苗，耐火极限可达1小时，火焰持续燃烧时间为零，达到防火不燃A级。

Fireproof smoke exhaust duct has excellent fire resistance, no flame at 1200°C, a fire resistance limit of up to 1 hour, and a continuous flame burning time of zero, reaching Class A non-combustibility.



隔音安宁，隔热节能

SOUNDPROOF AND PEACEFUL, THERMAL INSULATION AND ENERGY SAVING

弗耐斯防排烟风管材质均匀细密，结构特性决定了它优越的隔音性能。同时内保温能量损耗极低，可大幅降低能源消耗。

The material of the fireproof smoke exhaust duct is uniform and fine, and its structural characteristics determine its excellent sound insulation performance. At the same time, the internal heat insulation energy loss is extremely low, which can significantly reduce energy consumption.



防潮防腐，耐水防虫

MOISTURE-PROOF, ANTI-CORROSION, WATER RESISTANT, AND INSECT-PROOF

弗耐斯防排烟风管性能稳定，不受凝结水珠和潮湿空气影响，不变形。

The fireproof smoke exhaust duct has stable performance, is not affected by condensed water droplets and damp air and does not deform.



无毒无味，安全放心

NON TOXIC AND ODORLESS, SAFE AND RELIABLE

弗耐斯防排烟风管通过多项环保认证，无毒害物质，安全健康。

The fireproof smoke exhaust duct has passed multiple environmental protection certifications, is non-toxic, and safe and healthy.



安装简单，支持定制

EASY INSTALLATION, CUSTOMIZABLE

弗耐斯防排烟风管制作快速方便，支持各种规格定制。

The fireproof smoke exhaust duct is quick and easy to fabricate and supports various specifications for customization.



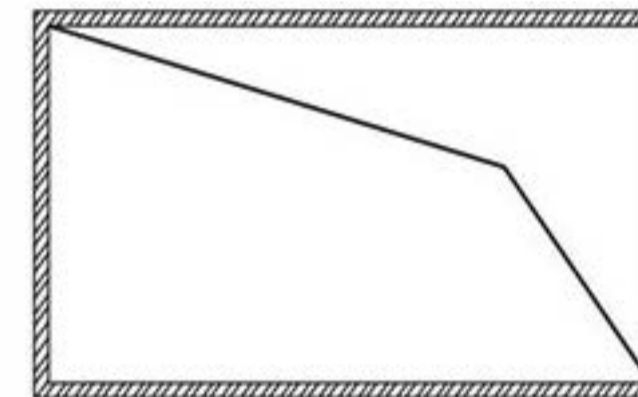
弗耐斯防排烟风管突破了传统工艺，采用镀锌钢皮，大幅提高了风管强度，在安装时能有效的掩盖碰撞的轻微痕迹，增强风管美观度，成为复合型风管材料的又一进化趋势产品。

The fireproof smoke exhaust duct breaks through traditional technology, adopting galvanized steel sheet, significantly improving the duct strength. During installation, it can effectively cover slight traces of collisions, enhancing the duct's aesthetics, and becoming another evolutionary trend product of composite duct materials.

0.5小时高温玻璃棉外包结构

0.5-HOUR HIGH-TEMPERATURE GLASS WOOL OUTER PACKAGE STRUCTURE

风管横剖面图 CROSS-SECTIONAL VIEW OF DUCT



耐水阻燃贴面 (外层)
Water-resistant and Flame-retardant Veneer (Outer Layer)

30mm防排烟专用绝热玻璃棉
30mm Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust

工程风管 (内层)
Engineering Duct (Inner Layer)

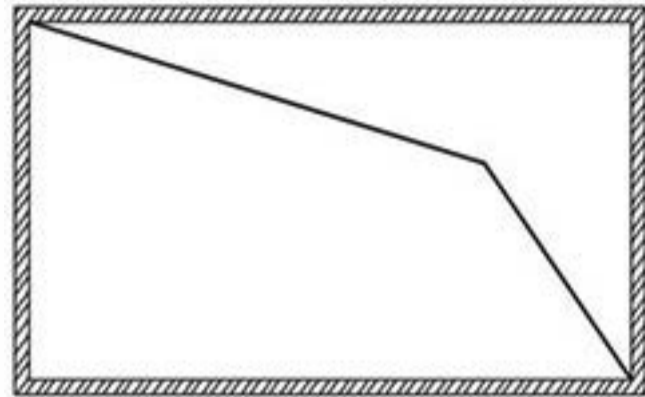
项目名称 PROJECT NAME		技术参数 TECHNICAL PARAMETERS	
结构 Structure		镀锌钢板 + 防排烟专用绝热玻璃棉 + 耐水阻燃贴面 Galvanized Steel Sheet + Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust + Water-resistant and Flame-retardant Veneer	
内层 Inner Layer	材质 Material	镀锌钢板 Galvanized Steel Sheet	
	厚度 Thickness	工程风管壁厚 Engineering Duct Wall Thickness	
芯材 Core Material	名称 Name	防排烟专用绝热玻璃棉 Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust	
	厚度 Thickness	30mm	
	容重 Bulk Density	32k	
外层 Outer Layer	材质 Material	耐水阻燃贴面 Water-resistant and Flame-retardant Veneer	
	厚度 Thickness	--	
连接方式 Connection Method		风管制作决定 Duct Fabrication Decision	
施工方式 Installation Method		风管吊装，包覆二次施工 Duct Hoisting, Secondary Cladding Construction	



1小时高温玻璃棉外包结构

1-HOUR HIGH-TEMPERATURE
GLASS WOOL OUTER PACKAGE STRUCTURE

风管横剖面图 CROSS-SECTIONAL VIEW OF DUCT



耐水阻燃贴面 (外层) Water-resistant and Flame-retardant Veneer (Outer Layer)
50mm防排烟专用绝热玻璃棉 50mm Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust
工程风管 (内层) Engineering Duct (Inner Layer)

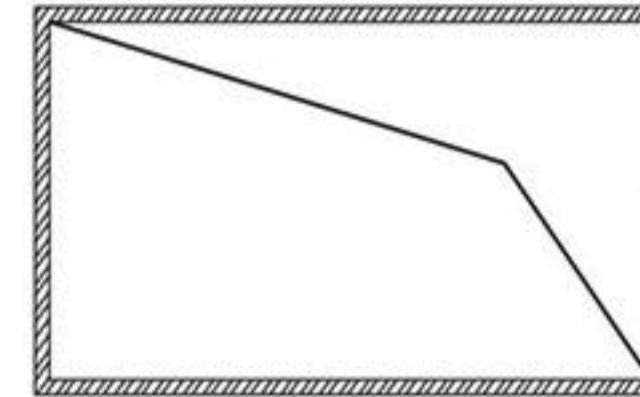
项目名称 PROJECT NAME		技术参数 TECHNICAL PARAMETERS
结构 Structure		镀锌钢板 + 防排烟专用绝热玻璃棉 + 耐水阻燃贴面 Galvanized Steel Sheet + Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust + Water-resistant and Flame-retardant Veneer
内层 Inner Layer	材质 Material	镀锌钢板 Galvanized Steel Sheet
	厚度 Thickness	工程风管壁厚 Engineering Duct Wall Thickness
芯材 Core Material	名称 Name	防排烟专用绝热玻璃棉 Special Thermal Insulation Glass Wool for Fireproof Smoke Exhaust
	厚度 Thickness	50mm
	容重 Bulk Density	48k
外层 Outer layer	材质 Material	耐水阻燃贴面 Water-resistant and Flame-retardant Veneer
	厚度 Thickness	--
连接方式 Connection Method		风管制作决定 Duct Fabrication Decision
施工方式 Installation Method		风管吊装, 包覆二次施工 Duct Hoisting, Secondary Cladding Construction



2小时硅酸铝纤维棉外包结构

2-HOUR ALUMINUM SILICATE
FIBER WOOL OUTER PACKAGE STRUCTURE

风管横剖面图 CROSS-SECTIONAL VIEW OF DUCT



耐水阻燃贴面 (外层) Water-resistant and Flame-retardant Veneer (Outer Layer)
40mm硅酸铝纤维棉 40mm Aluminum Silicate Fiber Wool
工程风管 (内层) Engineering Duct (Inner Layer)

项目名称 PROJECT NAME		技术参数 TECHNICAL PARAMETERS
结构 Structure		镀锌钢板 + 硅酸铝纤维棉 + 耐水阻燃贴面 Galvanized Steel Sheet + Aluminum silicate fibre cotton + Water-resistant and Flame-retardant Veneer
内层 Inner Layer	材质 Material	镀锌钢板 Galvanized Steel Sheet
	厚度 Thickness	工程风管壁厚 Engineering Duct Wall Thickness
芯材 Core Material	名称 Name	硅酸铝纤维棉 Aluminum silicate fibre cotton
	厚度 Thickness	40mm
	容重 Bulk Density	96k
外层 Outer layer	材质 Material	耐水阻燃贴面 Water-resistant and Flame-retardant Veneer
	厚度 Thickness	--
连接方式 Connection Method		风管制作决定 Duct Fabrication Decision
施工方式 Installation Method		风管吊装, 包覆二次施工 Duct Hoisting, Secondary Cladding Construction





Pipeline Function

防排烟管道的作用

Function of Fireproof Smoke Exhaust Duct

- 为人员安全疏散提供时间和条件
- 帮助改进消防救援条件
- Provide time and conditions for safe evacuation of personnel
- Help improve conditions for fire rescue



Performance Requirements

防排烟管道的性能要求

Performance requirements for fireproof smoke exhaust duct

- 结构安全—保持完整性，防止蹿火
- 不燃隔热—避免燃烧和引燃
- Structural safety – maintain integrity and prevent fire spreading
- Non-combustible heat insulation – avoid combustion and ignition



Relevant Norms

防排烟管道的相关规范

Relevant norms for fireproof smoke exhaust duct

- 《建筑防排烟系统技术标准》(GB51251-2017)
- 现行防火规范和设计标准、测试方法标准、施工质量验收规范
- 《Technical Standard for Building Fireproof Smoke Exhaust System》(GB51251-2017)
- Current fire protection code, design standard, test method standard, and acceptance specification for construction quality



Pipeline Function

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岩棉加防火板包裹与弗耐斯硅酸铝纤维毡包裹的对比

COMPARISON BETWEEN ROCK WOOL WITH FIREPROOF BOARD WRAPPING AND FUNAS ALUMINUM SILICATE FIBER MAT WRAPPING

性能 Performance	基本构造 Basic Structure	主要特点 Main Features	系统增量 (KG) Weight Increase (KG)	主要施工步骤 Main Construction Steps	综合比较 Comprehensive Comparison
普通铁皮风管+岩棉+防火板包裹 Ordinary galvanized iron duct + rock wool + fireproof board wrapping	镀锌钢板+岩棉+钢龙骨+防火板 Galvanized steel sheet + rock wool + steel keel + fireproof board	四层结构，两次支撑(或吊装)固定，现场施工复杂，问题隐患多，优点是成品耐火风管价格便宜，基本满足防火极限要求。 Four-layer structure, twice support (or suspension) and fixation complex on-site construction, many potential problems, but the price of finished fire-resistant duct and basically meet the fire resistance limit requirements.	每平方米增加22公斤 22 kg per square meter	先制作安装固定好铁皮风管，在铁皮风管表面包裹防火岩棉，再安装龙骨支撑，外面再包防火板材。 Firstly, fabricate and install the fixed galvanized iron duct, then wrap the surface of the duct with fire-resistant rock wool, install the keel support, and wrap the outer surface with fireproof board.	结构复杂，安装缓慢，成本昂贵，问题隐患多，特别是返锈、返潮严重，导致固定金属钉锈蚀，防潮板垮塌脱落!深圳、广州等城市轨道交通项目使用后，效果较差，已被限制使用。 Complex structure, slow installation, expensive cost, and many potential problems, especially serious efflorescence and dampness leading to corrosion of fixed metal nails and collapse and falling of moisture-proof board! After being used in urban rail transit projects in Shenzhen, Guangzhou, etc., the effect is poor, and its use has been restricted.
普通铁皮风管+弗耐斯硅酸铝纤维毡包裹 Ordinary galvanized iron duct + Funas aluminum silicate fiber mat wrapping	镀锌钢板+弗耐斯硅酸铝纤维毡 Galvanized steel sheet + Funas aluminum silicate fiber mat	通过国家建筑材料测试中心2、小耐火极限检测，满足国际GB51251-2017《建筑防排烟系统技术标准》要求，具有结构简单施工便捷维护方便成本低。 Passing the 2-hour fire resistance limit test conducted by the National Building Material Test Center, it meets the requirements of the national standard GB51251-2017 Technical Standard for Building Smoke Control and Exhaust System, with simple structure, convenient construction, easy maintenance, and low cost.	每平方米增加4.8公斤 4.8 kg per square meter	先制作安装固定好铁皮风管，外面采用弗耐斯柔性防火硅酸铝纤维毡包裹，两步即可完成。 Firstly, fabricate and install the fixed galvanized iron duct, then wrap the outer surface of the duct with Funas flexible fire-resistant aluminum silicate fiber mat, and complete in two steps.	柔性包裹，强度高，防火防水，维护方便，经济耐用!国内地铁、交通枢纽、停车场等重大工程正逐渐广泛选用。 Flexible wrapping, high strength, fireproof and waterproof, convenient maintenance, economical and durable! Major domestic projects such as subway, transportation hub, and parking lots are gradually adopting it widely.

产品规格 | PRODUCT SPECIFICATION

容量 Bulk Density	厚度 Thickness	耐火时间 Fire Resistance Time	检验依据 Inspection Basis
96kg	40mm	120分钟 (min)	GB/T 17428-2009

岩棉板加防火板包裹的构造特点和施工步骤

STRUCTURAL FEATURES AND CONSTRUCTION STEPS OF ROCK WOOL BOARD WITH FIREPROOF BOARD WRAPPING

性能 Performance	基本构造 Basic Structure	主要特点 Main Features	主要施工步骤 Main Construction Steps
普通铁皮风管+岩棉+防火板包裹 Ordinary galvanized iron duct + rock wool + fireproof board wrapping	镀锌钢板+岩棉+钢龙骨+防火板 Galvanized steel sheet + rock wool + steel keel + fireproof board	耐火性能上达到国际ISO834温升曲线燃烧实验，强度是一般石膏板的两倍以上，导热系数远低于玻璃、黏土、普通混凝土是传统防火保温材料所不能比拟的高稳定性材料。 The fire resistance performance reaches the international ISO834 temperature rise curve combustion test. The strength is more than twice that of ordinary gypsum board. The thermal conductivity is much lower than that of glass, clay, and ordinary concrete. It is a high-stability material that cannot be compared with traditional fireproof heat insulation materials.	先制作安装固定好铁皮风管，在铁皮风管表面包裹防火岩棉，再安装龙骨支撑，外面再包防火板材。 Firstly, fabricate and install the fixed galvanized iron duct, then wrap the surface of the duct with fire-resistant rock wool, install the keel support, and wrap the outer surface with fireproof board.

产品规格 | PRODUCT SPECIFICATION

产品名称 Product Name	容量 Bulk Density	厚度 Thickness	结构 Structure	耐火时间 Fire Resistance Time	检验依据 Inspection Basis
岩棉板 Rock Wool Board	80kg	50mm	岩棉板+硅酸盐板 Rock wool board + silicate board	120分钟 120 minutes	GB/T 17428-2009
硅酸盐板 Silicate Board	1200kg	9mm			
岩棉板 Rock Wool Board	80kg	50mm	岩棉板+硅酸盐板 Rock wool board + silicate board	180分钟 180 minutes	
硅酸盐板 Silicate Board	1200kg	12mm			



产品介绍 | PRODUCT INTRODUCTION

金字塔泡沫是使用聚氨酯海绵材料经独特设备加工而成的方锥形吸音泡沫。经过复杂的发泡形成隔音、消音、吸音、减震的海绵材料。金字塔棉充满微小的间隙和半开的孔隙结构使其能吸收一定量的传入声波，起到较大的声学衰减效果，减少声波在室内反射时对声音的干扰和回声，保持声音的纯净度：吸音降噪材料中的高性能产品。

Pyramid foam is a square cone shaped sound absorbing foam formed by using polyurethane sponge material processed by unique equipment. After complex foaming to form the sound insulation, muffling, sound absorption, vibration reduction sponge material. The pyramid cotton is full of tiny gaps and half-open pore structure so that it can absorb the amount of incoming sound waves to play a greater acoustic attenuation effect, reduce the sound waves in the indoor reflections of sound interference and echoes, to maintain the purity of the sound: sound-absorbing noise-reducing materials of high-performance products.



颜色分类 黑色、浅灰色、黄色、蓝色、红色、深灰色、紫色、白色。
Colour classification Black, light grey, yellow, blue, red, dark grey, white.

特点与应用 | FEATURES AND APPLICATIONS

吸音降噪、防水防潮、高密度棉、环保材料、装饰性、使用寿命长、阻燃。广泛应用于影院、KTV、琴房、鼓房、录音室、音乐室、酒吧、直播室、工厂、设备降噪。

Features Sound absorption and noise reduction Waterproof and moisture-proof High-density cotton Environmentally friendly materials Decoration Long service life Fire retardant Wide range of applications. Scenario Cinema, KTV, piano room, drum room, recording studio, music room bar, live room, factory, equipment noise reduction.

施工事项 | CONSTRUCTION MATTERS

注意施工墙面应保持干燥无尘，无松动结构贴上后需挤压排除气体。

Note that the construction of the wall should be kept dry and dust-free, no loose structure affixed after the need to squeeze to eliminate gas.

产品特点 | PRODUCT FEATURES

不仅装饰空间，还能吸收回声
吸音降噪 高密度海绵 环保材料 防火阻燃 防水防潮 装饰效果好 使用寿命长 应用广泛

NOT ONLY DECOR THE SPACE, BUT ALSO ABSORB THE ECHO
Sound absorption and noise elimination high density sponge environmental protection material fire retardant waterproof moisture-proof decoration long service life widely used.

彩色高密度隔音棉
高密度加厚，消音方块棉批发 OEM/ODM 按需定制

COLOURFUL HIGH DENSITY SOUNDPROOF COTTON
High density thickened, sound deadening square cotton wholesale OEM/ODM Customised

回弹性好不易变形
挤压磨合高密设计承托力耐久性强 使用寿命长

GOOD RESILIENCE, NOT EASY TO DEFORM
Extruded, high density design, durable support, long service life.

防火阻燃安全可靠
防护阻燃材料 可达B1级阻燃标准明火燃烧实验 3秒离开火焰自动熄灭

FIRE RETARDANT, SAFE AND RELIABLE
Protective flame retardant material can reach B1 level flame retardant standard open flame combustion test 3 seconds away from the flame automatically extinguished

绿色环保精选优海绵
高品质 高密度 经久耐用给你一个踏实安全的保证

GREEN AND ENVIRONMENTALLY FRIENDLY SELECTION OF EXCELLENT SPONGE
High quality, high density, durable to give you a solid and safe guarantee

ACOUSTIC POLYURETHANE FOAM

