



明发隔热 防火保温材料

FIREPROOF INSULATION

专注高温材料30多年

FOCUS ON HIGH-TEMPERATURE MATERIALS FOR MORE THAN 30 YEARS



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莱州明发隔热材料有限公司成立于1991年，是一家从事隔热板材及相关应用产品的研发、生产、工程与服务的专利技术企业，作为国内规模较大的耐高温硅酸钙隔热材料的生产厂家，正以高速发展的稳健步伐走在同行业的前沿。公司产品品种齐全，产品技术含量在同行业中处于领先地位，主要产品有1000至1100℃硬硅钙石、硅酸钙等系列产品。产品被广泛应用于冶金、玻璃、水泥建材、石油化工、有色金属、热工机械，电力，轻工等行业的隔热保温工程。

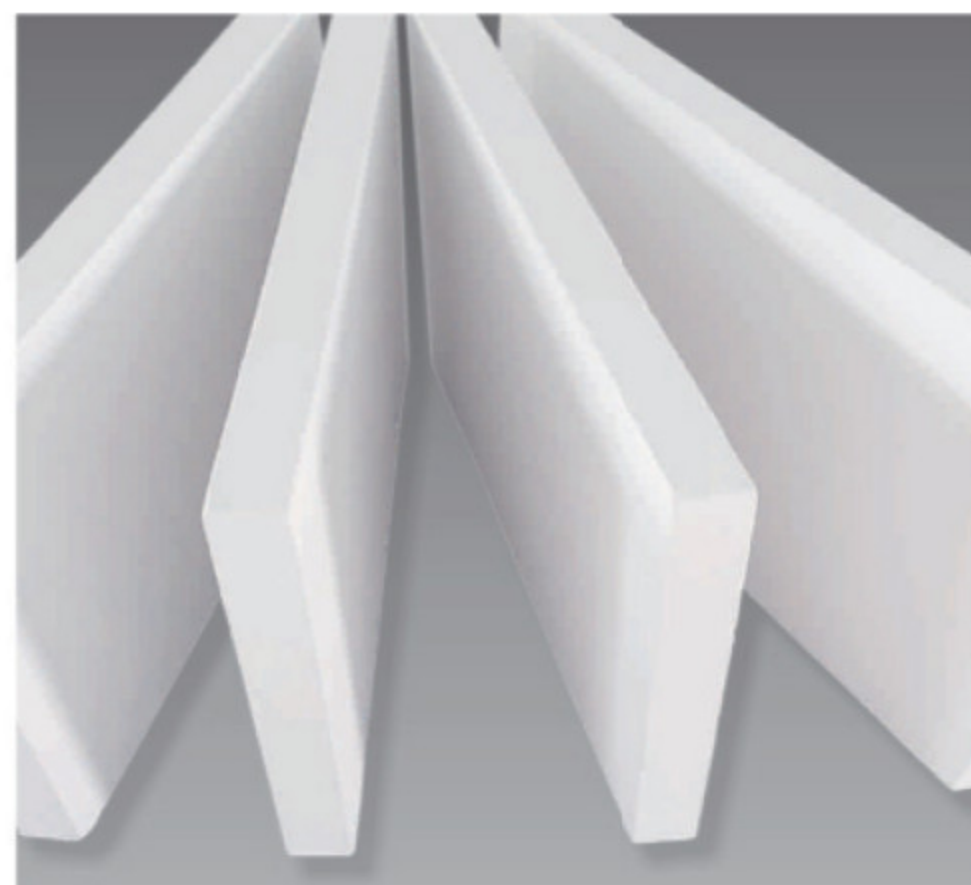
Laizhou Mingfa Insulation Material Co., Ltd. was established in 1991. It is a patent technology enterprise engaged in research and development, production, engineering and service of insulation boards and related application products. As one of the larger professional manufacturers of high-temperature resistant calcium silicate insulation materials in, it is moving forward to the forefront of the industry with a stable and high-speed development pace. The company has a complete range of products, and the technical content of its is leading in the same industry. The main products include xonotlite, calcium silicate and other series products from 1000 to 1100 dergeecetsius. The products are widely used in heat insulation and thermal insulation projects in metallurgy, glass, cement building materials, petrochemical, non-ferrous metal, thermal machinery electric power, light industry and other industries.

硅酸钙板1000°C

CALCIUM SILICATE BOARD 1000°C

低密度硅酸钙保温板, 体积密度一般在230-300kg/m³, 具有非常优秀的保温性能, 广泛应用于水泥行业、电解铝行业、钢铁行业、电厂等。

Calcium silicate insulation boards with the density of 230-300 kg/m³ are commonly used in cement industry, electrolytic aluminum industry, iron and steel industry and power plants etc.



产品特点 | FEATURES

- 耐高温
- Heat-resistant at high temperature
- 机械强度高
- Excellent mechanical strength
- 保温性能强
- Strong thermal insulation performance
- 易施工
- Easy construction
- 密度小
- Low density

产品技术指标 | TECHNICAL DATE



产品型号 Product type		HCS-20	HCS-23	HCS-25
密度 Bulk Density (Dry)	kg/m ³	200 (±10%)	230 (±10%)	250 (±10%)
断裂模数 Modulus of Rupture	MPa	≥0.35	≥0.45	≥0.50
室温耐压强度 Cold Crushing Strength (At 5% Deformation Room Temp.)	MPa	≥0.60	≥0.80	≥0.90
最高使用温度 Service Temp. Limit	°C	1000	1000	1000
线变化 Linear Shrinkage	%	≤2 (1000,16hrs)	≤2 (1000,16hrs)	≤2 (1000,16hrs)
热导率 Thermal Conductivity	W/m.k	200°C, 0.075	200°C, 0.085	200°C, 0.095
		400°C, 0.098	400°C, 0.100	400°C, 0.108
		600°C, 0.150	600°C, 0.152	600°C, 0.156
		800°C, 0.210	800°C, 0.214	800°C, 0.216
耐压强度 (16hrs*1000°C) Compression Strength at 10% Deformation after 16hrs*1000°C	Mpa	0.32	0.40	0.45
气孔率 Porosity	%	90.8	90.6	90.4
含水率 Moisture Content (by weight)	%	3-5		
PH值 PH Value		8-9		
颜色 Color		white		
表面情况 Surface Condition		1. 未经磨光 Original dimple pattern 2. 双面磨光 Double sanded, smooth and good flatness		

300.400.500型硅酸钙板指标

300.400.500 TYPE CALCIUM SILICATE BOARD INDICATORS

产品技术指数 | TECHNICAL DATE



产品型号 Product type	MF-30Q	MF-40Q	MF-50H
体积密度 (kg/m ³) Density	300 ±10%	400+10%	500+10%
常温抗压强度 (MPa) Compress Strength	≥2.4	≥3.5	≥5.0
常温抗折强度 (MPa) Flexural Strength	≥1.0	≥1.5	≥2.7
线收缩率 (%).1000 °C x3h Linear Shrinkage	≤1.2	≤1.2	≤3.0
导热系数 (热面温度 900 °C)(W/m.K) Thermalcond. (hot surface at900 °C)	≤0.11	≤0.11	≤0.14 (热面温度 1000 °C)

产品应用 | APPLICATIONS

作为优异的绝热背衬材料，产品可广泛用于绝大部分工业领域的热工设备。有色冶金行业，适合于电解槽槽底、侧壁、侧盖与烟道的绝热保温。

As excellent back-up insulation materials,it can be widely used in high-temperature process equipment.Calcium silicate boards are suitable for electrolyzer tank bottom and wall insulation.

| FEATURES

- 热导系数低，绝热效果好
- 热收缩率低，尺寸稳定
- 体积密度低，热容量少
- 理化性能稳定，耐久性好
- 机械强度高，不变形
- Low thermal conductivity, exceptional heat resistance
- Low lining shrinkage,dimensional stability
- Low density,low heat capacity
- Stable and excellent durability
- High machanical strength,no deformation

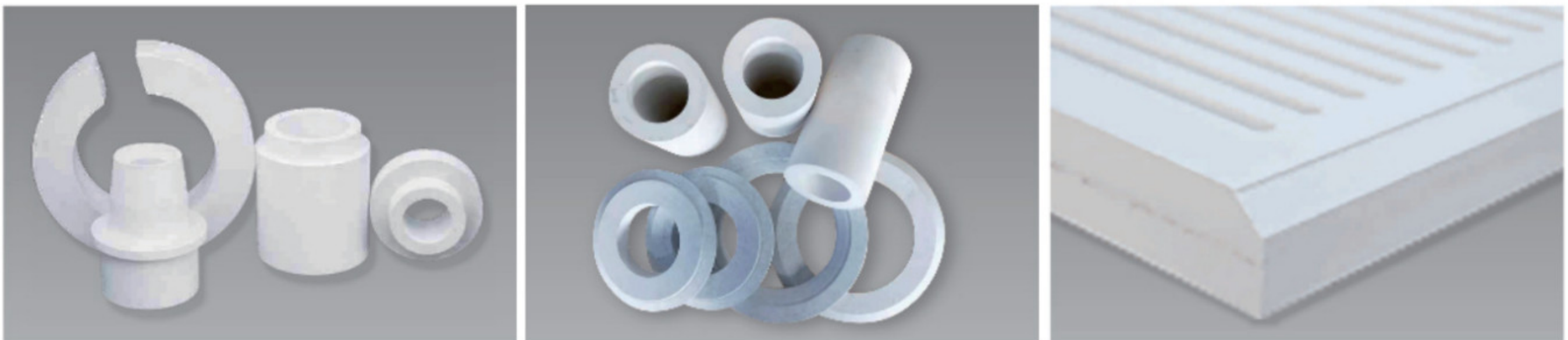
高密度不粘铝硅酸钙板[MF-80,MF-85] HIGH-DENSITY NON-STICK ALUMINUM CALCIUM SILICATE BOARD INR[MF-80,MF-85]

高密度不粘铝硅酸钙板是一种具有高强度、低收缩率和低导热率的无石棉保温材料,主要有玻璃纤维增强和碳纤维增强两种类型,体积密度一般为800-1000kg/m³,最高使用温度是1000℃。采取独特的纤维分散技术,使纤维均匀地散布于硅酸钙基质当中,大大提高了板材的耐高温性能及抗热震性能。

High-density non-stick alumina calcium silicate board is a kind of non-asbestos refractory material with high strength, low shrinkage and low thermal conductivity. There are mainly two types which are glass fiber reinforced boards and carbon fiber reinforced boards. The bulk density is generally 800-1000kg/m³, and the highest service temperature is 1000°C, unique fiber dispersion technology makes the fibers be able to evenly distributed in the calcium silicate matrix to greatly improve the high temperature resistance ability and thermal shock resistance ability.

高密度不粘铝硅酸钙板有良好的热震稳定性、机械加工性能优良、不粘铝,可方便加工成各种精密部件,主要适用于有色冶金行业,尤其是LPDC、HPDC、CPC及重力铸造相关设备,如热顶环、转接板、盖板、闸板、喷嘴、铸造箱、流槽、套管等。

High-density non-stick alumina calcium silicate board has good thermal shock stability, excellent mechanical processing performance, and is non-stick aluminum, can be easily processed into a variety of precision parts, mainly suitable for non-ferrous metallurgy industry, especially for LPDC, HPDC, CPC and gravity casting related equipment, such as hot top ring, transfer plate, cover plate, gate, nozzle, casting box, flow groove, sleeve and so on.

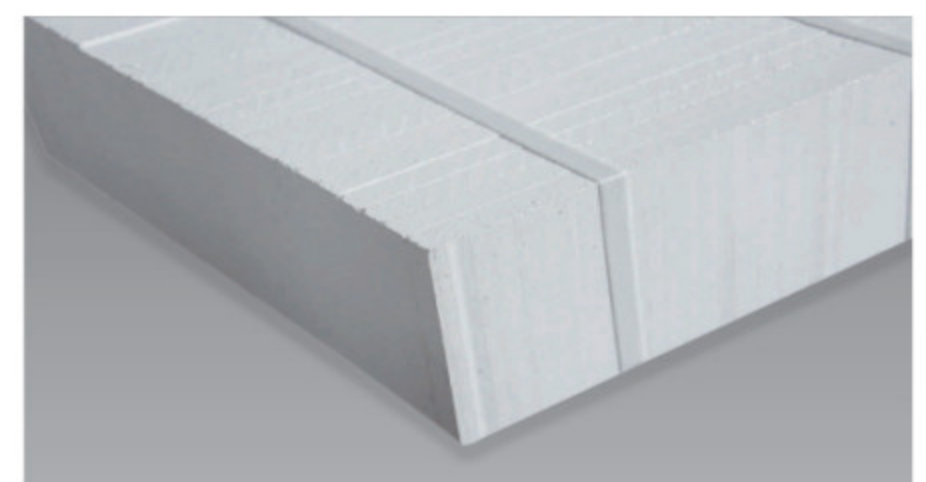


MF-HD钢包内衬板硅酸钙板

MF-HD STEEL LADLE LINING BOARD SILICATE CALCIUM BOARD

MF-HD钢包内衬板硅酸钙板是高密度硅酸钙板的一种,不含陶瓷纤维,低导热、高强度、内部结构及外形尺寸有极其良好的稳定性,是替代陶瓷纤维材料的理想选择。MF-HD钢包板不但可用于钢包内衬,也可以用于中间包、鱼雷罐以及电炉等。典型的体积密度是800-850kg/m³,常用尺寸有300*114*13mm,1200*600*13mm等。可定制特殊尺寸。

MF-HD steel shell board is a kind of high-density calcium silicate board, which is free of ceramic fiber, low thermal conductivity, high strength and has extremely good stability of internal structure and shape size, which is an ideal choice to replace ceramic fiber materials. MF-HD steel shell board can not only be used for steel shell, but also for ladle, torpedo tank and electric furnace, etc. The typical volume density is 800-850 kg/m³, and the common sizes are 300*114*13 mm, 1200*600*13 mm, etc. Special sizes can be customized.



产品技术指标 | TECHNICAL DATE



产品型号 Product type		MF-80(碳纤维增强) MF-80(reinforcedbycarbonfiber)	MF-85(玻璃纤维增强) MF-85(reinforcedby glassfiber)	MF-HD Board
体积密度Density	kg/m ³	750-850	800-900	850
分类温度 Classification temperature	°C	1000	1000	1000
连续使用温度 Service temperature	°C	850	850	850
弯曲强度 Bending strength	MPa	8	8	5.4
常温耐压强度 Cold compressive strength	MPa	15	17	13
热导率Thermal Conductivity				
200°C	W/m.K	0.13	0.13	
400°C	W/m.K	0.15	0.15	0.1
500°C	W/m.K	0.15	0.15	0.12
850°C*24小时烧后线收缩 Linear Shrinkage@850°C*24h				
线性Length or width direction	%	0.31	0.31	0.3
厚度Thickness direction	%	1.61	1.61	1.61
产品尺寸Production Sizes				
长Length	mm	1200(±2)	1200(±2)	
宽Width	mm	1200(±2)	1200(±2)	
厚Thickness	mm	20-120(±1)	20-120(±1)	

产品特点 | FEATURES

- 耐高温
- Heat-resistant at high temperature
- 机械强度高
- Excellent mechanical strength
- 无石棉
- Non asbestos
- 抗热震性能好
- Thermal shock resistance
- 保温性能强
- Out standing thermal insulation performance
- 加工安装简便
- Easy to shape and install
- 不粘铝
- Non-stick aluminum



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