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Technical Specification Sheet: Standard Silica Fiberglass Filter Mesh

Quality Assurance Department
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Product Overview

Standard Silica Fiberglass Filter Mesh is specifically engineered for the filtration and purification of molten aluminum and aluminum alloys. It is woven from high-quality Standard-silica glass fibers and coated with a specialized resin to enhance its stiffness and thermal resistance during the initial impact of molten metal.

Technical Data (Typical Properties)

Property	Value / Requirement	Test Method
Material Base	Standard-Silica Fiber	-
Coating Type	Heat-resistant resin (Brown/Yellow)	-
Working Temperature	$\leq 800°C$	Pyrometric Test
Softening Point	$850°C$	-
SiO_2 Content	$58\% \sim 65\%$ (Standard Grade)	Chemical Analysis
Gas Evolution	$\leq 40\ cm^3/g$	High Temp Furnace
Loss on Ignition (LOI)	$10\% \sim 15\%$	$550°C$ for 1 hr

Application Scenarios (Key Use Cases)

This filter mesh is versatile and widely adopted across various aluminum casting sectors:

- **Automotive Wheel Hub Production:** Used in Low-Pressure Die Casting (LPDC) to ensure the aesthetic and structural integrity of aluminum rims by removing fine oxide films.
- **Engine & Powertrain Components:** Ideal for gravity die casting of cylinder heads and engine blocks where high metallurgical purity is required to prevent pressure-test failures.
- **Aluminum Ingot & Billet Casting:** Placed in the distribution pans or launders to capture refractory furnace debris and dross during the primary smelting process.
- **Kitchenware & Decorative Hardware:** Ensures a mirror-like surface finish in gravity-fed sand casting by stabilizing metal flow and reducing surface defects.
- **General Machinery Parts:** Applied in any sand or permanent mold casting to reduce turbulence and improve overall casting yield.

Physical Parameters & Mesh Sizes

Mesh Type	Opening (mm)	Thickness (mm)	Weight (g/m^2)	Flow Rate
Fine	1.0×1.0	0.35 ± 0.05	350 ± 20	Moderate
Standard	1.5×1.5	0.40 ± 0.05	320 ± 20	High
Coarse	2.0×2.0	0.45 ± 0.05	300 ± 20	Very High
Heavy Duty	2.5×2.5	0.55 ± 0.10	450 ± 30	High Volume

Mechanical Performance

- **Tensile Strength (Room Temp):** $\geq 600\ N/5cm$ (Warp & Weft)
- **Thermal Shock Resistance:** No cracking or collapse when suddenly exposed to $750°C$ molten aluminum.
- **Stiffness:** The resin coating provides high rigidity, allowing the filter to remain upright in the runner system.

Shape & Customization

We provide the mesh in various formats to suit different casting processes:

- **Bulk Rolls:** Widths of 450mm, 900mm, or customized.
- **Cut Sheets:** Square, rectangular, or circular (e.g., $100 \times 100mm$).
- **3D Forms:** Molded filter caps, cups, and conical bags.

Storage & Handling

Store in a dry, ventilated area. Avoid moisture and direct sunlight. Shelf life is 24 months if stored in original packaging. Handle with gloves to avoid skin irritation.