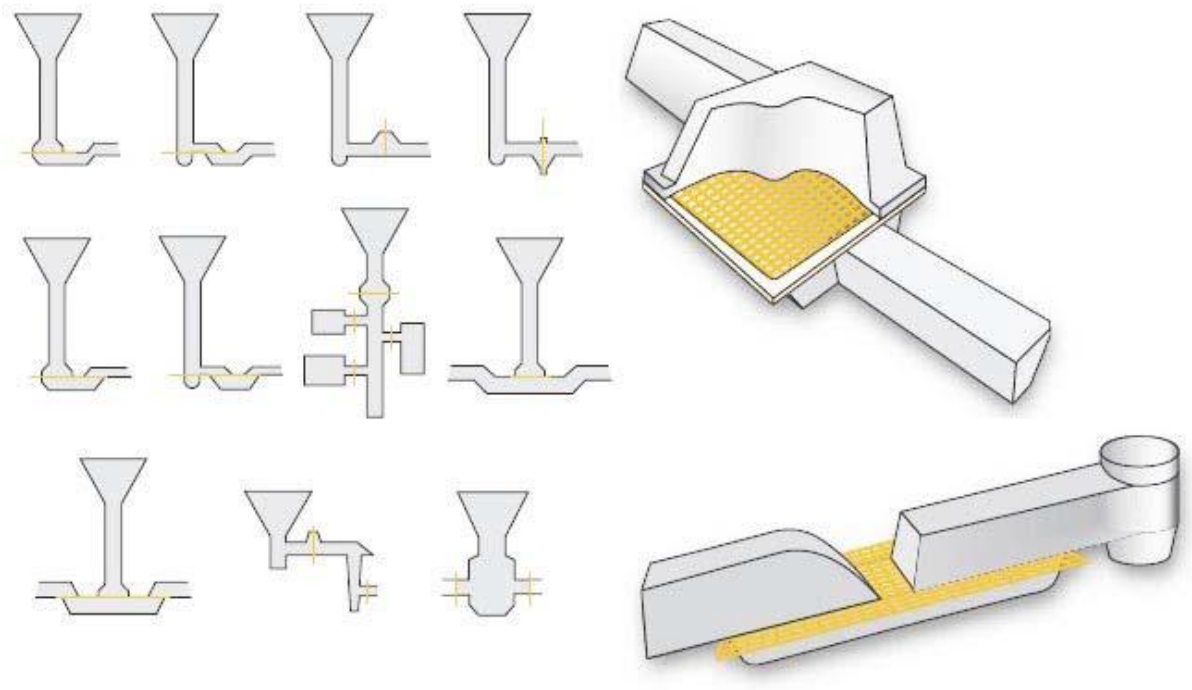
FIBERGLASS MESH FILTER USE GUIDE

The fiberglass mesh filter is generally used in a gating system but it does not mean that the other metal purity process on molten metal are unnecessary. On the other hand, if there is too much slag, the mesh filter will be easily blocked and won't work at all.

Compared with iron or steel mesh filters, fiberglass mesh filter have a weakness in that it is not so rigid and strong as iron or steel mesh, and it will become soft when met with molten metals. So the users must take these factors into account.

1. Use the fiberglass mesh filter according to the pouring weight, pouring temperature and pouring time, etc
2. Use the fiberglass mesh filter considering the effective area and fixing area
3. Choose a suitable mesh (1.5x1.5mm and 2.0x2.0mm are most common for iron filtration and 1.0x1.0mm and 1.5x1.5mm are commonly used for non-ferrous castings filtration)
4. Since fiberglass mesh will become soft when in contact with molten metal, so fixing or holding is very necessary.

PLACEMENT



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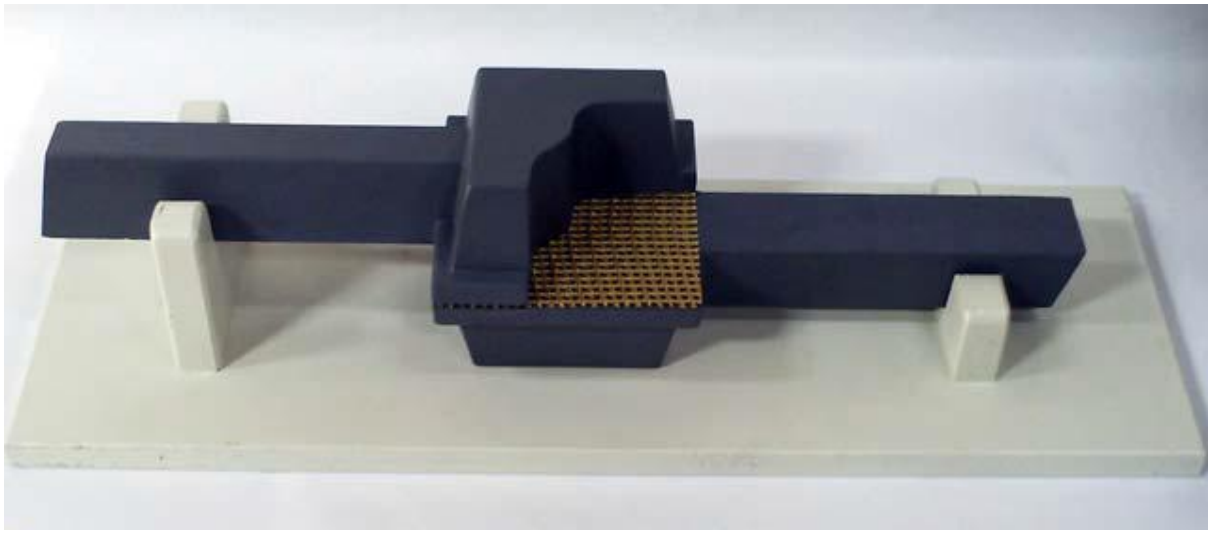
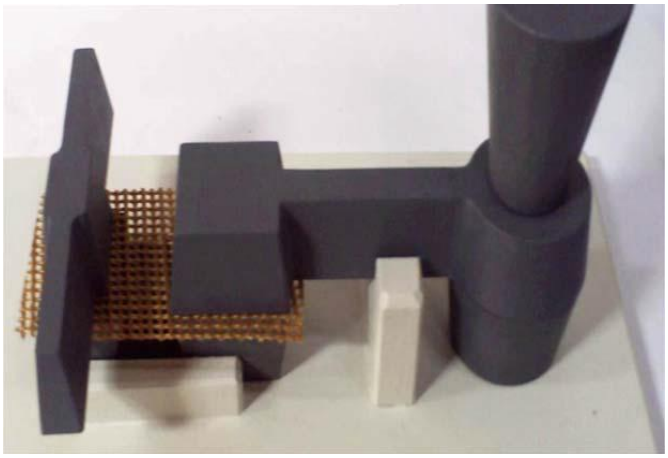




The mesh filter is better placed in the mold cavity or castings as close as possible. In this way it will reduce breakages and capture more sand slag.

Filter may be placed at the intersection between the pouring cup and runner. Historically, the best filtration results have been achieved by placing the filter as close to the ingate as possible.

Fiberglass filters can be located anywhere within the pouring system. The best results are obtained when the filter is placed as close as practical to the ingate.

SECTIONAL AREA

Sectional Area of filter = Sectional Area without filter / (a x b)

a) Filter open area: 50-60%
b) Filtration efficiency: 60-80%

So the sectional area with the filter is normally about 2-3 times that without a filter.

CAUTION

- Try to avoid the first pouring of molten metal that will directly impact the filter.
- Beware of oblique pull, abrasion and fracture. The filter size should be greater than size of section by about 20 - 30mm.
- Handle with care during loading and unloading to prevent compressing or stretching and oblique pulling on the mesh.

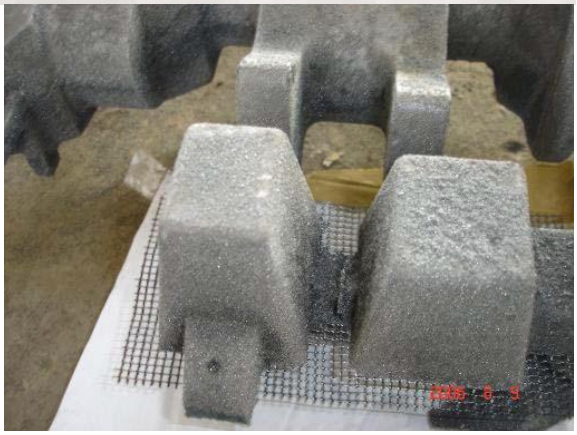
FLOW RATES FOR SILICA MESH FILTER

The following molten metal flow rates were calculated using a 10 inch (255 mm) metal head and all silica mesh used was resin-coated.

Type of Metal	Flow Rate with 1.0mm Mesh	Flow Rate with 1.5mm Mesh	Flow Rate with 2.0mm Mesh
White Iron	0.105 kg/sec/cm2	0.116 kg/sec/cm2	0.254 kg/sec/cm2
Gray Iron	0.105 kg/sec/cm2	0.116 kg/sec/cm2	0.254 kg/sec/cm2
Malleable Iron	0.105 kg/sec/cm2	0.116 kg/sec/cm2	0.254 kg/sec/cm2
Compacted Graphite Iron	0.101 kg/sec/cm2	0.11 kg/sec/cm2	0.238 kg/sec/cm2
Ductile Iron	0.105 kg/sec/cm2	0.105 kg/sec/cm2	0.246 kg/sec/cm2
Carbon Steel	0.116 kg/sec/cm2	0.158 kg/sec/cm2	0.256 kg/sec/cm2
Stainless Steel	0.116 kg/sec/cm2	0.161 kg/sec/cm2	0.256 kg/sec/cm2
Brass	0.116 kg/sec/cm2	0.193 kg/sec/cm2	0.224 kg/sec/cm2
Bronze	0.102 kg/sec/cm2	0.098 kg/sec/cm2	0.11 kg/sec/cm2
Aluminium	0.013 kg/sec/cm2	0.016 kg/sec/cm2	0.024 kg/sec/cm2

General mesh Size recommendations for the most common Alloys

Alloy	Recommended Mesh Size
White Iron	2.0mm & 1.5mm
Gray Iron	2.0mm (above 100kg)& 1.5mm (below100kg)
Malleable Iron	2.0mm & 1.5mm
Compacted Graphite Iron	2.0mm
Ductile Iron	2.0mm (below100kg) & 2.5mm(above 100kg)
Carbon Steel	2.0mm & 1.5mm
Stainless Steel	2.0mm & 1.5mm
Brass	2.0mm & 1.5mm
Bronze	1.5mm & 2.0mm
Aluminium	1.0mm & 1.5mm & 2.0mm



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