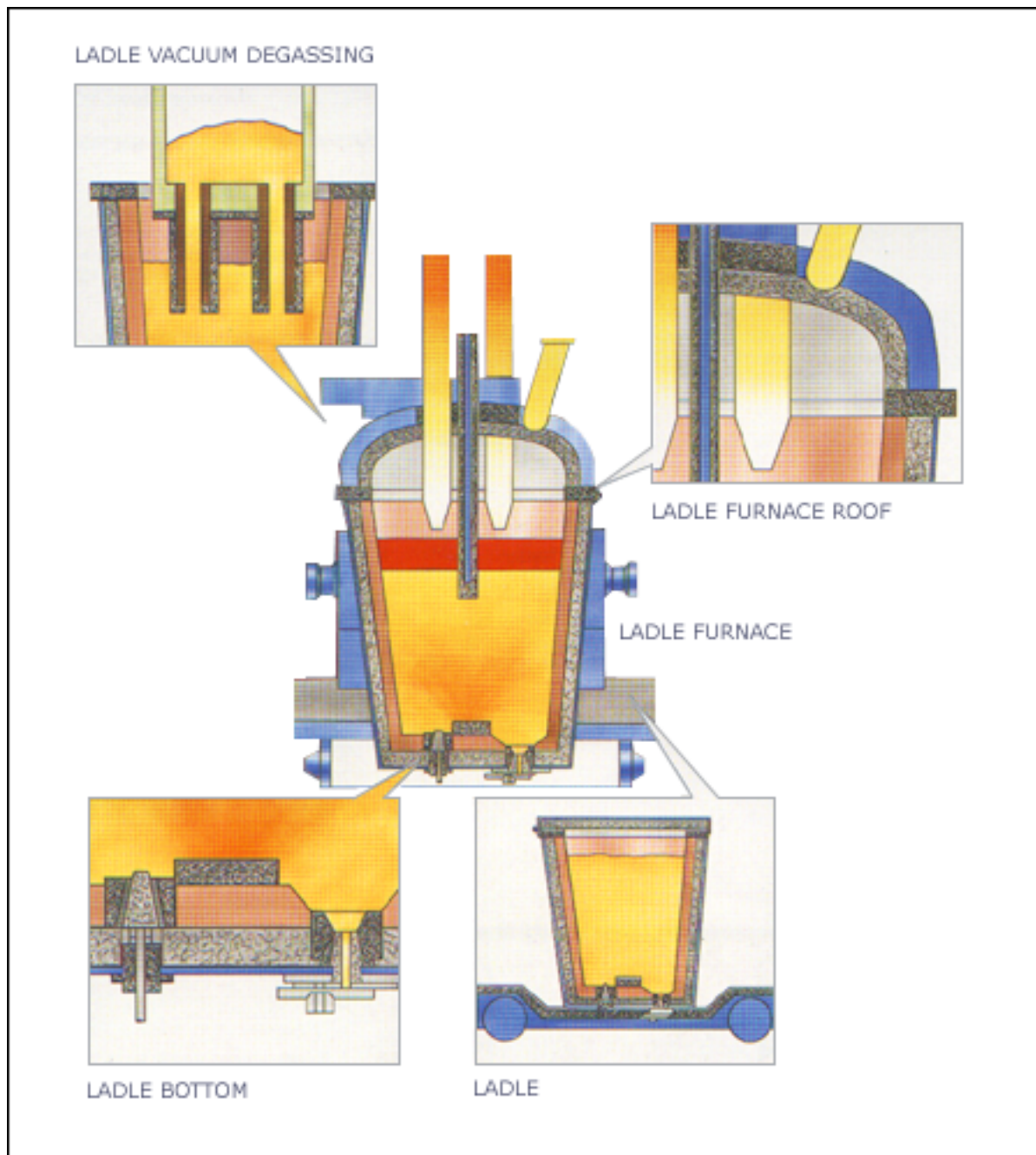
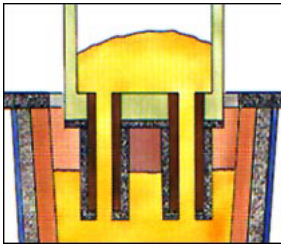


## FIBRETECH: SAVING COSTS IN SECONDARY STEEL MAKING

A unique range of Stainless Steel Fibres for Ladle Furnace Refractories offering:

- Improved Refractory Performance
- Lower Installation Costs
- Better Operating Efficiency
- Lower Refractory Costs
- Increased Operating Plant Availability





## LADLE VACUUM DEGASSING

### Snorkel Legs

This refractory lining is exposed to repeated thermal cycling and prolonged exposure to high temperatures, often up to 30 minutes. A fibre-reinforced refractory lasts considerably longer to give significant economies in production and maintenance costs.

**Recommendation: ME 446**

### Sprayed re-lining to Snorkel Legs

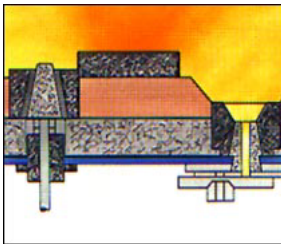
This interim repair prolongs the overall campaign life of the degasser vessel. By adding fibres further cracking and spalling of the sprayed relining is inhibited and the vessel's campaign life improved still further.

**Recommendation: ME 446**

### Soffit Protective Lining

Radiant heat and splashing molten steel often combine to crack and spall this refractory lining. If not stopped, this leads to expensive repairs to vessel steelwork. Fibre addition will hold cracked refractory intact, reducing the risk of these costly repairs.

**Recommendation: ME 446**



## LADLE BOTTOM

### Impact Pad

As with a tundish impact pad, this suffers repeated thermal shock during its life. ME fibres, at 34% by weight addition can improve performance by 100% or more, reducing downtime and cutting refractory material and installation costs by at least 50%.

**Recommendation: ME 446**

### Nozzle and Purge Plug

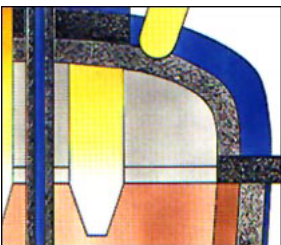
A fibre-reinforced plug or nozzle has increased service life over other designs. Even when cracked the refractory is held tight, maintaining a more consistent shape thereby improving durability and service life and reducing production costs.

**Recommendation: ME 446**

### Seating and Well Blocks

Seating and well blocks for ladle nozzles and porous plugs are expensive consumables. A fibre reinforced block can last as long as the bottom lining, significantly cutting ladle downtime and yielding important savings in energy and maintenance.

**Recommendation: ME 446**



## LADLE FURNACE ROOF

### Delta Section

In this important application damaged refractory causes expensive heat loss and repair. ME fibres minimise these costs, particularly in the thin refractory walls between electrodes, denying heat an escape path and keeping energy and production costs down.

**Recommendation: ME 446**

### Ladle Roof Uning

Production costs rise when aggressive slag attack and extreme shock combine to reduce the lining integrity and increase energy loss and maintenance costs. ME fibres hold the lining intact for longer, thereby improving thermal insulation and energy conservation.

**Recommendation: ME 446**

### Ladle Up

Intimate contact between the roof and ladle lip is essential to prevent heat loss and minimise production costs. A fibre reinforced lip is more resistant to distortion so even if cracked, heat retention and energy costs are optimised.

**Recommendation: ME 446**



## LADLE

### Security Lining

Without fibres movement of the security lining (eg thermal expansion, mechanical shock) can crack the refractory, shorten the lining's working life and increase the risk of hot metal run-through. Fibres reduce both these risks, ensuring a longer ladle campaign, reduced downtime and lower maintenance costs.

**Recommendation: ME 446**

### Ladle Transfer Car

Splashing steel and the loading and unloading of the ladle can damage the car's steelwork and refractory lining. A fibre-reinforced lining resists thermal and mechanical shock, avoiding the need for frequent costly repairs.

**Recommendation: ME 430**