

Ceramic Breaker Core

Slash your fettling costs - DRASTICALLY!

Ceramic Breaker Cores are designed to be a cost-effective alternative to **Sand Cores** while providing some **additional benefits**. Ceramic breaker cores are sintered mullite and contain no volatile combustibles. The thermal properties of the ceramic prevent metal cooling, avoiding early neck solidification, which results in **shrinkage free casting**. High refractoriness facilitates clean, **fusion free** riser-casting junction. Labour savings are realized due to easy riser removal. Breaker cores tailored to your casting needs, are available in various sizes/shapes. Some Ceramic Breaker Cores currently being manufactured by us are as below:



Advantages of Ceramic Breaker Core:

- Substantial **cost and time savings in fettling**, resulting in higher throughput and faster billing to customer
- **Saving in metal material loss, labour costs and consumables** due to absence of gas cutting, gouging, weld cutting
- Freedom from **sand fusion** around riser neck
- Reduction in **heat treatment cost** as risers would be **broken off / hammered** prior to heat treatment (without any fear of cutting cracks which are normally observed in high Manganese Steel castings if gas cutting / weld cutting is used)
- Reduction in rejection due to **neck shrinkage** or salvage operations
- Freedom from **core production bottlenecks**

Breaker cores have taken on various shapes and sizes but the standard breaker cores have 40%, 50%, and 70% round openings, depending upon the alloy involved. This is where the diameter of the opening is 40%, 50% or 70% of the diameter of the riser diameter. Depending on casting size and section we make breaker cores with opening from 20mm up to 100mm diameter.

We make **mesh breaker cores** which is widely used in the SS 300 series castings. The **star breaker cores** are also used in SS 300 series and Manganese Steel castings. Others shapes include **Oval** and **kidney shaped openings**. These are commonly used where the casting design does not have room for a round contact, such as on a long thin section of the casting. Normally, the openings in a breaker core are located in the centre of the riser. However, sometimes it is necessary to move the contact to an offset position under the riser. The main reason for offsetting the opening is to make sure that the contact is located over the heaviest section of the casting in a specific area.



D type Breaker Core used for Mn Steel Casting



Mesh Breaker Core used for SS 304 casting

Commercial viability of using Ceramic Breaker cores as compared to in house sand breaker cores

Sr	Sand Breaker Core		Ceramic Breaker Core	Advantage/ Saving
1	Thick		Thin	Lesser material to grind off
2	Sand Fusion		Clean surface – no fusion	Faster grinding
3	Blunt Notch – comparatively larger tolerance needs to be given		Sharp Notch leading to accurate prediction of break line	Less allowance needs to be given leading to material and labour saving
4	Not possible to BREAK RISER		Easily breakable risers	Less wastage / faster movement
5	Cutting by grinding / gouging / gas cutting / fine cracks and undercut by welding rods		Clean break, No cracks in casting	Save Labour / Time / Manpower / Consumables / Primary material
6	Made in house – using productive labour		Bought out	Concentration on core activities
7	Larger time from casting to dispatch		Faster processing	Increase throughput and reduce overhead and finance costs
	Savings in Time, Labour, Electricity, Consumables and Primary Metal			Approx. Rs. 56/- saved per riser **

**based on assumptions that 1 x 30mm ID Breaker Core for 10 kg of Casting weight and SS casting cost @ Rs. 250/kg.

We also manufacture industrial ceramic products like pouring cups for investment casting units, small cores, tubes, heater terminals, etc. mainly catering to foundry, furnace and other metal industries.



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